ARCHIVES HISTORIQUES DE LA COMMISSION

COLLECTION RELIEE DES DOCUMENTS "COM"

COM (80)501

Vol. 1980/0168

COMMISSION OF THE EUROPEAN COMMUNITIES

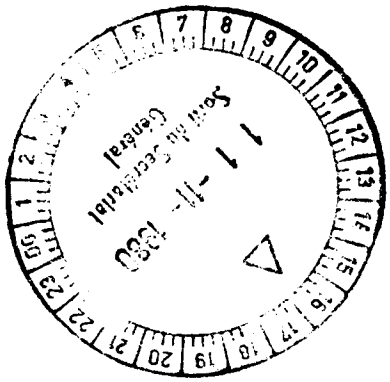
COM(80) 501 final

Brussels, 6th November 1980

ANNUAL REPORT

OF THE DATA PROCESSING DEPARTMENTS OF THE COMMISSION

1979



COM(80) 501 final

ANNUAL REPORT OF THE DATA PROCESSING DEPARTMENTS OF THE COMMISSION - 1979(*)

0 INTRODUCTION

The work of administrative organizations is particularly suited to the introduction and development of data processing techniques. The range of possible uses of data processing is very varied and embraces everyday administrative and management activities, the production of statistical material, the use of econometric models and the remote interrogation of large documentation data bases.

While this is true of administrative organizations in general, it is perhaps even more true of a large international organization like the European Commission, with its responsibility as guardian of the Treaties and as the organ which initiates Community policies and ensures their administrative implementation. Many illustrations may be given of the value of data processing(**), including financial fund management, the creation of documentary, legal, scientific or statistical data bases, which can also be made available to other users (the number of whom is growing with the development of EURONET), applications linked to Community policies (e.g. textile monitoring), the assistance given by data processing in international negotiations (e.g. GATT), internal administrative management (officials' pay).

(*) This report follows on from Report COM(79)678 final on the work of the data processing departments of the Commission - 1978, dated 28.11.1979 and on the 1977 Report of 21 July 1980 - COM(78)347 final. The preparation of the annual report is a consequence of the European Parliament Resolution of 10 March 1975 (Pêtre report).

(**) Annex 3 gives the list of work carried out in 1979.

In addition, as a Community institution using six official languages, the European Commission has to cope with large volumes of translation and interpretation, and here too data processing can provide a useful aid in the creation for example, of terminology banks, the allocation of rooms and interpreters for meetings and in machine translation projects (EURODICAUTOM, SYSTRAN, EUROTRA).

The potential of data processing facilities can, moreover, be seen from the sharp increase in requests for assistance from departments, not all of which can be met. It is therefore important that the Commission should have data processing capacity to match its requirements.

Given this need, it was up to the Commission to select a data processing system, which it did in 1976.

1979 was a crucial year in the implementation of this choice and the difficulties encountered were due largely to the inadequacy of the data processing facilities available.

Since Inspra's CETIS computer centre is managed by the Joint Research Centre, its activities are not included in the present report, which covers only the activities of the Computer Centre in Luxembourg and its associated internal networks.

1. THE MAIN EVENTS OF 1979

11. The progressive implementation of the 1976 decisions

In 1976 the Commission decided:

- to replace the data processing equipment in the Computer Centre and to use the new equipment for all the applications, including those previously contracted out to outside services (in particular the ECDOC part of CIRCE, operated on the CII-IRIS equipment in Brussels, and the time-sharing applications of the Directorate-General for Economic and Financial Affairs).

- to select, following a tendering procedure:

  - a central ICL 2980 configuration (Great Britain)
  - a European technical network: Mitra (France), Nixdorf (FRG) and Olivetti (Italy).

These decisions were progressively implemented from 1979 onwards; notable features of 1977 and 1978 were:

- the departure of the CII-10070 computer(*);
- the delivery at the end of 1977 of the ICL computer(*) which has since then been used in parallel with the IBM computer in order to permit the conversion of IBM applications to ICL;
- a start on the implementation of the Olivetti/Nixdorf network in 1978(*);
- in addition, the taking into operation of the SIEMENS 7740 computer, used for linguistic applications and for certain scientific and technical data bases.

(*) as the 1977 report indicates, p. 6 (Doc. COM(78)347 final).

(**) A diagram of the whole information network was included in the 1978 report - Annex III - Doc. COM(79)678 final.

However, the most crucial year was 1979, when the following events took place:

- conversion of applications from IBM to ICL,
- provisional acceptance tests in June-July 1979 and final acceptance tests of the ICL machine at the end of the year,
- the departure of the IBM computer,
- the setting up of the Mitra/Olivetti/Nixdorf network,
- a start made on the transfer to the ICL computer of the applications previously processed at outside sites,
- progress with the SIEMENS operations and the expansion of the computer's capacity.

12. Transfer of applications to the ICL 2980 computer

The conversion of the main application(*) of the Commission was contracted out to ICL, which used Belgian and French companies as subcontractors. The other applications (totalling 104) were directly converted by the Analysis and Programming Department(**) with the assistance of a team of outside contractors.

At the end of 1979 all the main applications had been converted and made operational, with the exception of the CIRCE documentation applications, which use the STATUS(***) interrogation software. Most of the 104 other applications were successfully converted, since by the end of the year only five had not yet undergone complete conversion(****).

(*) CRONOS, SABINE, COMEXT, OFFICIALS' PAY, CIRCE.

(**) The Commission has a central Analysis and Programming Department within the Directorate-General for Personnel and Administration. The department was set up when a new organizational structure was introduced in 1977 (cf. 1977 report, page 2).

(***) Annex 5 covers the activities of CIRCE in 1979.

(****) Including FMA (fissile materials accounting).

In addition, progress was made with the transfer of applications developed externally for certain Directorates-General (II, III, XII, XVI)(*). However, since the APL language(**) was not yet available on the ICL 2980 computer, certain applications had to be carried out by an outside service bureau.

13. The departure of the IBM computer

The central IBM 370/158 configuration and the network linked up to it were used until the end of October 1979, when the machine was removed. This system had been progressively reduced from March 1979 onwards, particularly as regards the network. Nevertheless, in terms of time/use ratio there was an increased in the average use of the IBM computer: 2035 hours CPU in the first ten months of 1979, as against 2352 for the whole year 1978, although the number of jobs performed fell (73348 in the first ten months of 1979, compared with 101134 in 1978).

14. The development of the European Mitra/Olivetti/Nixdorf network(***)

The progressive reduction in the IBM network was accompanied by the implementation in 1979 of the terminal network connected to the ICL 2980 computer. At the end of 1979 the state of implementation of the new network is as follows(****):

(*) The Directorates-General for Economic and Financial Affairs (II), Internal Market and Industrial Affairs (III), Research, Science and Education (XII) and Regional Policy (XVI).

(**) APL is a programming language intended for users; it is used in particular for modelling.

(***) Annex 10 also provides information on the office computers installed in certain departments.

(****) At the end of 1978 there were around 50 Olivetti or Nixdorf terminals and 34 ICL terminals linked up to the provisional network and 6 ICL RJE terminals.

- 35 Olivetti TC 800 terminals
- 40 Mixdorf 8820 terminals
- 24 Olivetti TCV 450 terminals
- 5 Mitra RJE terminals
- 2 Mitra APL terminals
- 51 ICL terminals connected to the provisional network, and installed when the ICL computer arrived.

As a measure of the quantitative development of the data processing resources it is worth remembering that in 1976 the network comprised 40 terminals.

15. Acceptance of the ICL 2980 computer

The Commission decided to subject the data processing equipment which had been ordered to a provisional acceptance test and a final acceptance test.

The provisional acceptance testing took place in June/July 1979 and related to the central ICL configuration, the Olivetti/Nixdorf terminal network, and the conversion of the applications, in particular the five main applications.

The Commission considered the results of the provisional testing to be satisfactory. Nonetheless, a certain number of deficiencies were noted in the survey report drawn up at the time of the provisional test(*).

(*) The main conclusions are given in Annex 2.

A final acceptance testing procedure was carried out in December 1979. This test related to all the applications, including the CIRCE applications. Numerous statistical data were produced in order to assess the performance of the computer, and these are currently being analysed. The decision to accept the computer on certain conditions, or not to accept it finally, will be taken in the light of the results obtained from this test period.

16. Relations with other European institutions

The data bases developed by the Commission in documentation and legal sectors are also of considerable interest for the other European institutions and the CELEX and CJUS bases are already of an inter-institutional nature.

In the administrative area, the salaries of the European Parliament personnel are administered by the Commission departments and the European Parliament has been offered the opportunity of using the software developed for the Commission applications for its own purposes.

Other data bases, for example the statistics contained in the CRONOS system, have likewise been made available to the other institutions (and other organizations); in due course they will be made available via EURONET to a large number of other enquirers.

Joint projects are also planned, for example (between the Commission and the European Parliament) the management of written questions (and the replies to them), which would thus be available to the two institutions.

The European Parliament also has other projects in the documentation field with which the national parliaments could be associated. The Commission is willing to help in all these areas.

17. Increase in the SIEMENS configuration and a clearer demarcation of responsibilities between DG IX and DG XIII

Following the difficulties encountered in 1978, the management structure, the use of the computer, the workload entrusted to it and the possible future expansion of the central configuration were studied on two occasions.

These studies led to the setting up of a 'steering committee' responsible for the joint management (by DG IX and DG XIII(*)) of the SIEMENS computer. The steering committee is assisted in its task by the SSORG (Siemens service and operations review group) whose members are from DG XIII and DG IX.

It also became necessary to increase the capacity of the SIEMENS computer and to change the SIEMENS 7740 configuration to a 7760 configuration for this purpose. The choice of this method will increase current expenditure by 20% but on the other hand will triple the machine's capacity.

(*) DG IX: Directorate-General for Personnel and Administration
DG XIII: Directorate-General for Scientific and Technical Information and Information Management.

The aim of this decision is to satisfy the forecast needs for the users in the short and medium-term (i.e. until 1981), and in particular the extension of the internal network (increase in the number of interactive users) and of the external network via EURONET from 1980 onwards, the feeding of the data bases and the carrying out of certain development work on the SYSTRAN project. In addition, some of the machine capacity could be used for applications, notably those of the European Parliament, in the context of cooperation with that institution.

2. THE DIFFICULTIES ENCOUNTERED

The progress made in 1979 in implementing the decisions taken in 1976 by the Commission must not be allowed to conceal the difficulties encountered in 1979 and those which still have to be overcome in 1980 and 1981. To a large extent these difficulties are related to the cost of conversion and to the envisaged qualitative and quantitative 'leap forward'. This advance is necessary to cope with the very rapid increase in demand, and the number of staff available is clearly inadequate.

21. The increase in data processing expenditure

The data processing budget has risen from 158 million Belgian francs in 1976 to 630 million Belgian francs in 1979 (after transfers) (*), in other words a fourfold increase in expenditure.

This increase in expenditure has permitted an expansion of the Commission's data processing capacity, since together the ICL 2980 and the SIEMENS 7740 computers have a computing capacity between three and four times greater than that of the IBM 370/158 and CII 10070 computers, which were both in service in 1976. The number of installed terminals has also increased in comparable proportions, rising from 40 in 1976 to around 160 in 1979.

However, the major part of the increase in expenditure is due to the conversion work which has had to be carried out. Indeed, to assess this cost, it is necessary to add to the direct cost of converting the applications, the costs of operating various types of equipment in parallel, the cost of the external service bureaux and the cost of attached staff. In all, the conversion cost calculated in this way is currently 400 million Belgian francs.

(*) Annex 7 provides a breakdown of the expenses for 1979.

While the conversion expenses are very high, taking them into account as a basic element in the choice of equipment clearly favours the manufacturer whose equipment is already present in the Computer Centre. For political reasons, the Commission in 1976 wished to take a decision independently of this financial constraint.

In 1980 the expense deriving from the conversion of applications should drop.

However, difficulties have arisen in the conversion of CIRCE to STATUS/ICL: there is a great deal of uncertainty with regard both to the practical disadvantages and to the final cost of the operation. The Commission is therefore examining possible alternative solutions in terms of both cost and efficiency.

Moreover, it is certain that the current central configuration is not sufficient to meet the increase in demand; the configuration must be expanded in 1980 and the Commission is tudying ways of doing this.

The same applies to the terminal networks linked to the maxi computers.

Finally, owing to lack of permanent staff it will be necessary in 1980 to continue to seek the assistance of ICL and to use outside services (*).

It therefore seems clear that if the Commission departments are to have the support of the most up-to-date data processing equipment, there can be no question of reducing the funds allocated for this purpose, at least in the short term.

22. Limits of the machine capacity

---

*) Outside staff are needed particularly for assistance in programming (cf. Annex 9).

In the final months of 1979 it became obvious that the computer was finding it difficult to cope with the volume of work involved in all the applications. Obviously a transitional period is required to ensure a satisfactory outcome to such an enormous conversion and transfer operation. Nonetheless, it is already clear that the capacity of the ICL 2980 computer will not be sufficient to cope satisfactorily with all the work required by the users.

1980 will have to be devoted, as a matter of priority, to optimizing the converted applications, stabilizing operations and optimizing the VME/B system of the ICL computer(*).

This situation is very critical. Users have become extremely irritated at the long delays and at the quality of the services provided. At the same time, owing to overloading of the machine, the productivity of the data processing departments is falling, and the staff, who have already had to undergo retraining and become accustomed to a new computer, are dissatisfied with their working conditions.

If we are to avoid a relative decrease in the data processing capabilities of the Commission, the capacity of the central configuration must be enlarged. If this is not done, it will become impossible even to consider new applications, and the survival of certain applications currently in existence will be jeopardized.

(*) The operating system of the ICL 2980 computer is known as "VME/B".

23. Insufficient staff

The requests for additional personnel in recent years (1977, 1978, 1979) were rejected or only very partly met(*) by the budgetary authority, the Council adopting overall a negative attitude with regard to Commission requests, which were only partly reinstated in the final phase of the budgetary procedure. Thus during the discussion of the draft budget for 1980 the Council did not grant a single one of the 50 posts asked for by the Commission for the data processing sector. The European Parliament reinstated 39 of these posts but since the budget was subsequently rejected the need for staff remains.

The lack of permanent staff has been compensated for by a large-scale use of outside staff. In general terms the cost of using outside staff, in one form or another, can be put at 200 million Belgian francs.

A policy of this nature is unsatisfactory from several points of view:

1. Outside personnel costs, on average, twice as must as permanent staff.
2. Since the ICL 2900 range is not in widespread use on the continent of Europe, it is difficult to find staff of a satisfactory level capable of working with this kind of equipment. Moreover, personnel of this nature are extremely mobile, and this does nothing to help continuity.

(*) Annex 6 deals with staffing questions.

3. Onve a certain ratio of permanent staff to temporary and external staff is passed relations between them become difficult, particularly since, when they leave, outside contractors leave behind them applications whose maintenance has to be undertaken, often in unsatisfactory conditions, by the Commission staff.

The share in the maintenance work carried out by the permanent staff is increasing, and the fact that it is impossible to undertake new applications is slowing down the rate of development work. A consequence is that the work of the programmers is becoming increasingly tedious.

The need to increase the staff of the Commission has been stressed in particular by ICL and also in an expert opinion drawn up by a service company. Indeed a few figures illustrate this need very clearly. The data processing budget increased fourfold between 1976 and 1979. The computing capacity and the number of terminals also increased fourfold during the same period and the machine time used grew by a factor of 6.5 between 1973 and 78. Against this, staff figures increased by 30% between 1976 and 1979. These different studies of the staff requirements led in 1979 to the calculation that the shortfall in posts was 144. Why is this figure so large?

1. To begin with, the low recruitment figures in recent years have led to a progressive increase in the shortfall in posts. The data processing requirements of the various Directorates-General have only been partly met and, when they were, it was often due to the assistance of outside contractors(*).

(*) Annex 4 lists the work which had to be turned down in 1979.

2. A 'system and network' section has been created within the computer operations division to take account on the one hand of the adoption of the ICL computer, and on the other of the development of the internal work. But the number of persons employed in this section is very small, given the increase in the work it has to do. The ICL computer is a particularly complex machine and its system is not yet sufficiently stabilized. A permanent team of systems engineers is therefore necessary to ensure satisfactory operation. At the same time the number of terminals has increased fourfold and remote batch terminals have been acquired by the Commission. It is therefore necessary to increase the 'network' team and to set up a group capable of helping users and coordinating the entire operation.

3. The growth in the requiremens of the Directorate-General makes indispensable a larger data processing budget, the introduction of analytical accounting and forecasting systems, the drawing up and implementation of a medium-term data processing plan and, consequently, an increase in the administration, management and project implementation infrastructure (*).

4. The difficulties encountered also have an effect on the work of the analysis and programming department whose numbers will have to be increased if recourse to outside services is to be avoided. The process of decentralizing certain applications, which the Commission is studying at present, and which will involve using staff from the user services, will not solve the problem of the lack of programming staff engaged in feeding the maxi computers or providing support to users.

   It is clear that, together with the volume of work to be handled by the computer, lack of staff is the major problem in the immediate future for the Commission data-processing sector.

(*) The setting-up of a data processing planning and administration unit was announced in last year's report. The establishment plan in the annex shows the present organization of the data processing sector.

The most urgent and major requirements are in the data-processing planning and administration division and in the computer operations division, whose operation is currently dependent on the large-scale attachment of staff from ICL.

5. The difficulties in the "SIEMENS operations" section

The problem of the balance between the permanent staff and outside staff is also present, albeit to a lesser degree, in the team operating the SIEMENS computer. This computer can only be operated at the moment with the assistance of outside contractors. In 1979, the SIEMENS team comprised, in addition to one senior consultant, five outside contractors, performing the tasks of systems programmer (1), data-base managers (2) and operators (2).

Other difficulties which were only partly overcome in 1979 included:

- the establishment of priority criteria to avoid new overloading of the machine,
- the improvement of the procedures already established with the users,
- the establishment of a tariff for the purposes of invoicing in due course the costs to the users of the network via EURONET.

Conclusion

1979 saw the departure of the IBM computer, and a consequent extremely difficult operation in the data processing sector as a result of the enormous work involved in conversion(*). Thanks are due to the outside staff and the Commission staff employed on this work for their assistance and dedication.

It remains true that the increase in the workload has led to increased delays and a deterioration in working conditions for users and data processing personnel. The machine capacity of the central configuration should therefore be increased in order to absorb this extra workload and to re-establish the previous level of service to users. If this is not done, it will become impossible to accept new applications and certain applications will have to be abandoned.

The conversion of the applications, and the operation of the ICL computer, have only been possible owing to the presence of a large number of ICL staff and assistance from other outside contractors. This is a situation which cannot continue, and as the computer operations division does not have sufficient staff to take over the computer its numbers must be considerably increased.

This doubly unsatisfactory situation, whereby there is a shortage both of computer capacity and of staff, may appear paradoxical if one considers the large increase in the data-processing budget in recent years.

(*) The list of operational applications (Annex 11) shows the size and range of the processing carried out.

However, a large part of the budget was used to finance the conversion and to pay for the outside staff, and in addition, despite its inadequacy, the theoretical capacity provided by the ICL and SIEMENS computers is a great deal higher than that of an IBM 370/158 computer, so that the network has increased fourfold.

The fact is that the data processing sector of the Commission, like the data processing departments of many organizations and private companies, is in a difficult transitional phase. The era of domestic data processing is not far off and experts already believe that in a few years' time it will be as normal to use data processing terminals as to use the telephone. This technical progress is leading to new, less centralized organization methods which will offer certain advantages. The data processing sector must therefore be able to carry out for the Commission's departments work which would not have been conceivable otherwise, even with very much larger numbers of staff.

Nonetheless, a development of this kind will inevitably encounter difficulties, and cannot be carried out unless the budgets are increased to take account of the requirements and the hopes placed on data processing. The Commission was aware of the general nature of the problems set out above and prepared a report on 'The challenge of the new information technologies for European society - a Community solution' (*) for consideration by the European Council on 28 and 29 November 1979.

In the report the Commission suggested in particular that certain measures should be taken to promote innovation, in particular public access to Community data banks and the planned inter-institutional information system.

It is clear that the Commission must set an example in the development of data processing techniques within its departments if these measures are to be successful.

(*) COM (79) 650 final

A N N E X E S

1. Data processing equipment at the Commission
2. Technical annex on the final acceptance test for the ICL computer
3. Data-processing jobs in 1979
4. Jobs not taken on in 1979
5. CIRCE
6. Table of staff
7. Table of expenditure in 1979
8. Organigramme of the data-processing sector
9. Contracts in force for programming assistance
10. Office computers in other departments of the Commission
11. List of operational applications

ANNEX 1

DATA-PROCESSING EQUIPMENT AT THE COMMISSION

1. ICL 2980

11. Central configuration

One main memory - 7 megabytes
42 exchangeable discs with 5 controls
4 drums with 2 controls
12 tape cabinets with 3 controls
4 printers
2 card readers
2 consoles
1 card punch
2 data transmission network processors (CNP)

12. The network

35 OLIVETTI TC800 terminals
40 NIXDORF 8820 terminals
51 ICL 7561 terminals
24 OLIVETTI TCV450 terminals
8 ICL (RJE) remote job entry terminals
5 MITRA remote job entry terminals

2. SIEMENS 7760

21. Central configuration

One main memory - 2 megabytes

6 200-megabyte disc units with 2 controls

4 tape cabinets with 1 control

3 selector channels

1 printer

1 card reader

1 front end processor (DUET)

22. The network

12 SIEMENS 8161 synchronous terminals

1 APL, SIEMENS 8152 synchronous terminal

7 SIEMENS 8122 local printers

1 APL SIEMENS 8120 local printer

15 NEWBURY (7002, 7005, 7009) asynchronous terminals

5 DIABLO (1620) asynchronous/printer terminals

5 TALLY local printers

4 SIEMENS interface multipliers (SVV) for the network

ANNEX 2

TECHNICAL ANNEX ON ACCEPTANCE OF ICL EQUIPMENT

The rental contract for the ICL 2980 equipment provided for an acceptance procedure to check that the five main applications converted by ICL and the applications converted by the Commission's departments were operating satisfactorily. Objective measures were suggested for measuring the reliability and the flow of the workload specified in the contract.

The first demonstration was held in June 1979 by the Commission and ICL jointly with the help of two observers from outside the Commission (CCA and ESA).

Taking account of the length of time taken to update the data bases and of the lack of batch operations during the night, the observation period was artificially reduced to approximately 20 hours during which the number of jobs to be carried out was sufficient to keep the machine occupied. The performance of the documentation software proved inadequate. A substitute load was therefore introduced for 'provisional'acceptance.

The main conclusions drawn were as follows:

- Computing capacity was sufficient to cope with the load specified in the contract (11 500 hours CPU 145 in 16 hours).(*)
- The capacity of the central memory was insufficient and consequently response time at the terminals was too long;
- The reliability of the machine and of the software was not outstanding; (15 hours between stops);
- The magnetic tape units had an unacceptably high error rate.

(*) However, this load was not processed during the two day-shifts alone, since night and week-end shifts contributed to this result.

ANNEX 3

DATA-PROCESSING JOBS - IN 1979

I. Data-processing jobs carried out in 1979 in the administrative and financial field.

11. Administration

a) Staff management

- Staff files: conversion IBM/ICL, operation, development of on-line interrogation;
- Posts and allocation of posts: conversion IBM/ICL, operation, development of on-line interrogation, development of a career-file, development of a competition management system;
- Management of absences and leave: conversion IBM/ICL, operation, development of on-line interrogation and statistics on absenteeism, study of data acquisition by optical scanning.

b) Officials' pay

- Pay: conversion IBM/ICL, operation, adjustments;
- Allowances and deductions, conversion IBM/ICL, operation, development of a mission expenses management system;

c) Social activities

- Sickness insurance: conversion IBM/ICL, operation;
- Stagiaires, students on scholarships, European School, Paul Finet Foundation: conversion IBM/ICL, operation;
- Management of restaurants and supermarkets: conversion IBM/ICL, operation;

d) Management of equipment

- Telephone directories: conversion IBM/ICL, operation;
- Supplies, stocks of furniture and equipment inventories, conversion ICM/ICL, operation.

e) Miscellaneous

- Library catalogues, translation planning: conversion IBM/ICL, operation;
- Allocation of interpreters: development and implementation of an on-line management system (SAFIR).

12. Accounts

- Operation and adjustment of accounting programmes;
- Analysis of commitments and payments, broken down by country and national currency of the recipient;
- study of an integrated accounts system (SICOMU).

13. EAGGF

- Development of on on-line management system for the EAGGF Guarantee Fund;
- Development and implementation of an on-line mangement system for the EAGGF Guidance Fund.

14. ECSC funds

- Development of a fund management system;
- Analysis of a management system for borrowings and loans.

15. Social fund

- Development and implementation of a management system for financial statements.

16. European development fund

- Conversion IBM/ICL, operation, adjustments.

17. Agricultural rates

- Conversion GAMMA 10/ICL 2903, operation.

18. Agricultural accounts information network

- Conversion IBM/ICL, operation, development.

19. Management of fishing licences

- Preliminary study for computerization.

2. Data-processing jobs carried out in 1979 in the field of documentation

The jobs carried out during 1979 by the special department for documentation data-processing fall into five main categories:

21. Multilingual projects

Work carried out to develop the terminological data base EURODICAUTOM concentrated mainly on the following points:

- conversion of the IBM computer to the SIEMENS computer involved a considerable amount of work, both at the programming level and at the commissioning stage;
- a second version of the interrogation software is practically finished; the features of this software are based on experience gained over recent years;
- certain one-shot programmes have been written to speed up the work of increasing the number of terms in the data base and to improve application management.

22. The Commission's documentation systems

Work continued on the implementation of the SAGAP system for the management of addresses and publications; address conversion was completed.

Within the context of computerization of the Press Offices, the standardization and acquisition of addresses has been undertaken by an outside firm for London, and a contract is being drawn up for a similar system for the Rome Press Office. Initial steps have been taken to contact outside experts in respect of the Copenhagen office.

The task of system design and programming for the Customs Union' department of a multilingual list of the names of and synonyms for chemical products listed in the customs tariff, which has been carried out under an external contract supervised by the functional analyst, is nearing completion.

Following the feasibility study for a file of addresses of credit institutions requested by DG XI, computerization of this project was postponed.

The feasibility of computerizing the practical guide for using the generalized preferences scheme was investigated, but not pursued.

23. Projects concerning scientific and technical information and documentation (IDST)

Projects within the context of IDST concerned:

- a feasibility analysis of a data base containing the results of research on treatment for cancer, and possible use of the EURONET network for exchanging information between hospitals;
- supervision of the experimental implementation of a network linking certain information centres on medicines.

With regard to EURONET-DIANE, a free information service has been analyzed and implemented. It provides in real time information on the EURONET network, the hosts connected to the network and the data bases they offer. An additional service, for which a charge would be made, to provide detailed information on the terminals, the hosts and the data bases, was analysed.

24. Utilities

There has been considerable re-organization of the SCRAPBOOK application, which processes texts and transmits massages, with a view to increasing the range of functions available to users and to improving software reliability.

This led to the second version, which is now available.

The more general problem of link-up between text processing stations and the central computer has also given rise to a fair number of studies and solutions, including link-up of a one-user system to the SCRAPBOOK network and analysis of a system for transferring texts and managing messages between heterogeneous stations and the computer.

The SINET software package was used to develop a system for managing internal meetings and follow-up of measures agreed.

25. Conversion

A study was made of the possibility of converting DOME, which is part of GOLEM under GRIPS to see whether the data base could be made available via EURONET.

In view of the lack of resources upstream for feeding tha data base and the organization of a EURNONET user service, a decision was deferred until the necessary conditions had been fulfilled.

Conversion of the EURONET address file which forms part of the GOLEM software under the GRIPS software is nearing completion.

3. Data processing jobs carried out in 1979 in the field of statistics

31. Projects in hand in 1979

These projects are at the analysis and/or programming stage. For some (one-shot) projects completion involves also the production stages.

311. External trade and related statistics

- General maintenance of programmes on the external trade of the European Community, including preparatory work for the inclusion of Greece in the general statistics and the setting up of a programme for checking supplementary units.
- Extension of the textiles statistics system to other categories of sensitive products (oil, footwear etc.).
- Generalization of the system for monitoring textile imports.
- Setting up of a new system for the generalized preferences scheme including comparison of imports under the scheme and normal imports.
- Tariff statistics and preparatory work for the GATT multilateral trade negotiations.
- Formatting of data on external trade with a view to introducing them into CRONOS.
- Preparation of the monthly external trade statistics bulletin.
- ACP statistics yearbook 1972/1978.
- Preliminary study (based on a reduced number of data) of a system for calculating indices of the foreign trade unit (average).

312. Other applications - surveys etc.

- Oil crisis - import monitoring system (RJE data).
- Processing of ECSC questionnaires.
- Steel investment survey.
- Processing and forecasting - fruit tree survey 1977.
- Preliminary work on agricultural holdings survey 1977.
- Survey of accidents in the iron and steel industry.
- Typology of agricultural holdings (based on data from the '1975 structures survey'.
- Work on sectoral analysis.
- Study of the ICL statistics 'packages' and of TSP (time series processing)
- Setting up of new CRONOS domains (FINA, SNAG),(sets of data relating to time series on financial accounts and foreign trade in agricultural products), rewriting of the bulletins in OSIRIS (agriculture, energy, balance of payments).
- Processing of data taken from GATT for specific one-shot projects (DG I, DG II, DG VIII).

32. Operational jobs

321. External trade and related statistics

- Monthly, quarterly and annual external trade statistics of EEC countries. These statistics include various breakdowns by country traded with, economic classification zone, product and category of product, and form the basic documentation on European trade. These statistics in themselves represent a quarter of the work on statistics.
- The ECSC external trade statistics are similar to the external trade statistics but concern only ECSC products and also cover calculations of indirect trade in steel and the EURACIER tables.

- Related statistics cover information used for tariff and trade negotiations, monitoring systems, and information concerning the generalized preferences schemes.
- The external trade statistics for ACP countries (Africa, Caribbean and Pacific) cover all the trade of developing countries benefitting under the Lomé agreements with detailed breakdown by partner country and by products.

322. Miscellaneous applications

- Basic analysis of the 1975 industrial survey.
- Basic analysis of the 1975 survey on the structure of agricultural holdings.
- Use of OSIRIS to produce statistic bulletins of data contained in CRONOS.
- Analysis of raw materials.
- Processing of the ECSC questionnaires (original version).
- Investments in the iron and steel industry.
- Sectoral display panels.
- Structural data bank.

33. Jobs which have been converted during 1979

External trade and related matters

- General programme (publications based on the foreign trade classification NIMEXE, TDC, CTCI, agricultural products).
- Formatting of data for CRONOS (raw materials, animal products, agricultural and industrial products).
- Monthly application.
- ECSC and indirect trade in steel.
- Textiles, tables of statistics.
- Textiles monitoring - MFA (Multi Fibres Agreement).
- Associates.
- ACP.
- Transport: NTS. (Nomenclature of goods for transport statistics).
- JULES input-output package.

4. Data-processing jobs carried out in 1979 in the field of general statistivs software

41. CRONOS (chronological series base)

Completion of the IBM/ICL conversion, adjustments, operations, language study for EURONET, study for a catalogue, a computerized notebook and a flag system, construction of a new generator.

42, SABINE (nomenclature base)

Completion of the IBM/ICL conversion, operation, development of input and output interfaces, extension to management applications.

43. OSIRIS (table generator)

IBM/ICL conversion, completion of the final version (2.4), operation with extension of use (CRONOS publications, management jobs).

44. PASCAL(programming language)

Conversion of the IBM compiler to ICL, consolidation of documentation and user carriers.

45. SIGISE (integrated statistics data base management system)

Specifications studies.

ANNEX 4

JOBS NOT TAKEN ON IN 1979
(owing to lack of resources)

1. In the field of administration and finance

Extension of and adjustments to the following applications:

- staff files
- posts and allocation of posts
- allowances and deductions
- sickness insurance
- telephone directories
- supplies
- library
- translation planning
- accounts
- EAGGF Guarantee Fund
- EAGGF Guidance Fund
- ECSC fund (DG XVIII)
- Social Fund (DG V)
- Regional Fund - ERDF (DG XVI)

2. In the field of documentation

- Within the context of the SAGAP project: management of a file of addresses for the distribution of publications, management of orders and stocks, and accounts;
- File of addresses of credit institutions;

- Delay in the conversion of EURODICAUTOM (terminological data base) during transfer from IBM to SIEMENS.

3. In the field of statistics

- Survey on the structure of salaries
- Survey on labour costs
- Further analysis of the 1975 agricultural survey
- Fishing accidents.

ANNEX 5

CIRCE

(Information and documentation research centre of the European Communities)

Conversion and transfer

The activities of CIRCE during 1979 were largely centred on converting CIRCE data bases to STATUS software and transferring them to the Commission's new ICL computer at the Computing Centre in Luxembourg.

This work proved to be particularly difficult with regard to CIRCE and involved a great deal of work for both the ICL/DATASKIL and CIRCE teams.

Since the new software was unsuitable from the outset, a considerable number of new measures had to be developed, tested and implemented.

Once conversion was completed, operation of the different data bases in parallel on the output and input software greatly increased the necessary management work as compared with normal operation and consequently meant an exceptionally high workload for the entire CIRCE team.

Training measures undertaken related chiefly to retraining.

Developments

As a result of the situation described above, and of budgetary restrictions in the field of data processing, it was not possible to implement any new developments, despite requests from a number of Commission departments.

The only action in this field concerns follow-up development work in the new ASMODEE data base which is to be used to check the application of directives by Member States (*). This data base has been in operation on an experimental basis since July 1979 and information is fed in regularly.

Operation

Operation has also been affected by conversion and transfer operations, in particular by problems of access to bases under STATUS, and problems in the drawing up of selective distribution listings or of more sophisticated products which are part of the services offered to users. An initiative has been launched aimed at using the ACTU file for the distribution of Commission documents to the external offices.

Index of Community legislation in force

The work of drawing up a list of Community legislation in force with the aid of the CELEX system is somewhat behind schedule owing partly to an unprecedented volume of control operations (validity and indexing) and

---

(*) The name of the USACAD data base for checking the application of directives has been changed and the base is now known as ASMODEE.

was also affected by changes of data processing equipment and the relevant conversion problems.

Having regard to the work still to be completed and to the resources available, the new publication data for the Index has been set for 1 July 1980.

Remote access to Community data bases

In addition to linking several outside bodies to CELEX by telecommunication on an experimental basis, a pilot experiment has been launched to link the Rome office of the European Communities to the Commission's internal documentation bases.

The main aim of this one-month experiment was to:

- test the technical possibilities of remote interrogation;
- determine the specific documentation needs of the offices;
- evaluate the contents of computer bases and the extent to which they were adapted to the needs of a peripheral service in contact with the public.

The results of this experiment were on the whole encouraging and the Commission is looking into the possibility of linking up four external offices.

Statistics

1979 Yielded the following statistics:

File	Unit	Volume	Increase in 1979
ECØ1	Documentation unit	113 000	23 000
CELEX	Document	33 700	5 700
PRC	Procedure	4 900	1 100
ACTU	Document	22 000	13 000
ASMODEE	Document	6 300	6 300

ANNEX 6

STAFF 1979

	A	B	C	D	Total
Statistical Office	10 (1)	4 (-)	-(-)	- (-)	14 (1)
DG IX (Personnel & Administration)					
Functional analysis group (IGAF)	8 (1)	- (-)	1 (-)	- (-)	9 (1)
- Analysis and programming department (SSAP)	18 (4)	43 (6)	1 (-)	- (-)	62 (10)
- Computer operations division (DEI)	14 (2)	32 (2)	55 (3)	3 (-)	104 (7)
- Data processing planning and administration unit (IPA)	4 (1)	2 (1)	3 (-)	- (-)	9 (2)
- CIRCE	7 (-)	7 (-)	14 (-)	1 (-)	29 (-)
DG XIII - Specialist department for data processing and documentation	8 (2)	2 (-)	2 (1)	- (-)	12 (3)
TOTAL	69 (11)	90 (9)	76 (4)	4 (-)	239 (24)

Note: The figures cover both permanent and temporary posts;
the number of temporary posts is shown in brackets.

TRENDS IN THE NUMBER OF EMPLOYEES

IN THE COMMISSION'S DATA-PROCESSING SECTOR

Financial year	A	B	C-D	TOTAL
1975	43	68	60	171
1976	45	70	60	175
1977	57	81	76	214 (*)
1978	64	79	87	230 (*)
1979	69	90	80	239

(*) CIRCE was set up in 1977, which explains the marked increase in the number of employees in 1976 and 1977.

If the CIRCE staff are left out of account we obtain for 1977 a staff of 191.

ANNEX 7

EXPENDITURE ON DATA PROCESSING IN 1979

		in 1 000 EUA	in 1 million Bfrs
Item 2240			
0.	IBM rental (part of the year)	1 555	62.2
1.	ICL rental (part of the year)	2 213	88.5
2.	Software	209	8.4
3.	Network - interactive	595	23.8
	- remote batch terminal	134	5.3
	- telephone lines	328	13.1
	- modems	172	6.9
	- racks/switches/test equipment	14	0.5
	- Comkodak	20	0.8
4.	MA sets	7	0.3
5.	Purchase of information on magnetic tapes	-	-
6.	Coding (equipment and service bureau)	358	14.3
7.	Technical assistance (operation)	2 910	116.4
8.	Token entry	-	-
9.	Supplies (discs, tapes, etc.)	710	28.9
10.	Token entry	-	-
11.	Work of conversion and service bureau (large-scale applications - including computer time)	2 763	110.5
		11 988	479.9
	Less re-use, adjustments etc.	394	15.8
	Item 2240	11 594	464.1

	in 1000 EUA	in 1 million Bfrs.
Item 2242		
1. External service bureau (mainly CIRCE and DG II)	1 980	79.2
2. Decentralized equipment (search by telephone, single accounting centre etc.)	225	9.0
	2 205	88.2
Less adjustments	20	0.8
Item 2242	2 185	87.4
Item 2243		
1. Conversion tasks not yet completed	671	26.8
2. CIRCE - technical assistance	136	5.4
3. Trade negotiations	100	4.0
4. Miscellaneous technical assistance	487	19.5
Item 2243	1 394	55.7
Item 2244		
1. Analysis of documents	593	23.7
Item 2244	593	23.7
TOTAL FOR ARTICLE 224	15 766	630.9

ANNEX 8

ORGANIZATION OF DATA PROCESSING AT THE COMMISSION

Data processing management committee (CDIC)

Technical committee

planning and administration unit

PROJECTED UNITS

Functional analysis

(Statistics [1])

DG XIII (SSID [2])

DG IX (GAF [3])

System design and programming

Specialist department for analysis and programming

CIRCE

Computer management and operation

Data processing division

1) Division for the design and development of software and information management department.

2) Special systems analysis in documentary applications department.

3) Functional analysis group 'administrative and financial management jobs'.

ANNEX 9

CURRENT PROGRAMMING ASSISTANCE CONTRACTS

Project	Firm(s)	Comments
CIRCE: Engineer analyst/programmer	HB-CII	
Conversion of the smaller-scale IBM/ICL applications	Computer Resources Aronworth Correlative Systems ICL	
Multilateral Negotiations	D.E.L.P.I.	
Adjustment of pensions	ICL	
Conversion of KOM 90 Kodak to ICL	ICL	
Management of early salary payments	Cap-Sogeti	
Transport and telephones	Steriabel	
Chemical products (GUD)	Correlative Systems Aronworth	
Development of programme	ICL	Work continued from 1978
Adjustment of E.P.programme Logabar 4600	Logabax	
Typology	Computer Resources	
European Social Fund	Datasolve	
Allocation of interpreters (SAFIR)	Cap-Sogeti	
Updating of large-scale applications: SABINE, foreign trade, CRONOS	ICL	
Modifications to telephone software: management of telephone list	SAIT	
Fissile materials accounting	Correlative Systems	
EAGGF - advance payment	Correlative Systems	Engaged in 1978 All-in price
Financial instruments	Datasolve	

Project	Firm(s)	Comments
PASCAL and OSIRIS maintenance	I.R.E.P. Grenoble	
CRONOS maintenance	Intersoft	
Completion of CRONOS generator	Intersoft	
Perforation	Automation Center	

ANNEX 10

OFFICE COMPUTERS IN OTHER COMMISSION DEPARTMENTS

DG	EQUIPMENT
VI	Gamma 10
IX	CII (SAIT) - telephone
	Logabax 4200 stock replacement
	Matra 430 (CIRCE coding)
XIX	Logabax 4600
	Nixdorf 900 ML
	Logabax 3200 + Bull perforator (2 machines)

Miscellaneous

SOEC	5100 IBM
	BENSON pen-plotter
	TEKTRONIX graphic terminal
II	TEXTRONIX graphic terminal

Some directorates-general make use of external computers in the course of their work on a time-sharing basis:

DG	Firm(s)
I	GATT, Geneva (Multilateral Trade Negotiations)
II	IBM, Diegem (+ VIII, XIX and SOEC)
	Katholieke Univ. Leuven
III	Centre de traitement informatique (C.T.I.) at the Ministry for Economic Affairs (maritime questions)
	IBM, Diegem (textiles)
VI	Centre de traitement informatique (C.T.I.) at the Ministry for Economic Affairs (RICA)

DG	Firm(s)
IX	COMSHARE (personnel planning) CETIS, Ispra (salaries and fissile materials accounting)
XII	General Time Share
XVI	IBM, Diegem
XVII	General Time Share C.S.C. Computer Science Europe
SOEC	Informalux (JULES and foreign trade) GATT Geneva
IX	Honeywell Bull (CIRCE)

ANNEX 11

LIST OF OPERATIONAL APPLICATIONS

Name	No. of Instruction	Frequency	Main languages	Year
1. ADMINISTRATION(*)				
Variable factors	350	4	Cobol	1972
Industrial concentration	4600	6	Fortran, Cobol	1973
P. Finet foundation grants	13000	4	Atlas, Cobol	1978
EAGGF management/guidance	9500	30	Cobol, Sabine	1980
EDF grants	8500	4	Cobol	1979
ADF accounting	12900	12	Cobol	1976
ADF statistics	17600	2	Cobol	1979
Payment of officials, pensioners and local staff	23000	50	Cobol	1968
Model for officials' pay	330	6	Cobol	1972
Cleaners' pay	300	13	Cobol	1973
Payment of Luxembourg local staff	5600	12	Cobol	1974
Translation planning	400	16	Cobol	1966
Calculation of salary scales	150	1	Fortran	1966
Table of notional steps	350	1	Cobol	1972
Overtime	4500	12	Cobol, Atlas	1976
Telephone charges	400	12	Cobol	1970
Luxembourg Economat inventory	300	2	Cobol	1976
Luxembourg shop management	1400	12	Cobol	1968
Subscribers to the library	1200	2	Cobol	1972
Telephone list	3000	4	Cobol	1970
Inventories	12300	13	Cobol	1966

(*) Not including SAPIR applications and EAGGF accounts/guarantee, RICA, general accounts, operating budget accounts and restaurant accounts.

Name	No. of Instruction	Frequency	Main languages	Year
Economat cards	600	1	Cobol	1973
Restaurant cards	200	1	Atlas	1977
Administrative stagiaires	1650	2	Cobol	1977
Scanning of leave forms	4000	200	Cobol	1978
Breakdown of medical expenses	10300	100	Cobol	1976
Sickness insurance statistics	1700	1	Cobol	1978
RENSPERS sickness insurance	250	12	Cobol	1972
Statistics on absences	6000	1	Cobol, Osiris	1978
Mission bookings	1200	12	Cobol	1964
Mission expenses	2200	24	Cobol	1964
PRONOM	7500	14	Cobol, Atlas	1975
Building loans	1500	18	Cobol, Fortran, Atlas	1973
Staff information	20000	200	Cobol, Atlas, Osiris	1976
Leave management	3600	12	Cobol	1968
Job information	5000	14	Atlas, Cobol, Osiris	1973
ERDF fund management	10500	100	Atlas, Cobol	1975
Fissile materials accounting	47000	100	Cobol	1976
ECSC financial accounts	6900	13	Cobol	1977
ECSC borrowings	750	13	Cobol	1977
ECSC accrued interest accounts	3100	13	Cobol	1977
ECSC portfolio situation	2100	13	Cobol	1977
ECSC funds	1300	13	Cobol	1977
Management of ECSC borrowings	1900	3	Cobol	1975
ECSC withdrawals	5900	14	Cobol	1973
Analytical salary accounts	3300	24	Cobol	1970
Research budget accounts	18300	150	Cobol	1978
Sickness insurance accounts	1150	12	Cobol	1976
PPBS accounts, DG X	12000	12	Cobol	1975
Research budget, operating budget management account	2400	2	Cobol	1968
Pupils at the European School	19000	2	Cobol	1977

Name	No. of Instruction	Frequency	Main languages	year
2. DOCUMENTATION				
SAGAP (automatic address and publi-cations management system	39500	250	Cobol	1979
Automatic library catalogue	3600	12	PL1	1978
EURONET address management	4000	12	Grips	1978
CELEX, (CLEX,CJUS)	4000	250	Cobol	1978
CLEX - list	5200	1	Cobol	1979
CLEX - list (RE1D)	900	1	Cobol	1979
CLEX	28000	250	Cobol	1979
CJUS	14000	250	Cobol	1979
ECDOC	23000	250	Cobol	1979
SCRAPBOOK	30000	250	BCPL	1978
Text treatment	1165	75	Assembler, Cobol	1977
Text treatment	2000	150	Basic	1979
DOME (micro-economics documentation)	2500	12	Assembler, PL1	1978
International Patent Institute	2500	1	PL1	1978
EABS (under GRIPS)	5500	12	Grips	1979
EABS (under GOLEM)	850	12	Assembler	1977
AGREP	400	250	Grips	1979
AGRIS (under STAIRS)	850	12	Assembler, PL1	1978
EURODICAUTOM - batch	32000	12	Cobol, PL 1	1978
" - on line	15000	250	Assembler	1978
" - batch	32200	12	Cobol, PL1	1976
" - on line	20000	250	Assembler	1976
ASTUTE	5500	12	Cobol	1976
Word frequency	2600	12	Cobol	1978
SDIM "	8000	12	Cobol	1974
CNRS "	1800	12	Assembler	1977
CRIF "	200	12	PL1	1978

Name	No. of Instruction	Frequency	Main languages	Year
Automatic translation interface				
- CAB	2000	12	Assembler, Cobol	1978
-Agricultural credits	300	12	Cobol	1978
- Office Journal	700	12	Cobol	1978
- Bulletin	800	12	Cobol	1978
- Agris	600	12	Cobol	1978
Project	550	24	Cobol	1977
Pstents	5000	1	PL1	1974
Thesaurus photocomposition	2500	1	PL1	1976
3. STATISTICS				
OSIRIS	60000	0	Pascal	1976
ATLAS	30000	0	Cobol	1978
Miscellaneous utilities	10000	0	Cobol	1978
PASCAL (compiler)	9000	0	Pascal	1976
General foreign trade statistics	33000	64	Cobol	1977
ECSC statistics	7000	128	Cobol, Osiris	1978
Textile alert	10000	96	Cobol, Osiris	1979
Textiles monitoring	8000	4	Cobol	1979
Oil crisis	3000	24	Cobol	1980
Monthly foreign trade statistics	9000	96	Cobol	1977
ACP statistics	6500	35	Cobol	1965
Transport statistics	1200	25	Cobol	1976
Statistics on associate states	1150	1	Osiris	1977
Tariff statistics	6500	0	Cobol	1979
Systems of generalized oreferences	23000	16	Cobol	1979
ECSC questionnaire	5500	13	Cobol, Osiris	1979
Steel investment survey	6000	12	Cobol, Osiris	1979

Name	No. of Instructions	Frequency	Main languages	Year
Industrial survey 75/76	9000	24	Cobol, Osiris	1979
CRONOS bulletins	6500	64	Osiris	1979
Salaries survey 78/79 - monitoring	4500	24	Cobol, Osiris	1980
Agricultural survey 77 - monitoring	4000	24	Cobol	1980
Wine survey 79 - monitoring	4000	24	Cobol	1980
Collective agreements	20000	1	Cobol	1979
Typology of agricultural holdings	20000	1	Cobol	1979/80
Fruit survey	1000	3	Cobol	1979
Agricultural structures survey 1977	10000	3	Cobol	1979
			Osiris	1980
Indices of mean values for	2000	test	Cobol	1979
foreign trade	2000	stage	Basic	1980
ACP - statistics yearbook	5000	being tested	Osiris	1980
Trade negotiations (DG1)	5000	upon request	Osiris	1979/80
Sectorial tables	2000	15	Osiris	1979/80
Managements tasks	2000		Osiris	1979/80
General accounting tools (SOEC follow-up system)	8000	100	Cobol	
Studies and forecasting models	1000	100	Fortran	1979
Input/output tables	2000*		APL (IBM)	1979/80
Structural data bases - national accounts	2000*	en	APL (MITRA)	1979/80
Regional statistics	2000*	test	APL (SIEMENS)	1979/80
BENSON graphics	5000	100	APL (5100)	1979/80

* The indication of the number of APL instructions is only of relative value since the language is so specific.

N.B.: It is not possible to give a frequency for applications written in BASIC and APL (interactive) for the remaining applications.

List of abbreviations and initials used in the annual report of the data-processing departments of the Commission - 1979

ACTU	file containing summary data on documents published by the Secretariat-General of the Commission
AGREP	permanent inventory of research projects in the field of agriculture
AGRIS	agricultural science and technology system
AO	system analysis
ASTUTE	thesaurus compilation system
ATLAS	programming language
CDIC	steering committee on data processing at the Commission
CELEX	documentary file on Community law
AIRCE	information and research centre on documentation of the European Communities
CJUS	law data base (judgments of the Court of Justice)
CMF	fissile materials accounting
COMEXT	foreign trade application
CPU	central processing unit - i.e. the central unit of a computer
CRONOS	chronological series data base

DOME	micro-economics documentation
ECDOC	European Commission documentation
ECO1	general file on internal documentation (part of CIRCE)
EUROABSTRACTS (EABS)	data base on results of research programmes directly or indirectly financed by the Commission
EAGGF	European Agricultural Guidance and Guarantee Fund
ERDF	European Regional Development Fund
EURODICAUTOM	terminòlogical data bank
EURONET	European network
FAM (CMF)	fissile materials accounting
GATT	General Agreement on Tariffs and Trade
COLEM	Grossspeicherorientierte listenorganisierte Ermittlungsmethode (mass-memory list-based enquiry method)
GRIPS	General relation-based information processing system
IAEA	International Atomic Energy Agency (Vienna)
IDMS	Integrated data base management system
IGAF	management and financial applications department
JULES	input/output package
OSIRIS	system for generating tables of statistics

PASCAL	programming language
PRONOM	appointments procedures
RICA	information on agricultural accounting
RJE	remote job entry
SABINE	nomenclatures data base
SAFIR	system for allocating interpreters to meetings
SAGAP	automated address and publications management system
SCRAPBOOK	text processing and message transmission system
SSID	specialized service for documentary data processing (DG XIII)
STATUS	software for interrogating documentary data bases on ICL
SYSTRAN	automatic pre-translation system