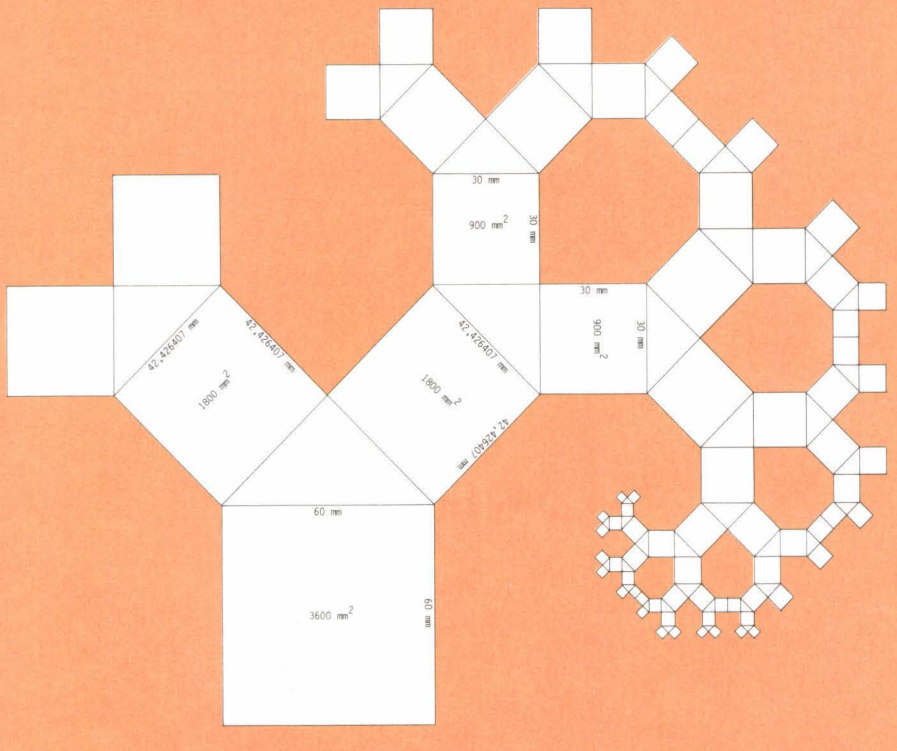
COST PROJECTS

COLLECTED AGREEMENTS
VOLUME 2 1981-82



Council of the European Communities

COST Projects

Collected
Agreements concluded within the framework of European Cooperation
in the field of Scientific and Technical Research

Volume 2
1981-1982

COST SECRETARIAT
GENERAL SECRETARIAT OF THE COUNCIL OF THE EUROPEAN COMMUNITIES

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Foreword

This publication is the second volume of a collection which includes all the agreements concluded within the framework of European Cooperation in the field of Scientific and Technical Research, better known by its abbreviation COST.

There are 19 participant States in this form of cooperation, which was inaugurated in 1969 at the initiative of the Council of the European Communities, namely:

Belgium — Denmark — Federal Republic of Germany — Greece — Spain — France — Ireland — Italy — Yugoslavia — Luxembourg — Netherlands — Norway — Austria — Portugal — Switzerland — Finland — Sweden — Turkey — United Kingdom.

It enjoys special arrangements for cooperation with the Community as such, which, moreover, provides it with secretariat and infrastructure services.

The fields covered by COST cooperation in this volume are as follows:

1. Informatics
2. Telecommunications
3. Transport
4. Oceanography
5. Metallurgy and materials science
6. Environmental protection
7. Meteorology
8. Agriculture
9. Food technology
10. Medical research and public health

The COST agreements are divided into four separate categories of cooperation:

CATEGORY I:
Community R & D programmes, adopted on the basis of the Treaties establishing the Communities, in which non-Community COST States may be involved;

CATEGORY II:
projects initiated within the COST framework and in which the Community as such participates alongside the non-Community COST States;

CATEGORY III:
projects initiated within the COST framework and in which the Community as well as its Member States and the non-Community COST States participate;

CATEGORY IV:
projects initiated within the COST framework and in which COST States, whether or not members of the Community, participate, but not the Community as such.

The COST agreements take very varied legal forms, ranging from international conventions in the classical sense to Memoranda of Understanding, the latter constituting an original instrument evolved within the COST framework itself.

More detailed information on COST cooperation is contained in a booklet published by the General Secretariat of the Council of the European Communities in November 1981.

We hope that this collection will meet the desires frequently expressed by all those interested in COST cooperation.

Stockholm, August 1983

JOHANN MARTIN-LÖF
Chairman, COST Senior Officials

Abbreviations

EC	European Communities
ECSC	European Coal and Steel Community
EEC	European Economic Community
EAEC	European Atomic Energy Community (Euratom)
ACPM	Advisory Committee on Programme Management
COMAC	Steering Committee on Concerted Action
CREST	Scientific and Technical Research Committee
ESA	European Space Agency
IMCO	Inter-Governmental Maritime Consultative Organization
JAF	Working Party on Legal, Administrative and Financial Questions
OECD	Organization for Economic Cooperation and Development
PREST	Scientific and Technical Research Policy

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Community-COST Concertation Agreement on a concerted action project in the field of teleinformatics

(COST Project 11 bis) [1]

[1] OJ L 350, 23.12.1980, p. 46.

Community-COST Concertation Agreement on a concerted action project in the field of teleinformatics

(COST Project 11 bis)

The European Economic Community,

hereinafter referred to as 'the Community',

Finland and Sweden,

hereinafter referred to as the 'participating non-Member States',

Whereas a research project on a European informatics network, carried out pursuant to an Agreement concluded on 23 November 1971 in the framework of European Cooperation in the field of Scientific and Technical Research (COST Project 11), produced very encouraging results;

Whereas a European concerted research project in the abovementioned field will contribute effectively in particular to:

— the study of the specification of the new services which can be offered by the combination of computation and data communication with a view to maximizing their potential for the user;

— the study of the influence of the new technical developments from the point of view of the user of distributed services and networks;

— the promotion of international standardization in developing and testing common solutions;

Whereas by its Decision of 11 September 1979 the Council of the European Communities adopted a four-year programme for the development of data processing in the Community which includes support for the concertation of the research activities of the Member States in the field of network technology;

Whereas by its Decision of 13 March 1980 the Council of the European Communities adopted a research programme which includes activities in the field of teleinformatics;

Whereas the Member States of the Community, the participating non-Member States, hereinafter referred to as 'the States', and the Community intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex A and are prepared to integrate such research into a process of concertation which they consider will be of mutual benefit;

Whereas the implementation of the research covered by the concerted action project will require a financial contribution of some 15 million European units of account from the States and the Community,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the participating non-Member States, hereinafter referred to as 'the Contracting Parties', shall participate for a period extending until 11 September 1983 in a concerted action project in the field of teleinformatics.

The main purpose of the project is to create an environment and a structure for promoting concertation between the Community concerted action programme and the corresponding programmes of the participating non-Member States.

The project is described in greater detail in Annex A.

The States remain entirely responsible for the research executed by their national institutions or bodies except research under contract with the Commission of the European Communities, hereinafter referred to as 'the Commission'.

Article 2

The concertation between the Contracting Parties shall be effected through a Community-COST Concertation Committee, hereinafter referred to as 'the Committee'. The Committee shall draw up its rules of procedure; its Secretariat will be provided by the Commission. The terms of reference and the composition of this Committee are defined in Annex B.

Article 3

In order to ensure optimum efficiency in the execution of this concerted action project, a technical secretariat headed by a project leader and composed of three to five technical experts shall be set up. The project leader shall be appointed by the Commission in agreement with the delegates of the participating non-Member States on the Committee.

Article 4

The maximum financial contribution by the Contracting Parties to the coordination costs shall be:

— 1 200 000 European units of account from the Community;

— 38 888 European units of account from each participating non-Member State for the period referred to in the first paragraph of Article 1. In addition, each participating non-Member State shall pay an amount calculated by applying to a basic amount of 850 000 European units of account, representing a part of the Community contribution, the ratio between the gross domestic product of each participating non-Member State for 1976 and the gross domestic product of the Community for 1976.

The European unit of account is as defined by the Financial Regulation in force applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

The rules governing the financing of the Agreement are set out in Annex C.

Article 5

1. Through the Committee, the States and the Community shall exchange regularly all useful information concerning the execution of the research covered by the concerted action project. They shall also endeavour to provide information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if the State which provides it so requests.

2. In agreement with the Committee the Commission shall prepare yearly progress reports on the basis of the information supplied and shall forward them to the States.

3. At the end of the concertation period, the Commission shall, in agreement with the Committee, forward to the States a general report on the execution and results of the project. This report shall be published by the Commission six months after it has been forwarded, unless a State objects. In that case the report shall be confidential and shall be forwarded, on request and with the agreement of the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the concerted action project.

Article 6

1. Each of the Contracting Parties shall, after signing this Agreement, notify the Secretary-General of the Council of the European Communities as soon as possible of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. For the Contracting Parties which have transmitted the notification provided for in paragraph 1, this Agreement shall enter into force on the first day of the month following that in which the Community and at least one of the participating non-Member States transmitted these notifications.

For those Contracting Parties which transmit the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was transmitted.

Contracting Parties which have not yet transmitted this notification at the time of entry into force of this Agreement shall be able to take part in the work of the Committee without voting rights for a period of six months following the entry into force of this Agreement.

3. For a period of six months following its entry into force, the Agreement shall be open for accession by the other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971. The instruments of accession shall be deposited with the General Secretariat of the Council of the European Communities. A State which accedes to this Agreement shall become a Contracting Party within the meaning of Article 1 on the date of deposit of the instrument of accession.

4. The Secretary-General of the Council of the European Communities shall notify each of the Contracting Parties of the deposit of the notifications provided for in paragraph 1, of the date of entry into force of this Agreement and of the deposit of the instruments of accession provided for in paragraph 3.

Article 7

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Udfærdiget i Bruxelles, den toogtyvende januar nitten hundrede og enogfirs.

Geschehen zu Brüssel am zweiundzwanzigsten Januar neunzehnhunderteinundachtzig.

Έγινε στίς Βρυξέλλες, στίς εἴκοσι δύο Ἰανουαρίου χίλια ἐννεακόσια ὀγδόντα ἕνα.

Done at Brussels on the twenty-second day of January in the year one thousand nine hundred and eighty-one.

Fait à Bruxelles, le vingt-deux janvier mil neuf cent quatre-vingt-un.

Fatto a Bruxelles, addì ventidue gennaio millenovecentoottantuno.

Gedaan te Brussel, de tweeëntwintigste januari negentienhonderdeenentachtig.

ANNEX A

Purpose of the project

The main purpose of the project is to create an environment and a structure in order:

— to promote collaboration, the exchange of results and the pooling of resources between research teams working in the teleinformatics field;

— to facilitate the exchange of ideas, the identification of problems and the definition of common strategies where this seems desirable and to make recommendations to the relevant authorities in participating countries;

— to promote standardization in developing and testing solutions to problems of a transnational character in contact with the official standardization bodies;

— to transfer the results of the research activities to European industry, users, standardization bodies and other interested parties;

— to assist industry or other outside organizations in testing some of their ideas.

In order to assist in achieving these objectives, the following actions in particular should be pursued:

— promoting pilot projects;

— promoting the development of tools which could also serve as models for collaborative work in other areas.

The project shall finance activities necessary to reach its objectives, such as:

— exchange of researchers;

— sponsoring work of common interest carried out under contractual arrangements with industry, research institutes, consultants, etc.

The project should whenever possible use Euronet and other data transmission networks provided by the authorized telecommunications agencies. This will facilitate the linking up of a very large number of teams interested in these developments.

A description of a few activities which can be undertaken immediately is given below.

1. Computer message system

The purpose of this activity will be in part to assess the impact of distributed processing on computer message systems (that is, mailbox and teleconferencing systems), and in part to act as a tool to support the general work of the project.

It will be based on results which are expected to be available by the end of 1980, namely the specification of separate centralized systems that will already have been implemented and used for some months. A specification should be developed for a decentralized system, amongst other objectives, to reduce the extent to which messages need to be transmitted between centres. The user, however, should be able to operate the system in the same way whether his correspondents are local or remote.

This improved specification should then be subjected to practical tests, and the Committee should determine how the work is to continue.

2. Testing of protocols

The purpose of this activity is to test protocols on such matters as transport stations, virtual terminals, etc., that have been implemented by project participants. It will be based on results which are expected to be available by the end of 1980 on the testing of implementations of X 25 interfaces. The Committee should determine, at the start of the project, what protocols the participants have implemented, or are intending to implement, and what are their requirements for testing them.

3. Interconnection of local networks

The purpose of this project will be, within the framework of the ISO architectural model for open systems, and taking account of CCITT specifications, to study the design of local networks and especially the means for interconnecting them via the new public data networks.

The work will start with a survey of the methods that have been implemented, or can be envisaged, to connect local networks that exist already or are otherwise well defined. This survey should be completed within six months, and the work could if desired be entrusted to a specialized firm.

Based on the results of this survey, protocols will be proposed for future local networks which simplify and harmonize their architecture, and improve the level of service to users.

A classified list of possible further topics is given below.

This list of topics will be revised from time to time as the project is progressing, taking into account the technological evolution and the capacity of the research teams involved.

1. Distributed applications; distributed computing

1.1. Distributed data bases;

1.2. High level protocols and HLP based on X 25:

1.2.1. Network job control; network operating system:

- 1.2.1.1. File handling services,
- 1.2.1.2. Terminal handling services;

1.2.2. Theory of protocols.

2. User-level applications

2.1. Applications in everyday life;

2.2. Office-orientated applications:

2.2.1. Computer message services; (distributed) mailbox; (distributed) teleconferencing;

2.2.2. Text processing or editing.

3. Popularization

3.1. User-friendly interfaces;

3.2. Simple end-to-end protocol;

3.3. Protocols for easy inter-network connections; local networks;

3.4. Directory and information services.

4. Technical aspects

4.1. Universal X 25 interface;

4.2. Security systems for data in transit and in data bases;

4.3. Add-on services, e.g., message store-and-forward, message broadcast, virtual terminal;

4.4. Unconventional interfaces;

4.5. Use of microcomputers in interfacing and networking;

4.6. Transborder traffic flow, third party traffic switching;

4.7. Network implementation language; design of networks.

5. Generic aspects

5.1. Simulation and modelling for reliability and availability analysis;

5.2. Testing of services; protocol monitoring and measurement;

5.3. Evaluation and dissemination of project experience and results.

ANNEX B

Terms of reference and composition of the Community-COST Concertation Committee on teleinformatics

1. The Committee shall:

1.1. Contribute to the optimum execution of the concerted action project giving its opinion on all its aspects, including in particular:

- promoting and coordinating activities at national level within the concerted actions;
- defining subjects of particular importance or of common interest;
- allocating financial support from the coordination fund;
- selecting contractors for specific tasks;
- appointing the technical secretariat and determining its location;
- giving guidance to the project leader;

1.2. Evaluate the results of the project and draw conclusions as to their application;

1.3. Be responsible for the exchange of information referred to in Article 5(1) of the Agreement.

2. The Committee's reports and opinions shall be forwarded to the States.

3. The Committee shall be composed of two delegates from the Commission representing the Community programmes, one delegate from each participating non-Member State, one delegate from each Member State representing its national programme, and the project leader. Each delegate may be accompanied by experts.

The Committee may invite representatives of users, of CEPT and of European bodies supporting standardization activities, to give their views.

ANNEX C

Financing rules

Article 1

These provisions lay down the financing rules referred to in Article 4 of the Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to each of the participating non-Member States a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in European units of account and in the currency of the State concerned, the value of the European unit of account being defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

Each participating non-Member State shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the participating non-Member State concerned at a rate equal to the highest discount rate obtaining in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay.

Article 3

The funds paid by participating non-Member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of revenue of the budget of the Commission.

Article 4

The provisional schedule for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation in force applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the participating non-Member States for information.

Annex

PROVISIONAL SCHEDULE FOR THE CONCERTED ACTION PROJECT:

Teleinformatics (COST Project 11 bis)

Budget Item 3702: Implementation of Community projects for the development of data processing

in EUA

	1980		1981		1982		1983		Total	
	AC	AP	AC	AP	AC	AP	AC	AP	AC	AP
I. Initial estimate of overall requirements										
— Administrative operating expenditure and contracts	200 000	200 000	400 000	400 000	400 000	400 000	200 000	200 000	1 200 000	1 200 000
TOTAL (to be covered by Item 3702)	200 000	200 000	400 000	400 000	400 000	400 000	200 000	200 000	1 200 000	1 200 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of participating non-Member States										
— Administrative operating expenditure and contracts	200 000	200 000	400 000	400 000	400 000	400 000	200 000	200 000	1 200 000	1 200 000
— Supplementary contracts	10 000	10 000	50 000	50 000	50 000	50 000	30 000	30 000	140 000	140 000
NEW TOTAL	210 000	210 000	450 000	450 000	450 000	450 000	230 000	230 000	1 340 000	1 340 000
III. Difference between I and II to be covered by contributions from participating non-Member States	10 000	10 000	50 000	50 000	50 000	50 000	30 000	30 000	140 000	140 000

AC = Account credited.
AP = Account paid.

Community-COST Concertation Agreement on a concerted action project in the field of teleinformatics (COST 11 bis)

Decision of Community programmes: 11.9.1979

Date of entry into force: 1.2.1981

Duration: 11.9.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	22.1.1981	1.2.1981
Spain	23.7.1981[1]	23.7.1981
Yugoslavia	6.7.1981[1]	6.7.1981
Norway	30.7.1981[1]	30.7.1981
Finland	22.1.1981	30.4.1981
Sweden	22.1.1981	1.2.1981

[1] Deposit of the instrument of accession.

Community-COST Concertation Agreement on a concerted action project on the effects of thermal processing and distribution on the quality and nutritive value of food

(COST Project 91) [1]

[1] OJ L 350, 23.12.1980, p. 55.

Community-COST Concertation Agreement on a concerted action project on the effects of thermal processing and distribution on the quality and nutritive value of food

(COST Project 91)

The European Economic Community,

hereinafter referred to as 'the Community',

Sweden and Switzerland,

hereinafter referred to as the 'participating non-Member States',

Whereas a European concerted research project in the field of food technology is likely to contribute effectively to a more economic use of natural resources;

Whereas a programme of research in the field of food technology has been proposed by the Swedish delegation within the framework of European Cooperation in the field of Scientific and Technical Research (COST);

Whereas by its Decision of 22 October 1979 the Council of the European Communities adopted a Community concerted action project on the effects of thermal processing and distribution on the quality and nutritive value of food;

Whereas the Member States of the Community and the participating non-Member States, hereinafter referred to as 'the States', intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex A and are prepared to integrate such research into a process of concertation which they consider will be of mutual benefit;

Whereas the implementation of the research covered by the concerted action project will require a financial contribution of some 9 million European units of account from the States,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the participating non-Member States, hereinafter referred to as 'the Contracting Parties', shall participate for a period extending until 26 October 1982 in a concerted action project on the effects of thermal processing and distribution on the quality and nutritive value of food.

This project shall consist in concertation between the Community concerted action programme and the corresponding programmes of the participating non-Member States. The programmes covered by this Agreement are listed in Annex A.

The States remain entirely responsible for the research executed by their national institutions or bodies.

Article 2

The concertation between the Contracting Parties shall be effected through a Community-COST Concertation Committee, hereinafter referred to as 'the Committee'.

The Committee shall draw up its rules of procedure. Its Secretariat will be provided by the Commission of the European Communities, hereinafter referred to as 'the Commission'.

The terms of reference and the composition of this Committee are defined in Annex B.

Article 3

In order to ensure optimum efficiency in the execution of this concerted action project, a project leader shall be appointed by the Commission in agreement with the delegates of the participating non-Member States on the Committee.

Article 4

The maximum financial contributions by the contracting parties to the coordination costs shall be:

— 287 000 European units of account from the Community for a three-year period beginning on 27 October 1979,

— 24 000 European units of account from each participating non-Member State for the period referred to in the first paragraph of Article 1.

The European unit of account is as defined by the Financial Regulation in force applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

The rules governing the financing of the Agreement are set out in Annex C.

Article 5

1. Through the Committee, the States shall exchange regularly all useful information concerning the execution of the research covered by the concerted action project. They shall also endeavour to provide information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if the State which provides it so requests.

2. In agreement with the Committee the Commission shall prepare yearly progress reports on the basis of the information supplied and shall forward them to the States.

3. At the end of the concertation period, the Commission shall, in agreement with the Committee, forward to the States a general report on the execution and results of the project. This report shall be published by the Commission six months after it has been forwarded, unless a State objects. In that case the report shall be confidential and shall be forwarded, on request and with the agreement of the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the concerted action project.

Article 6

1. Each of the Contracting Parties shall, after signing this Agreement, notify the Secretary-General of the Council of the European Communities as soon as possible of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. For the Contracting Parties which have transmitted the notification provided for in paragraph 1, this Agreement shall enter into force on the first day of the month following that in which the Community and at least one of the participating non-Member States transmitted these notifications.

For those Contracting Parties which transmit the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was transmitted.

Contracting Parties which have not yet transmitted this notification at the time of entry into force of this Agreement shall be able to take part in the work of the Committee without voting rights for a period of six months following the entry into force of this Agreement.

3. For a period of six months following its entry into force, this Agreement shall be open for accession by the other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971. The instruments of accession shall be deposited with the General Secretariat of the Council of the European Communities. A State which accedes to this Agreement

shall become a Contracting Party within the meaning of Article 1 on the date of deposit of the instrument of accession.

4. The Secretary-General of the Council of the European Communities shall notify each of the Contracting Parties of the deposit of the notifications provided for in paragraph 1, of the date of entry into force of this Agreement and of the deposit of the instruments of accession provided for in paragraph 3.

Article 7

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Udfærdiget i Bruxelles, den toogtyvende januar nitten hundrede og enogfirs.

Geschehen zu Brüssel am zweiundzwanzigsten Januar neunzehnhunderteinundachtzig.

Ἔγινε στίς Βρυξέλλες, στίς εἴκοσι δύο Ἰανουαρίου χίλια ἐννεακόσια ὀγδόντα ἕνα.

Done at Brussels on the twenty-second day of January in the year one thousand nine hundred and eighty-one.

Fait à Bruxelles, le vingt-deux janvier mil neuf cent quatre-vingt-un.

Fatto a Bruxelles, addì ventidue gennaio millenovecentoottantuno.

Gedaan te Brussel, de tweeëntwintigste januari negentienhonderdeenentachtig.

ANNEX A

Programmes covered by the Agreement

1. Milk products:

1.1. Refrigeration;

1.2. Coagulation of milk proteins by heat treatment;

1.3. Analytical methodology including predictive tests.

2. Fruit and vegetables:

2.1. Effects of heat treatment.

3. Cereals:

3.1. Non-traditional heat treatment;

3.2. Effects of heat treatment on the biopolymers of cereals, especially with respect to lipid, starch and protein inter-reaction;

3.3. Effects of freezing and thawing on the quality of cereal-based foods.

4. Fish:

4.1. Heat treatment in relation to unused or underused species and utilization of waste material;

4.2. Heat treatment and microbiological safety.

5. Meat:

5.1. Curing ingredients and their interaction in pasteurized and canned products;

5.2. Chilling and freezing of meat;

5.3. Heat-treatment processes and interactions with vegetable matter;

5.4. Thawing of meat.

6. Nutrition:

6.1. Heat-treatment processes and protein quality;

6.2. Heat-treatment and polyunsaturated fat;

6.3. Nutritional consequences of the cooking of food.

ANNEX B

Terms of reference and composition of the Community-COST Concertation Committee on the effects of thermal processing and distribution on the quality and nutritive value of food

1. The Committee shall:

1.1. Contribute to the optimum execution of the project by giving its opinion on all aspects of its progress;

1.2. Evaluate the results of the project and draw conclusions regarding their application;

1.3. Be responsible for the exchange of information referred to in Article 5(1) of the Agreement;

1.4. Suggest guidelines to the project leader;

1.5. Have the right to set up a subcommittee in respect of each of the topics covered, as given in Annex A, to ensure that the project is properly implemented.

2. The Committee's reports and opinions shall be forwarded to the States.

3. The Committee shall be composed of one delegate from the Commission, as coordinator of the Community concerted action project, one delegate from each participating non-Member State, one delegate from each Member State representing its national programme, and the project leader. Each delegate may be accompanied by experts.

ANNEX C

Financing rules

Article 1

These provisions lay down the financing rules referred to in Article 4 of the Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to each of the participating non-Member States a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in European units of account and in the currency of the State concerned, the value of the European unit of account being defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

Each participating non-Member State shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the participating non-Member State concerned at a rate equal to the highest discount rate obtaining in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay.

Article 3

The funds paid by participating non-Member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of revenue of the budget of the Commission.

Article 4

The provisional schedule for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation in force applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the participating non-Member States for information.

Annex

MULTIANNUAL SCHEDULE FOR THE CONCERTED ACTION PROJECT:

Effects of thermal processing and distribution on the quality and nutritive value of food (COST project 91)

Budget Item 3371: Implementation of concerted action projects — *in EUA*

	1980		1981		1982		TOTAL	
	AC	AP	AC	AP	AC	AP	AC	AP
I. Initial estimate of overall requirements (figures appearing in the schedule of commitments and payments and in the table of equivalence given in Annex II to the Commission budget)								
— Staff	25 000	25 000						
— Administrative operating expenditure	39 000	39 000	96 000	96 000	96 000	96 000	287 000	287 000
— Contracts	31 000	31 000						
TOTAL (to be covered by appropriations entered in Item 3371)	95 000	95 000	96 000	96 000	96 000	96 000	287 000	287 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of participating non-Member States								
— Staff	25 000	25 000						
— Administrative operating expenditure	39 000	39 000	96 000 +	96 000 +	96 000 +	96 000 +	287 000 +	287 000 +
— Contracts	31 000 + 2×8 000	31 000 + 2×8 000	2×8 000	2×8 000	2×8 000	2×8 000	2×24 000	2×24 000
NEW TOTAL	95 000 + 2×8 000	95 000 + 2×8 000	96 000 + 2×8 000	96 000 + 2×8 000	96 000 + 2×8 000	96 000 + 2×8 000	287 000 + 2×24 000	287 000 + 2×24 000
III. Difference between I and II to be covered by contributions from participating non-Member States	2×8 000	2×8 000	2×8 000	2×8 000	2×8 000	2×8 000	2×24 000	2×24 000

AC = Account credited.
AP = Account paid.

Community-COST Concertation Agreement on a concerted action project on the effects of thermal processing and distribution on the quality and nutritive value of food (COST 91)

Decision of Community programmes: 22.10.1979

Date of entry into force: 1.2.1981

Duration: 26.10.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	22.1.1981	1.2.1981
Spain	23.7.1981[1]	23.7.1981
Yugoslavia	25.7.1981[1]	22.4.1982
Switzerland	22.1.1981	[2]
Finland	19.5.1981[1]	19.5.1981
Sweden	22.1.1981	1.2.1981

[1] Deposit of the instrument of accession.
[2] Switzerland has not ratified this Agreement.

Agreement between the European Economic Community and the Swiss Confederation extending the Agreement on a concerted action project in the field of registration of congenital abnormalities

(Medical research I) [1]

[1] OJ L 113, 25.4.1981, p. 45.

Agreement between the European Economic Community and the Swiss Confederation extending the Agreement on a concerted action project in the field of registration of congenital abnormalities

(Medical research I)

The European Economic Community,

of the one part, and

The Swiss Confederation,

of the other part,

Considering that, by its Decision of 13 February 1978, the Council of the European Communities adopted a Community concerted action project in the field of registration of congenital abnormalities (medical and public health research);

Considering that an Agreement between the European Economic Community and the Hellenic Republic on the abovementioned concerted action project was signed on 14 December 1979;

Considering that, on 1 August 1980, the Swiss Confederation acceded to that Agreement in accordance with Article 6(3) thereof;

Considering that, by its Decision of 20 January 1981, the Council of the European Communities extended until 31 December 1981 the Community concerted action project in the field of registration of congenital abnormalities (medical and public health research);

Considering that, bearing in mind the present state of the work provided for in the abovementioned Agreement, the extension of the duration of the latter by one year would enable the greatest benefit to be derived from the effort made;

Considering that this extension will not give rise to any increase in financial commitments either of the Community or of the Swiss Confederation;

Considering that the Agreement in question should therefore be extended until 31 December 1981,

HAVE AGREED AS FOLLOWS:

Article 1

The Agreement between the European Economic Community and the Swiss Confederation on a concerted action project in the field of registration of congenital abnormalities (medical and public health research) shall be extended until 31 December 1981.

Article 2

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Udfærdiget i Bruxelles, den trettende maj nitten hundrede og enogfirs.

Geschehen zu Brüssel am dreizehnten Mai neunzehnhunderteinundachtzig.

Έγινε στίς Βρυξέλλες, στίς δεκατρεῖς Μαΐου χιλια ἐννεακόσια 'ογδόντα ἕνα.

Done at Brussels on the thirteenth day of May in the year one thousand nine hundred and eighty-one.

Fait à Bruxelles, le treize mai mil neuf cent quatre-vingt-un.

Fatto a Bruxelles, addì tredici maggio millenovecentoottantuno.

Gedaan te Brussel, de dertiende mei negentienhonderdeenentachtig.

Council Decision[1] of 13 February 1978 adopting a concerted project of the European Economic Community in the field of registration of congenital abnormalities

(medical and public health research)

(78/167/EEC)

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, [2]

Having regard to the opinion of the Economic and Social Committee, [3]

Whereas, by virtue of Article 2 of the Treaty establishing the European Economic Community, the Community has been assigned the task of promoting throughout the Community a harmonious development of economic activities, a continuous and balanced expansion and an accelerated raising of the standards of living;

Whereas, in its resolution of 14 January 1974 on an initial outline programme of the European Communities in the field of science and technology, [4] the Council stressed that an appropriate approach should be adopted towards the whole range of available ways and means, including concerted projects and that whenever it proves desirable that third countries, particularly European ones, should be associated in these projects, steps should be taken to make this possible;

Whereas, in its resolution of 14 January 1974 relating in particular to the coordination of national policies in the field of science and technology, [5] the Council entrusted the Community institutions with the task of gradually ensuring such coordination, aided by the Scientific and Technical Research Committee (CREST);

Whereas a concerted Community research action in the field of registration of congenital abnormalities is likely to contribute effectively to the achievement of the abovementioned aims;

Whereas the Member States intend, as part of the rules and procedures applicable to their national programmes, to carry out the research described in Annex I, and are prepared to integrate such research into a process of coordination at Community level over a period of three years;

Whereas the execution of such research as described in Annex I will require a financial contribution of about 850 000 units of account from the Member States;

Whereas the Community is empowered to conclude Agreements with third countries in the fields covered by this Decision; whereas it may prove advisable to extend the coordination established by this Decision to third countries participating in European Cooperation in the field of Scientific and Technical Research (COST); whereas, on the one hand, procedural conditions should be determined so as to lead to a rapid conclusion of these Agreements and, on the other, negotiations should be opened with the countries referred to as soon as this Decision is adopted;

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[1] OJ L 52, 23. 2. 1978, p. 20.
[2] OJ C 299, 12.12.1977, p. 47.
[3] Opinion on 23 and 24 November 1977 (not yet published in the Official Journal).
[4] OJ C 7, 29.1.1974, p. 6.
[5] OJ C 7, 29.1.1974, p. 2.

Whereas the Treaty has not provided the specific powers for this purpose;

Whereas the Scientific and Technical Research Committee (CREST) has given its opinion on the Commission proposal,

HAS DECIDED AS FOLLOWS:

Article 1

The Community shall implement for a period of three years a concerted project in the field of registration of congenital abnormalities, hereinafter referred to as 'the project'.

The project shall consist in coordination at Community level of the research described in Annex I, which forms part of the research programmes of the Member States.

Article 2

The Commission shall be responsible for such coordination.

Article 3

The maximum financial contribution by the Community to such a project will be 330 000 units of account, the unit of account being defined by the relevant Financial Regulations.

Article 4

To facilitate the execution of the project, a Concerted Action Committee on the Registration of Congenital Abnormalities, hereinafter referred to as 'the Committee' shall be established.

A project leader shall be appointed by the Commission in agreement with the Committee. He shall, in particular, assist the Commission in its coordinating action.

The terms of reference and the composition of this Committee are defined in Annex II.

The Committee shall draw up its rules of procedure. Its Secretariat will be provided by the Commission.

Article 5

In accordance with a procedure to be adopted by the Commission in agreement with the Committee, the Member States participating in the project shall exchange regularly all useful information concerning the execution of the research covered by the project and forward to the Commission all information that may be useful for coordination purposes. They shall also endeavour to provide the Commission with information on similar research planned or carried out by bodies for which they are not responsible. This information shall be treated as confidential if so requested by the Member State which provides it.

The Commission shall prepare yearly progress reports on the basis of the information supplied and shall forward them to the Member States and to the European Parliament.

At the end of the coordination period, the Commission shall, in agreement with the Committee, forward to the Member States and to the European Parliament a general report on the execution and results of the coordination action. The Commission shall publish this report six months after it has been forwarded to the Member States unless a Member State objects. In this case the report shall be distributed, at their request, solely to institutions and undertakings whose research and production activities justify access to the results of the research carried out under the project. The Commission may make provision that the report remains confidential and is not disclosed to third parties.

Article 6

1. In accordance with the provisions laid down in Article 228 of the Treaty establishing the EEC, the Community may conclude agreements with other States involved in European Cooperation in the field of Scientific and Technical Research (COST) with a view to extending the coordination which is the subject of this Decision to research undertaken in these States.

2. The Commission is hereby authorized to open negotiations for the conclusion of agreements of the type referred to in the preceding paragraph.

Article 7

This Decision shall come into force on 1 January 1978.

Done at Brussels, 13 February 1978.

For the Council

The President

P. DALSAGER

ANNEX I

Research programme relating to the registration of congenital abnormalities

(Concerted project)

The research will be carried out with the purpose of acquiring scientific and technical knowledge in this field, selected for its importance at Community level.

The research is expected to cover the following topics:

1. Registration of congenital malformations as well as of inherited biochemical and chromosome abnormalities in selected regions of the Community. The registration will progressively extend to abnormalities of the nervous system (anencephaly, spina bifida, etc.), Down's syndrome, gross abnormalities of the limbs, multiple abnormalities, phenylketonuria and cœliac disease.
2. Registration of twins and multiple pregnancies in selected regions of the Community.
3. Relevant methodological studies in order to obtain an optimal coordination of both existing national registers and registration procedures.

The coordination will include the following regional registers of the Member States:

Belgium:	Brugge and Hainaut
Denmark:	Odense
France:	Paris
Germany:	Hessen
Ireland:	Dublin and Galway
Italy:	Florence and Rome
Luxembourg:	Luxembourg
Netherlands:	Leidschendam
United Kingdom:	Belfast, Glasgow and Liverpool

These countries will contribute research under the three topics mentioned above.

ANNEX II

Terms of reference and composition of the concerted action committee on the registration of congenital abnormalities

1. The Committee shall:

1.1. Contribute to the optimum execution of the programme by giving its opinion on all of its aspects;

1.2. Evaluate the results and draw conclusions as regards their application;

1.3. Be responsible for the exchange of information referred to in the first subparagraph of Article 5;

1.4. Keep abreast of national research being done in the fields covered by the concerted project, and more especially of scientific and technical developments likely to affect the execution of the project;

1.5. Suggest guidelines to the project leader.

2. The Committee's reports and opinions shall be forwarded to the Commission and to the Member States participating in the project. The Commission shall forward these opinions to the CREST.

3. The Committee shall be composed of persons responsible for coordinating the national contributions to the programme, and the project leader. Each member may be accompanied by experts.

Council Decision[1] of 20 January 1981 amending Decision 78/167/EEC adopting a concerted project of the European Economic Community in the field of registration of congenital abnormalities

(medical and public health research)

(81/21/EEC)

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,[2]

Whereas by Decision 78/167/EEC,[3] the Council adopted a concerted project of the European Economic Community in the field of registration of congenital abnormalities (medical and public health research);

Whereas, in view of the current stage reached in the work provided for under the concerted project, an extension of the said project by one year would enable the best advantage to be obtained from the national efforts being made; whereas Decision 78/167/EEC should therefore be amended,

HAS DECIDED AS FOLLOWS:

Sole Article

Decision 78/167/EEC shall be amended as follows:

1. In the first paragraph of Article 1 the term 'a period of three years' shall be replaced by 'a period of four years';
2. Annex I shall be replaced by the Annex to this Decision.

Done at Brussels, 20 January 1981.

For the Council

The President

Ch. A. van der KLAAUW

[1] OJ L 43, 14.2.1981, p. 12.
[2] OJ C 346, 31.12.1980, p. 95.
[3] OJ L 52, 23.2.1978, p. 20.

ANNEX

'Annex I

Research programme relating to the registration of congenital abnormalities

(concerted project)

The research will be carried out with the purpose of acquiring scientific and technical knowledge in this field, selected for its importance at Community level.

The research is expected to cover the following topics:

1. Registration of congenital malformations as well as of inherited biochemical and chromosome abnormalities in selected regions of the Community.
2. Registration of twins and multiple pregnancies in selected regions of the Community.
3. Relevant methodological studies in order to obtain an optimal coordination of both existing national registers and registration procedures.

The coordination will include the following regional registers of the Member States:

Belgium:	Brugge and Hainaut
Denmark:	Odense
France:	Paris and Morlaix
Germany:	West Berlin and Hessen
Greece:	Evia
Ireland:	Dublin and Galway
Italy:	Tuscany, Rome and Emilia-Romagna
Luxembourg:	Luxembourg
Netherlands:	Groningen
United Kingdom:	Belfast, Glasgow and Liverpool

These countries will contribute research under the three topics mentioned above.'

Agreement between the European Economic Community and the Swiss Confederation extending the Agreement on a concerted action project in the field of registration of congenital abnormalities (Medical research I)

Decision of Community programmes: 9.4.1981

Date of entry into force: 1.6.1981

Duration: 31.12.1981

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	13.5.1981	1.6.1981
Switzerland	13.5.1981	1.6.1981

Memorandum of Understanding for the implementation of a European research project on the technical and economic evaluation of dual-mode trolleybus programmes

(COST Project 303)[1]

[1] Not published in the Official Journal.

Memorandum of Understanding for the implementation of a European research project on the technical and economic evaluation of dual-mode trolleybus programmes

(COST Project 303)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on the technical and economic evaluation of dual-mode trolleybus programmes have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the technical and economic evaluation of dual-mode trolleybus programmes (hereinafter referred to as 'the project').

2. The main objective of the project is to define the elements of comparison necessary for decision-making on the implementation of dual-mode trolleybus systems and possibly for starting supplementary research.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the project is estimated at approximately 600 000 European units of account at 1980 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

The Signatories intend to take part in the project in one or several of the following ways:

(a) By carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) By concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) By contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the project to be achieved;

(d) By making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) By arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least three Signatories. It may be extended by arrangement between the Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends for any reason whatsoever to terminate its participation in the project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below three, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.[1]

[1] The term 'European Communities' covers participation, as appropriate in the particular case, by any one of the three Communities, without prejudging, during the preparatory phase of the COST project, the decision on which of the three Communities should participate.

The Governments referred to in the first subparagraph and the European Communities may take part in the project on a provisional basis during the abovementioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the Governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Udfærdiget i Bruxelles, den otteogtyvende september nitten hundrede og enogfirs.

Geschehen zu Brüssel am achtundzwanzigsten September neunzehnhunderteinundachtzig.

Done at Brussels on the twenty-eighth day of September in the year one thousand nine hundred and eighty-one.

Fait à Bruxelles, le vingt-huit septembre mil neuf cent quatre-vingt-un.

Fatto a Bruxelles, addì ventotto settembre millenovecentoottantuno.

Gedaan te Brussel, de achtentwintigste september negentienhonderdeenentachtig.

ANNEX I

Coordination of the project

CHAPTER I

1. A Management Committee (hereinafter referred to as the 'Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4(1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to this Memorandum of Understanding, a representative of the Commission of the European Communities may participate in the work of the Committee as an observer.

2. The Committee will be responsible for coordinating the project and in particular for making the necessary arrangements for:

(a) The choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the project framework will be referred for an opinion to the COST Technical Committee on Transport;

(b) Advising on the direction which work should take;

(c) Drawing up detailed plans and defining methods for the different phases of execution of the project;

(d) Coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;

(e) Keeping abreast of the research being done in the territory of the Signatories and in other countries;

(f) Exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;

(g) Drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;

(h) Dealing with any problem that may arise out of the execution of the project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2(f) and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the project.

Such licenses will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results would not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the observation of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the project, any rights of use which it has granted or is obliged to grant to or has obtained from other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

Technical and economic evaluation of dual-mode trolleybus programmes

I

GENERAL CONSIDERATIONS

For some time now, first environmental constraints followed by the need to diversify energy sources have stimulated renewed interest in trolleybuses.

Research undertaken in several countries (Germany, Belgium, Finland, France and Italy) has caused efforts to be concentrated on a type of trolleybus which is capable of covering sections of its route under its own power. This solution would overcome two major drawbacks of the trolleybus:

— the fixed nature of the route: independence of an external power source would mean that trolleybuses could be diverted away from incidents on the route (road works, accidents, etc.) with a flexibility comparable to that of motor buses;

— the presence of a system of overhead lines at certain critical points (crossroads, protected sites, etc.).

There are two means of rendering the vehicle independent of an external power source, namely an auxiliary thermic engine or a rechargeable reserve energy source (mainly batteries). It should be possible to choose between these techniques on the basis of objective comparative data.

Research is continuing on certain aspects connected with independence of an external power source (type of batteries, battery recharging, automatic trolley arm connection) or with the environment (electromagnetic radiation from the line).

Lastly, it should be stressed that the various work programmes undertaken at national level have seldom progressed beyond the experimental stage and, more often than not, merely take the form of exploratory projects.

II

OBJECTIVES

The usefulness of an evaluation of the different techniques available or under study in Europe is demonstrated by the interest that a number of European countries are showing in this urban transport system and by the fact that none of them has up to now been able to take the decision to operate such a system on a commercial basis.

The objective of the cooperative research programme is accordingly to acquaint the participating States with all the relevant aspects to enable them to take the appropriate decisions when the dual-mode systems are being introduced. It will thus be necessary to possess the comparative data required for:

— taking decisions on the implementation of dual-mode systems;

— launching additional research.

To that end, the evaluation should determine:

— whether the system components are technically feasible and the associated incorporation problems;

— the economic factors;

— the problems that remain to be overcome.

III

PROGRAMME

On the basis of existing studies, prototypes, tests and demonstrations, the programme will essentially comprise:

— a technical evaluation, which could include tests or demonstrations to supplement those carried out at national level;

— an economic evaluation, on the basis of a common outline.

A. Systems to be evaluated

An assessment will be made of systems, including infrastructures, vehicles and all systems components which seem useful. Operating conditions will be taken into account, whenever necessary.

The vehicles to be assessed will comprise:

— those whose performance in the independent mode is on a par with that in the trolley mode;

— vehicles with a reduced performance in the independent mode, provided that they are actually operated in the dual mode.

The assessment will thus cover the following vehicles:

Germany:

1. Articulated trolleybus incorporating a diesel engine (Duo-Bus 0305 G)
2. Dual axle trolleybus incorporating a diesel engine (Duo-Bus 0305)
3. Dual axle battery-operated trolleybus (DUO-Bus 0305).

Finland:

4. HKL trolleybus incorporating a diesel engine.

France:

5. Articulated dual-mode battery-operated trolleybus (TREGIE)
6. ER 100 trolleybus incorporating a diesel engine.

Italy:

7. Diesel/battery hybrid bus (CNR) as the basis for the development of a dual-mode trolleybus
8. Trolleybus incorporating a diesel engine (CREMONA).

The foregoing list may be supplemented by any other vehicles that have reached a sufficiently advanced experimental stage in the course of the assessment.

B. Content of the evaluation

1. *Complete comparative description of the systems:*

   The data for this part of the programme will be compiled on the basis of:

   — information already submitted by certain countries during the preparatory phase of the project;

   — information to be submitted at a later date when the other national projects are sufficiently advanced.

2. *Technical evaluation: measurements and technical analyses of systems*

Only the performance measurements are defined below. There is a preliminary definition of the other technical evaluation data (consumption, transition from one mode to the other, comfort, external perception, state of charge of the reserve energy source, safety, reliability, maintenance, etc.) which have to be supplemented and improved when the project has been started. All the measurements must be performed under both trolleybus and independent traction.

2.1. *Performance*

Measuring conditions:

— under trolleybus traction: the performance will be measured for two values of overhead-wire voltage, namely, at the rated voltage (usually 600 V) and at 75% of this voltage (usually 450 V);

— under independent traction: where the vehicle is equipped with batteries for independent mode, the performance will be measured for the two values corresponding to the extreme conditions of battery charge (maximum and minimum) envisaged during normal operation and recommended by the manufacturer.

If the vehicle is equipped with a diesel engine, the performance measurements shall not be subjected to any special conditions.

In both cases the tests will be carried out with a load equal to 50% of the maximum payload.

The measurements will concern:

(a) acceleration: speed-time graph;

(b) maximum speed;

(c) climbing ability:

— graph of speed (km/h) vs % incline at not less than three measuring points,

— maximum effort (daN) measured by dynamometer at the rim and related to vehicle weight;

(d) braking other than through action of friction linings or pads: for the purpose of these measurements, friction lining or pad braking systems shall be rendered inoperative. The measurements shall be performed:

— with the accelerator pedal released,

— with the brake pedal depressed.

Measurements will be made of the distances covered in slowing down:

— from 60 km/h (or from the maximum speed if less than 60 km/h) to 30 km/h;

— from 60 km/h (or from the maximum speed if less than 60 km/h) to a complete halt;

and the speed vs time and motor current vs time graphs will be plotted.

Measuring conditions:

— in trolley mode:

- the overhead wire is unreceptive;
- the overhead wire is receptive (two voltage values, see the foregoing).

There are no special conditions if the vehicle is equipped with a diesel engine;

— in independent mode:

= where the vehicle is equipped with batteries:

- fully charged batteries refuse the load;
- the batteries accept the load (two levels of battery charge, see the foregoing).

There are no special conditions if the vehicle is equipped with a diesel engine;

(e) Range away from the trolley:

— range in km corresponding to normal service in accordance with a cycle to be defined: corresponding distance and time necessary to recharge reserve energy source;

— range in km corresponding to unscheduled service in accordance with the same cycle: corresponding distance and time necessary to recharge the reserve energy source.

2.2. *Consumption*

— at steady speed;

— cyclic;

— average in operation (if such information exists).

The consumption figures will be expressed in kWh per km and per kg and in kWh per km and per passenger.

2.3. *Transition from one traction mode to the other*

— actions of the driver (positioning of the vehicle and/or preselection);

— duration of the transition;

— vehicle speed.

2.4. *Comfort*

— rate of change of air;

— heating, power available in kW;

— noise level;

— measurements of accelerations in accordance with the cycle.

2.5. *External readings*

— gas emissions;

— external noise level;

— electromagnetic emission (measurement of spectrum).

2.6. *Monitoring of the state of charge of the reserve energy source*

If necessary.

2.7. *Safety*

— check on insulation defects;

— insulation quality;

— electrolytic-gas-explosion hazards.

2.8 *Reliability*

Availability factor; list of incidents and down-time.

2.9. *Maintenance*

— periodic: • length of period;
• list and duration of the operations to be performed;

— maintenance equipment specific to the dual-mode concept;

— level of staff specialization.

2.10. *Compliance of the vehicle with the various traffic regulations in force or in draft*

2.11. *Review of other components of the system*

— pantograph (review of the chances of accidental fly-off);

— overhead wires;

— substations;

— equipment specific to the batteries (depot charging plant, electrolyte level-adjustment device, battery-changing device);

— other equipment.

3. *Economic evaluation*

Costs and benefits will be studied separately.

3.1 *Costs:* a notional route rather than a network will be considered.

3.1.1. Parameters: the characteristics of the route will include the following parameters, that will be made to vary independently of each other:

(a) Physical features:

1. total length of the route;
2. distance covered in the independent mode and corresponding number of independent sections;
3. number of stops per km;
4. inclines.

(b) Operating parameters:

1. loads (in relation to the time and the distance from the town centre);
2. standards of comfort: six standing passengers per m^2;
3. minimum frequencies: during slack periods and rush hours (in both the town centre and the outskirts).

3.1.2. Calculation of the vehicle costs per km:

Only costs relating to each vehicle are included in the cost calculations. The costs included in this study are determined on the assumption that a bus line is being replaced by a dual-mode system.

(a) Capital costs:

1. vehicle;
2. overhead wire;
3. substations;
4. special equipment;

(b) Operating costs:

1. number of hours operation;
2. maintenance costs (spare parts and labour);
3. energy costs (battery, grid supply, diesel oil).

3.2. *Benefits*

A list of unweighted criteria will be prepared. The list of criteria could draw from that used in the economic study conducted in Germany.

C. Conclusions:

— comparison between the characteristics of the different systems:

- from a technical standpoint;
- from an economic standpoint;

— any recommendations on:

- new research;
- introduction of the systems;
- the coordination of certain activities of countries taking part in the project.

IV

TIMETABLE

Total duration of the project: three years.

1st year: implementation of the project (detailed definition of the evaluation outline, the main lines of which are given above in section III (B); definition of a testing and demonstration programme);

2nd year: evaluation;

3rd year: assessment of the results and conclusions.

V

RESOURCES

Each participant country will contribute to the research programme on the basis of its national activities and programmes.

The work that will be carried out by each country and the resources devoted to it will be determined by the experts.

VI

LEVEL OF COOPERATION

Coordination will comprise:

— meetings of the Management Committee;

— meetings of working parties;

— the presence of expert observers at certain phases of the tests or demonstrations.

In view of the need to assess the results of tests or demonstrations, it may be necessary for meetings of working parties or even of the Management Committee to be held in the countries where these experiments are to take place.

Memorandum of Understanding for the implementation of a European research project on the technical and economic evaluation of dual-mode trolleybus programmes (COST 303)

Date of entry into force: 28.9.1981

Duration: 27.9.1984

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	16.6.1982	16.6.1982
Denmark	28.9.1981	28.9.1981
Germany (FR of)	28.9.1981	28.9.1981
France	22.10.1981	22.10.1981
Italy	10.6.1982	10.6.1982
United Kingdom	2.3.1982	2.3.1982
Switzerland	16.12.1981	16.12.1981
Finland	28.9.1981	28.9.1981

Memorandum of Understanding for the implementation of a European research project on high temperature materials for conventional systems of energy generation and conversion using fossil fuels

(COST project 501)[1]

[1] Not published in the Official Journal.

Memorandum of Understanding for the implementation of a European research project on high temperature materials for conventional systems of energy generation and conversion using fossil fuels

(COST project 501)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on high temperature materials for conventional systems of energy generation and conversion using fossil fuels have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into high temperature materials for conventional systems of energy generation and conversion using fossil fuels (hereinafter referred to as 'the project').

2. The main objective of the project is to develop and coordinate research in order to:

— improve the properties and assessment of materials necessary for long-term use at high temperature in energy conversion and production installations and installations using the products of conversion, as well as in other advanced systems;

— evolve new methods for the processing of materials in order to ensure their economic utilization;

— study the possibilities afforded by substitute materials for conventional high temperature alloys.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 6 million European units of account at 1981 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other coordinatory services or activities necessary for the aims of the project to be achieved.

2. In order to ensure an efficient management of the project, in particular with regard to the appreciation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least eight Signatories. It may be extended by arrangement between the Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends for any reason whatsoever to terminate its participation in the project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below five, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The Governments referred to in the first subparagraph and the European Communities may take part in the project on a provisional basis during the abovementioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the Governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Udfærdiget i Bruxelles, den treogtyvende november nitten hundrede og enogfirs.

Geschehen zu Brüssel am dreiundzwanzigsten November neuenzehnhunderteinundachtizig.

Done at Brussels on the twenty-third day of November in the year one thousand nine hundred and eighty-one.

Fait à Bruxelles, le vingt-trois novembre mil neuf cent quatre-vingt-un.

Fatto a Bruxelles, addì ventitré novembre millenovecentoottantuno.

Gedaan te Brussel, de drieëntwintigste november negentienhonderdeenentachtig.

ANNEX I

Coordination of the project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4(1) of the Memorandum of Understanding participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the project and in particular for making the necessary arrangements for:

(a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);

(b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the project, while ensuring that each project forms the subject of collaboration between participants made up of two or more Signatories;

(c) advising on the direction which work should take;

(d) drawing up detailed plans and defining methods for the different phases of execution of the project;

(e) coordinating the contributions referred to in point 1(c) of Section 2 of the Memorandum of Understanding;

(f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2, point 2, of the Memorandum of Understanding, and for giving them instructions;

(g) keeping abreast of the research being done in the territory of the Signatories and in other countries;

(h) assuring the necessary coordination with ECSC research programmes;

(i) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;

(j) promoting and organizing conferences in the field of the project;

(k) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;

(l) dealing with any problem which may arise out of the execution of the project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragaph 2(i), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the project

A. Introduction

The impending shortage of oil and natural gas demands an appreciable improvement in the efficiency of their utilization both as fuels and as raw materials for the chemical industry. Further, in the very near future, replacement of oil and gas by coal and its derivatives on an economical basis must be initiated. World-wide, therefore, much effort is being directed towards the improvement of the techniques for coal utilization and conversion. The main effort has so far been directed to the processes themselves, and not to the advantages which could be gained by improvements in the properties and in the evaluation of the materials necessary for long-term service at high temperatures in conversion or power generation plant. Lack of materials with the required capabilities ('the materials barrier') or lack of reliable property data could limit the realization of optimum operating conditions for fuel conversion and utilization processes. Thus there is a need for a programme of research and development to provide the information necessary to overcome these deficiencies and, since the problems are complex and common to many European nations, a collaborative effort would provide the most efficient method of meeting the objective.

There is a general background of knowledge in high temperature materials technology and usage, but in many cases this is not appropriate to the special conditions encountered in advanced energy conversion systems. However, some work concerned with the specific problems of these applications began in the mid-1970s and several isolated programmes currently exist in Europe. Coordination of effort on a European scale is necessary to deal with this large task to ensure the strength of the relevant European industries in the face of the expected strong competition from overseas.

B. Objective and scope

The objective of the European effort should be the evaluation and improvement of materials which have a critical influence on the performance of energy conversion systems. The results of the work would be expected to contribute to:

1. Improved fuel efficiency (e.g. petrol, coal, combined coal and oil, lignite, peat, etc.);
2. Better service performance and economy of plant and equipment;
3. More economic use of materials with particular reference to conservation of strategic elements and recycling;
4. Better pollution control.

The types of processes involved are:

— advanced coal combustion plant (e.g. fluidized bed combustion);

— coal gasification plant;

— coal liquefaction equipment;

— gas turbines;

— steam turbines;

— diesel engines;

— and other advanced systems.

The common features in all of these are:

1. the demand for more exacting conditions of operation, e.g. higher temperatures, to increase efficiency; and
2. the need for components to operate reliably in environments that can be highly aggressive.

The studies should be restricted to the materials problems which are related to energy conversion processes as well as to the utilization of the conversion products and other fuels in power and heat generating equipment. The development of the conversion processes themselves is not being considered.

Materials for nuclear plant are the subject of other research programmes and should not be included in this project, although it may be appropriate to include materials problems concerned with the utilization of nuclear process heat in the areas mentioned above.

C. Problem areas requiring materials research: (examples)

1. *Fluidized bed combustion*

All internal components are exposed under conditions of corrosion and erosion attack at temperatures up to 900°C.

Typical problem areas are:

— sulphidation induced by e.g., $CaSO_4$;

— hot-salt corrosion (e.g. chlorides, sulphates);

— influence of impurities in the coal;

— erosion;

— interaction of mechanical stress and corrosive environment;

— life prediction methods.

2. *Coal gasification plant*

Internal components are exposed under service corrosion and erosion conditions and to a certain extent mechanical stresses at temperatures of 800—1 000°C.

Typical problem areas are:

— corrosion;

— erosion;

— interaction of mechanical stress and corrosive environment;

— life prediction methods.

3. *Coal liquefaction equipment*

The service temperatures are in the region of 450°C, and the problems are mainly concerned with the pressure vessel; these are, for instance:

— corrosion, erosion and stress corrosion cracking;

— codes for pressure vessels, including welding problems.

4. *Gas turbines*

Problems are encountered when:

— the gas temperatures in operation are increased;

— temperatures in the last stage of the compressor are increased;

— fuel of higher impurity content is used, as is to be expected for coal-derived fuels;

— hydrogen is used as fuel;

— blades are air-, steam- or water-cooled.

Typical problems are:

— interaction of creep, fatigue and corrosion/erosion effects;

— protection by coatings;

— life-time prediction;

— material evaluation.

5. *Steam turbines*

Materials problems may arise from an increase in the steam temperature to above 550°C (which may result from new types of combined cycle operations) and areas which require attention are:

— fatigue behaviour;

— creep behaviour;

— embrittlement;

— stress corrosion cracking.

6. *Diesel engines*

Materials problems limiting thermodynamic efficiency exist for:

— combustion chamber linings;

— exhaust valves.

7. *The impact of new materials and new materials processing methods*

Activities in this general area are relevant to all plant operating at high temperature.

The materials scene is continually changing. Against a background of steady improvement of existing alloys, entirely new materials will become available. Collaborative work would be an efficient method of assessing their potential and of establishing reliable design information. Materials likely to be of interest in this respect are exemplified at the beginning of Section D.

The advantage of new methods of materials processing is in the more economic use of materials through near-net-shape fabrication methods, such as powder metallurgical processes, hot isostatic pressing (HIP), closed-die-forging, advanced casting processes and improved tube-production methods.

The topics mentioned above are relevant to the materials problems of existing systems. However, with the development of new energy conversion concepts and the introduction of advanced systems for fossil fuel conversion and for power generation, new materials problems will appear and will require investigation.

D. Programme

Materials research topics

The work will be restricted mainly to conventional high temperature alloys based on Fe, Ni, or Co, but alternative materials, such as ceramics, fibre reinforced and oxide dispersion strengthened materials, high temperature Ti-base alloys and high temperature steels will be included.

The cooperative programme should include:

— the impact of the service environment on materials behaviour (e.g. effects of creep, fatigue and corrosion separately and in combination);

— the nature of typical environments in fossil fuel conversion systems (e.g. study of deposits);

— the development and evaluation of test methods which will provide a better assessment of materials behaviour;

— the improvement of life-time prediction methods (e.g. development of acceptable design codes for critical components);

— improved methods of non-destructive testing;

— the effect of more severe service conditions on materials in conventional design, e.g. increased temperature, changes in the service environment, higher levels of impurities (S, O, C, V, K, Na, particulate matter) in feedstocks;

— coating systems of protection against corrosion/erosion as well as thermal barrier coatings and their interaction with mechanical and metallurgical properties of the protected parts;

— the effects on service properties of advanced processing methods for improvement of properties, fabricability, or materials economy (reduced scrap losses): powder metallurgy, isothermal (closed die) forging, thermo-mechanical processing, investment casting, directional solidification, advanced methods of welding and joining;

— the effects on service properties of changes in alloy chemistry in relation to replacement or more economical use of strategic materials (e.g. cobalt);

— effects of restoration treatments and repair operations on high temperature components;

— problems related to increased recycling of high-temperature materials (establishment of impurity levels, scrap classification, etc.).

Memorandum of Understanding for the implementation of a European research project on high temperature materials for conventional systems of energy generation and conversion using fossil fuels (COST 501)

Date of entry into force: 23.11.1981

Duration: 22.11.1984

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EAEC	23.11.1981	23.11.1981
Belgium	7.10.1982	7.10.1982
Denmark	23.11.1981	23.11.1981
Germany (FR of)	23.11.1981	23.11.1981
France	23.11.1981	23.11.1981
Italy	23.11.1981	23.11.1981
Netherlands	23.11.1981	23.11.1981
United Kingdom	23.11.1981	23.11.1981
Norway	23.11.1981	23.11.1981
Austria	23.11.1981	23.11.1981
Switzerland	23.11.1981	23.11.1981
Finland	23.11.1981	23.11.1981
Sweden	23.11.1981	23.11.1981

Agreement between the European Economic Community and the Swiss Confederation on a concerted action project in the field of the detection of the tendency to thrombosis

(Medical research II)[1]

[1] OJ L 83, 29.3.1982, p. 2.

Agreement between the European Economic Community and the Swiss Confederation on a concerted action project in the field of the detection of the tendency to thrombosis

(Medical research II)

The European Economic Community,

of the one part,

The Swiss Confederation,

of the other part,

Whereas a European concerted research action project in the field of the detection of the tendency to thrombosis is likely to contribute effectively to ensuring an optimum level of health in individuals and in society;

Whereas, by its Decision of 18 March 1980, the Council of the European Communities adopted a second research programme in the field of medical and public health research consisting of four multiannual concerted projects, one of which relates to the detection of the tendency to thrombosis;

Whereas, the Member States of the Community and the Swiss Confederation, hereinafter referred to as 'the States', intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex I and are prepared to integrate such research into a process of coordination which they consider will be of mutual benefit;

Whereas the execution of the research covered by the concerted action project will require a financial contribution of approximately 10 million ECU from the States,

HAVE DECIDED to conclude this Agreement and to this end have designated as their Plenipotentiaries:

The Council of the European Communities:

Paul NOTERDAEME,

Ambassador Extraordinary and Plenipotentiary,

Permanent Representative of Belgium,
Chairman of the Permanent Representatives Committee;

Paolo FASELLA,

Director-General of the Directorate-General for Research, Science and Education of the Commission of the European Communities;

The Swiss Confederation:

Pierre CUENOUD,

Ambassador Extraordinary and Plenipotentiary,

Head of the Mission of the Swiss Confederation to the European Communities;

WHO HAVE AGREED AS FOLLOWS:

Article 1

The Community and the Swiss Confederation, hereinafter referred to as 'the Contracting Parties', shall participate for a period extending until 31 May 1984 in a concerted action project in the field of the detection of the tendency to thrombosis.

This project shall consist of coordinating the Community concerted action programme with the corresponding programme of Switzerland. The programmes covered by this Agreement are listed in Annex I.

The States shall remain entirely responsible for the research executed or coordinated by their national institutions or bodies, listed in Annex I.

Article 2

The Commission of the European Communities shall be responsible for the coordination.

It shall be assisted in this task by the project leader.

Article 3

In order to facilitate the execution of the project, the Concerted Action Committee on the Detection of the Tendency to Thrombosis, hereinafter referred to as 'the Committee', set up by the Decision of 18 March 1980, shall be enlarged to include the Swiss Confederation.

The Secretariat of the Committee shall be provided by the Commission.

The terms of reference and the composition of the Committee shall be as set out in Annex II.

Article 4

The maximum financial contribution by the Contracting Parties to the coordination costs shall be:

— 616 000 ECU from the Community for a four-year period beginning on 1 June 1980,

— 38 000 ECU from the Swiss Confederation for the period referred to in the first paragraph of Article 1.

The ECU is that defined in the Financial Regulation applicable to the general budget of the European Communities and by the financial provisions adopted pursuant to that Regulation.

The rules governing the financing of the Agreement are set out in Annex III.

Article 5

In accordance with the procedure laid down by the Commission in agreement with the Committee, the States shall exchange regularly all relevant information concerning the execution of the research covered by the concerted action project and shall forward to the Commission all information which may be useful for coordination purposes. They shall also endeavour to provide the Commission with information on research in the field in question planned or carried out by bodies for which they are not responsible. Any information shall be treated as confidential if the State which provides it so requests.

The Commission shall prepare yearly progress reports on the basis of the information supplied and shall forward them to the States.

At the end of the period of the concerted action project, the Commission, in agreement with the Committee, shall forward to the States a general report on the execution and the results of the project obtained, in particular so that the results obtained are made accessible as completely and rapidly as possible to undertakings, institutions and other parties concerned, in particular on the social level. This report shall be published by the Commission six months after it has been forwarded to the States, unless a State objects. In the latter case, the report shall be distributed, at their request, solely to the institutions and undertakings whose research and production activities justify access to the results of the research covered by the project.

Article 6

1. As soon as possible after signing this Agreement, each of the Contracting Parties shall notify the Secretary-General of the Council of the European Communities of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. This Agreement shall enter into force on the day on which the second of the Contracting Parties forwards the notification referred to in the first paragraph.

Prior to entry into force of this Agreement and for a maximum period of nine months after it is signed, the Swiss Confederation may take part without voting rights in the work of the Committee.

3. For a period of six months following its entry into force, this Agreement shall be open for accession by other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971. The instruments of accession shall be deposited with the General Secretariat of the Council of the European Communities.

A State which accedes to this Agreement shall become a Contracting Party within the meaning of Article 1 on the date on which the instrument of accession is deposited. It shall contribute to the coordination costs under the conditions laid down in Article 4 concerning the Swiss Confederation.

4. The Secretary-General of the Council of the European Communities shall inform each of the Contracting Parties of the lodging of the notifications referred to in paragraph 1, of the date of entry into force of this Agreement and of the deposit of the instruments of accession referred to in paragraph 3.

Article 7

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

TIL BEKRÆFTELSE HERAF har undertegnede befuldmægtigede underskrevet denne aftale.

ZU URKUND DESSEN haben die unterzeichneten Bevollmächtigten ihre Unterschriften unter dieses Abkommen gesetzt.

ΕΙΣ ΠΙΣΤΩΣΗ ΤΩΝ ΑΝΩΤΕΡΩ, οἱ ὑπογεγραμμένοι πληρεξούσιοι ἔθεσαν τίς ὑπογραφές τους στήν παρούσα συμφωνία.

IN WITNESS WHEREOF the undersigned Plenipotentiaries have signed this Agreement.

EN FOI DE QUOI, les plénipotentiaires soussignés ont apposé leurs signatures au bas du présent accord.

IN FEDE DI CHE, i plenipotenziari sottoscritti hanno apposto le loro firme in calce al presente accordo.

TEN BLIJKE WAARVAN de ondergetekende gevolmachtigden hun handtekening onder deze Overeenkomst hebben gesteld.

Udfærdiget i Bruxelles, den fireogtyvende marts nitten hundrede og toogfirs.

Geschehen zu Brüssel am vierundzwanzigsten März neunzehnhundertzweiundachtzig.

Ἔγινε στίς Βρυξέλλες, στίς εἴκοσι τέσσερις Μαρτίου χίλια ἐννιακόσια ὀγδόντα δύο.

Done at Brussels on the twenty-fourth day of March in the year one thousand nine hundred and eighty-two.

Fait à Bruxelles, le vingt-quatre mars mil neuf cent quatre-vingt-deux.

Fatto a Bruxelles, addì ventiquattro marzo millenovecentoottantadue.

Gedaan te Brussel, de viereentwintigste maart negentienhonderdtweeëntachtig.

ANNEX I

Programmes covered by the Agreement

A. Project relating to the detection of the tendency to thrombosis

The research will be carried out with the purpose of acquiring scientific and technical knowledge in this field, selected for its importance at Community level.

The research is expected to cover the following topics:

1. Detection of activated clotting factors and their reaction products;
2. Quantitative analysis of the inhibitors of the clotting system;
3. Studies of the active and inhibitory components of the fibrinolytic system;
4. Studies of blood platelets;
5. Pilot studies in well-defined populations following standardization of materials and methodology.

Belgium, Denmark, Germany, Greece, France, Ireland, Italy, the Netherlands, the United Kingdom and Switzerland will contribute research under the topics mentioned above.

B. Implementation and coordination of the national contributions to the project

The following authorities carrying out medical research in the States will ensure the implementation of the national contributions to the project and their coordination at national level.

Belgium:	FRSM - Fonds de la recherche scientifique médicale, Bruxelles FGWO - Fonds voor Geneeskundig Wetenschappelijk Onderzoek, Brussel
Denmark:	Statens Coegevidenskabelige Forskningsråd, København
Germany:	Zentrum für Innere Medizin der Universität Gießen Department für Innere Medizin der Universität Ulm
Greece:	Ὑπηρεσία Ἐπιστημονικῆς Ἐρεύνης καί Τεχνολογίας, Ἀθήνα Συμβούλιο Ἰατρικῶν Ἐρευνῶν, Ἀθήνα
France:	INSERM - Institut national de la santé et de la recherche médicale, Paris
Ireland:	Medical Research Council of Ireland, Dublin
Italy:	CNR - Consiglio nazionale della ricerca, Roma, and Istituto superiore di sanità, Roma
Netherlands:	Gezondheidsorganisatie TNO and Stichting Medisch Wetenschappelijk Onderzoek FUNGO, Den Haag
United Kingdom:	MRC - Medical Research Council, London
Switzerland:	Theodor Kocher Institut, Universität Bern

ANNEX II

Terms of reference and composition of the Committee

1. The Committee shall:

1.1. Contribute to the optimum execution of the project by giving its opinion on all of its aspects;

1.2. Evaluate the results and draw conclusions as regards their application;

1.3. Be responsible for the exchange of information referred to in the first paragraph of Article 5;

1.4. Keep abreast of national research being done in the fields covered by the project, and more especially of scientific and technical developments likely to affect the execution of the project;

1.5. Suggest guidelines to the project leader.

2. The Committee's reports and opinions shall be forwarded to the Commission and to the States. The Commission shall forward these opinions to CREST.

3. The Committee shall be composed of persons responsible for coordinating the national contributions to the project leader. Each member may be accompanied by experts.

ANNEX III

Financing rules

Article 1

These provisions lay down the financing rules referred to in Article 4 of the Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to the Swiss Confederation a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in ECU and in the currency of the State concerned, the value of the ECU being that defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

The Swiss Confederation shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year and by 31 March at the latest. Any delay in payment shall give rise to the payment of interest by the Swiss Confederation at a rate equal to the highest discount rate obtaining in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. This increased rate shall be applied to the entire period of delay. However, this interest shall be recoverable only if payment is made more than three months after the Commission has sent a call for funds.

Article 3

The funds paid by the Swiss Confederation shall be credited to the project as budget receipts allocated to a heading in the statement of revenue of the budget of the Commission.

Article 4

The provisional timetable for the coordination costs referred to in Article 4 of the Agreement is annexed hereto.

Article 5

The Financial Regulation in force applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the project shall be prepared and transmitted to the Swiss Confederation for information.

Annex to ANNEX III

PROVISIONAL TIMETABLES FOR THE CONCERTED ACTION PROJECT: DETECTION OF THE TENDENCY TO THROMBOSIS

	1980		1981		1982		1983		1984		Total	
	AC	AP	AC	AP	AC	AP	AC	AP	AC	AP	AC	AP
1. Initial estimate of overall requirements (figures on the commitments and payments schedule and in the table of equivalence in Annex II to the budget of the Commission)												
— Staff	77 000	77 000	154 000	154 000	47 500	47 500	154 000	154 000	77 000	77 000	616 000	616 000
— Administrative operating expenditure					31 500	31 500						
— Contracts					75 000	75 000						
TOTAL	77 000	77 000	154 000	154 000	154 000	154 000	154 000	154 000	77 000	77 000	616 000	616 000
2. Revised estimate of expenditure taking into account additional requirements arising from the accession of the Swiss Confederation												
— Staff	—	—	47 500	47 500	163 500	163 500	163 500	163 500	86 500	86 500	654 000	654 000
— Administrative operating expenditure			34 500	34 500								
— Contracts			81 500	81 500								
NEW TOTAL	(77 000)	(77 000)	163 500	163 500	163 500	163 500	163 500	163 500	86 500	86 500	654 000	654 000
3. Difference between 1 and 2 to be covered by the contribution from the Swiss Confederation	—	—	9 500	9 500	9 500	9 500	9 500	9 500	9 500	9 500	38 000	38 000

AC = Account credited
AP = Account paid

Agreement between the European Economic Community and the Swiss Confederation on a concerted action project in the field of the detection of the tendency to thrombosis (Medical research II)

Decision of Community programmes: 18.3.1980

Date of entry into force: 24.3.1982

Duration: 31.5.1984

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	24.3.1982	24.3.1982
Switzerland	24.3.1982	24.3.1982

Memorandum of Understanding for the implementation of a European research project on the use of alternative fuels in road vehicles

(COST Project 304)[1]

[1] Not published in the Official Journal.

Memorandum of Understanding for the implementation of a European research project on the use of alternative fuels in road vehicles

(COST Project 304)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on the use of alternative fuels in road vehicles have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the use of alternative fuels in road vehicles (hereinafter referred to as 'the project').

2. The main objective of the project is to develop joint solutions to bring about the harmonized use of several types of fuel.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the technical description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The project will be carried out through concerted action in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the project is estimated at approximately 5 830 000 ECU at prices obtaining on 1 January 1981.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

The Signatories intend to take part in the project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with other organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinating services or activities necessary for the aims of the project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for inter-laboratory visits and cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three and a half years upon signature by at least four Signatories. It may be extended by arrangement between the Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will remain open for signature, by the Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities, for a period of six months from the date of the first signature.

The Governments referred to in the first subparagraph and the European Communities may take part in the project on a provisional basis during the abovementioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the Governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in international public law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the dates of the signatures to this Memorandum of Understanding and of the date of its entry into effect, and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Udfærdiget i Bruxelles, den trettende maj nitten hundrede og toogfirs.

Geschehen zu Brüssel am dreizehnten Mai neuenzehnhundertzweiundachtzig.

Done at Brussels on the thirteenth day of May in the year one thousand nine hundred and eighty-two.

Fait à Bruxelles, le treize mai mil neuf cent quatre-vingt-deux.

Fatto a Bruxelles, addì tredici maggio millenovecentoottantadue.

Gedaan te Brussel, de dertiende mei negentienhonderdtweeëntachtig.

ANNEX I

Coordination of the project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4.1. of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum, without, however, having the right to vote.

2. The Committee will be responsible for coordinating the project and, in particular, for making the necessary arrangements for:

(a) the choice of research topics on the basis of those provided for in Annex II including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the project framework will be referred for an opinion to the COST Technical Committee on Transport;

(b) advising on the direction which work should take;

(c) drawing up detailed plans and defining methods for the different phases of execution of the project;

(d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;

(e) keeping abreast of the research being done in the territory of the Signatories and in other countries;

(f) liaising with appropriate international bodies;

(g) exchanging research results amongst the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;

(h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;

(i) dealing with any problem which may arise out of the execution of the project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signature.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2(g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the project.

Such licences will be granted on fair and reasonable terms having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

Technical description

1. Introduction

The project comprises research and development in the following fields:

— methanol and ethanol,

— liquefied petroleum gas (LPG),

— hydrogen,

— biogas,

— wide-cut fuel.

The programmes concerning the various alternative fuels are set out below.

2. Energy supply for road traffic

The development of the price of mineral oil and mineral oil products since the first supply crisis in 1973 and even more so in the wake of the Iran crisis in 1979 has made it clear that one-sided import dependencies and monostructures in energy supply have a considerable adverse effect on the safety of supply in numerous European countries. Current scenarios which are used to study the oil requirements and oil production to be expected anticipate shortages during the coming 10 years. All European countries depend to a large extent on oil and only a few are able to meet the demand from their own resources. Among the oil-consuming sectors, a special role is played by road transport. This sector is practically completely dependent on oil-derived fuels.

A large part of transport of goods and persons in Europe relies on road transport. However, immediately feasible alternative solutions do not at present exist. In addition, both the infrastructure of supply and the motor vehicles used are tailored exclusively to the application of oil-derived fuels. Short-term success can therefore be achieved in general only by energy conservation, that is to say by reducing demand in terms of quantity. As far as road transport is concerned, this will mean a sensible utilization of the motor vehicle and a fuel-efficient driving style. In the medium and long term, a diversification with a view to safer alternatives will be a priority. Particularly important will be alternative fuels which can be produced from domestic raw materials, like coal, gas, biomass, etc. At present, most of these fuels are not yet economically viable and require basic research and development activities to be introduced.

3. Goals of the project

In the last few years, numerous national activities have been developed to diversify the supply of fuel in order to create a basis for deciding on the prospects and potential of alternative fuels. European initiatives should therefore aim specifically to coordinate their national approaches as far as possible with overall European solutions. The close interdependence of European tourist and goods traffic calls for coordinated approaches and solutions in order to ensure greatest possible freedom of road traffic.

In view of the developments which can be anticipated, the technical sub-group for the preparation of the project has scrutinized the existing national programmes and made proposals for joint activities. The coordinated proposals are included in the annex.

According to the technical sub-group, the advanced stage of the activities under way in the various countries demand that an early decision be taken on the implementation of the action.

Such a limited measure could help coordinate activities existing in the European framework and indicate possible approaches to common solutions in those areas which are essential for a harmonization at the European level.

4. Coordination with other international activities

Besides the proposal for the project, activities for a cooperative research and development programme for alcohols and alcohol-mixed fuels as motor fuels exist in the framework of the International Energy Agency.

Furthermore under the EEC programme on the rational utilization of energy, a technical sub-group was, in addition, set up in the framework of sub-group C 'Road traffic' to study the production, storage and distribution of alternative fuels. In the light of the existing parallel activities, the project is also directed to harmonization aspects. In order to avoid duplication of effort, all activities should be coordinated and carried out in close cooperation with the programmes of the International Energy Agency and the EEC.

5. Conclusions

The project is an integrated proposal which is subdivided into the five individual topics set out in Section 1: methanol and ethanol; LPG; hydrogen; biogas; wide-cut fuel.

The overall duration of the research and development programme will be three and a half years. The projects covering the five individual substitute fuels will occupy the following periods:

Methanol and ethanol	= two years (divided into two phases);
LPG	= project lasting one and a half to three years;
Hydrogen	= one and a half years for the first phase; second phase still to be finalized;
Biogas	= two and a half years divided into two phases;
Wide-cut fuel	= three and a half years.

Each of the countries participating in the project will make its contribution to the overall programme on the basis of its national activities and programmes. The work will thus be carried out in the form of a concerted action project.

The work to be done by each individual country and the requisite contributions will be determined by the Management Committee.

The overall cost of the research and development programme for the project will be about 6 000 000 ECU, allotted as follows among the individual topics:

Methanol and ethanol		1 400 000 ECU
LPG	(HFL 4 400 000)	1 573 320 ECU
Hydrogen	(FF 1 000 000) (DM 400 000)	323 460 ECU
Biogas	(SFR 1 900 000)	813 355 ECU
Wide-cut fuels	(LIT 2 100 000 000)	1 718 775 ECU
		5 828 910 ECU [1]

[1] Rate of conversion of the national currency into ECU as at 12 January 1981.

Development and demonstration (D & D) programme for the use of alcohol motor fuels in road vehicles

1. Introduction

Since the oil crisis in 1973, studies and research projects have been initiated in numerous European countries with a view to the replacement of oil-related fuels by alcohols or fuels containing alcohols. In some European countries, demonstration programmes were launched with the aim of exploring the possibilities of distributing and using these fuels in road vehicles under conditions approaching those found in practice. The potential alternative fuels are methanol and ethanol. Methanol and ethanol are valuable blending components which improve some properties of the fuels. They are obtainable from raw materials not necessarily dependent on oil. As regards the use of pure alcohol as fuels, methanol is to be preferred because of its potential to be produced in large quantities. The results and experience obtained so far show that alcohol fuels, especially methanol, can be successively introduced into Europe on a wide scale and with a lead time of only a few years. A large impact is obtained when pure-alcohol fuels are introduced.

Current national application-orientated development and demonstration programmes in Europe cover a wide range of variants. In the various programmes the use of alcohols in mixture with conventional fuels as well as that of pure alcohol fuels is being studied in spark-ignition and diesel engines.

The national activities in the various countries have reached such an advanced stage that a general basis for decisions now exists in some countries and that detailed technical bases for decisions will be available in the next few years. In order that the necessary aspects may be taken into account in the introduction process, the project will concentrate on those areas in which cooperation and coordination are especially important as far as the European market is concerned.

2. Aim of the D & D programme

The aim of the D & D programme is to prepare for a partial replacement of petroleum products by alcohol fuels in Europe. Either drastically rising prices for petroleum products or a sudden shortfall in supplies would hasten such a substitution or render it essential in the short term. On the technical side, this calls not only for the testing of individual concepts but also for cooperation and harmonization within Europe. For this, alternative strategic concepts must also be developed so as to ensure that the introduction of the substitute motor fuels proceeds as smoothly as possible. Owing to the cross-frontier traffic in Europe, the progressive introduction of alcohol motor fuels only makes sense if several countries participate in the introduction of specific motor fuels. Specifications and framework conditions must be laid down for the alcohol fuels and the appropriate engine designs so that the relevant industry can prepare for such a step in good time. The D & D programme should thus result in:

— a technical and economical basis for political decisions on the introduction of alcohol motor fuels in Europe;

— guidelines to fuel and motor manufacturers;

— strategies for introduction of alcohol motor fuels in Europe.

Because of the long lead times involved it is essential to start the proposed project as soon as possible.

With a view to the attainment of these aims, the following development and demonstration programme is proposed:

3. Basis of the D & D programme

For the purposes of executing the programme, it is assumed that:

1. Methanol and ethanol can be produced from raw materials available in Europe;
2. Production from non-indigenous raw materials would diversify, both geographically and politically, the present total dependence on oil;
3. A number of routes for the production of alcohols on a commercial scale are known and new technological developments are at the application-testing stage;
4. Data on available quantities of alcohols and on market prices will be derived from other sources and are not the concern of this COST programme.

4. D & D programme

The D & D programme breaks down into the following chapters:

1. *Fuels*

   (a) Blended fuels of alcohols and conventional fuels:

   — specification of the physical properties of blended fuels with low and medium alcohol contents, in particular as regards:

   - calorific value;
   - lead content;
   - octane ratings;[1]
   - volatility;
   - stability;

   — environment, health and safety;

   — legal and economic questions (e.g. regulations, guides and incentives);

   — strategies for introduction on the market.

   (b) Pure-alcohol fuels (limitation to methanol):

   — specification of the physical properties of pure-alcohol fuels, in particular as regards:

   - calorific value;
   - volatility;
   - stability;

   — environment, health and safety;

   — legal and economic questions (e.g. regulations, guides and incentives);

   — strategies for introduction on the market.

2. *Distribution*

   Alcohols, though chemically different, are liquid fuels which can be handled as conventional gasoline and diesel fuels. For the introduction of alcohol fuels onto the market, it is important to analyse the existing infrastructure for the storage, transportation and distribution of fuels and to ascertain what changes are required.

[1] In this context the optimization of the refining-engine system should be analysed.

To this end, consideration should be given mainly to:

— compatibility of materials to alcohols;

— safety questions, fire hazard, toxicity;

— protection of water resources;

— water uptake of the fuels.

3. *Propulsion concepts*

For the application of blended fuels and pure-alcohol fuels, various propulsion concepts will be analysed, for example:

— adapted spark-ignition and diesel engines for blended fuels and pure-alcohol fuels;

— recently developed engines for pure methanol with small amounts of additives, which achieve optimum utilization of the alcohol fuel;

— investigation of special concepts such as the operation of motor vehicles with alternately conventional fuels or alcohol fuels, with a view to facilitating the transition to introduction onto the market.

Under the project, alternative concepts will have to be assessed against the background of the fuel specification. For this purpose, important subjects for evaluation are:

— optimization of engine parameters (compression ratio, octane rating);

— fuel consumption;

— compliance with the limiting values for exhaust gas emissions;

— compatibility of the construction materials with alcohols;

— performance (also under extreme climatic conditions);

— lubricant technology and wear;

— safety and legal provisions.

4. *Harmonization with other programmes*

The COST 304 programme should be harmonized with other international activities in progress such as the alcohol fuels programme of Subgroup C (production) and IEA (R & D).

5. *Plan of work, costs and duration of the programme*

The programme takes account of the experience and results obtained with the national programmes, especially in the countries which are participating in the project.

In the initial phase, the data available from the national programmes are to be collected and a preliminary analysis made of the viable fuels and engine concepts. The cooperation of the industry concerned is desirable. In addition to some permanent contributors from various countries, partial contributions from part-time contributors will be necessary for this task. The initial phase must result in a status report. As regards the duration of this work, a period of about one year is considered necessary.

In the second phase, the definitive technical and economical data relating to the introduction onto the market will be harmonized and laid down. The final report will include considerations, conclusions and recommendations. The duration of the second phase will be about one year.

The cost of salaries, missions and consumable materials for these two years is estimated at about 1.4 million ECU.

Proposal for research in the field of LPG

1. Standard LPG specification

LPG is defined as a mixture consisting mainly of butane and propane. But there are other components: LPG contains gases such as ethane, propane, propylene, isobutane, n-butane (iso, trans, cis) and isoptane. It also contains more of the heavier hydrocarbons which occur as by-products.

The practice is that there is no standard LPG specification.

When the composition of LPG is altered, however, a change occurs in the specific gravity, the upper and lower caloric value, the vapour pressure, the Wobbe index and the octane rating. Therefore, one can expect that LPG will have greatly different characteristics.

An efficient application of LPG to motor vehicles requires a study of the variability of the composition range that can be expected and the effects of composition on the physical properties of the fuel. Also the possibilities of standardization of the LPG composition should be investigated.

2. A standard manner of installing LPG systems in vehicles

The safety of the LPG system during the life of a motor vehicle depends directly on the quality of its construction. For the reason of safety and efficiency it is particularly important to arrive at a universally agreed standard manner of installing LPG systems in vehicles. All European countries have rules concerning the installation of LPG systems. However, they are not harmonized. In most cases the differences are only minor, but there are some essential differences such as the presence or absence of a spring loaded safety device.

3. Standard test rules for annual or biennial tests

To further the safety aspect of the use of LPG it is recommended that uniform test rules should be drawn up. To some extent, of course, these rules will depend on the standardization of installing LPG systems, as is proposed above, as well as the proposal concerning components.

4. Standardization and safety aspects of the LPG-pump-tank coupling

The LPG-pump-tank coupling is not standardized in Europe; for instance, it is not possible for a Dutch LPG-car owner to tank LPG in Italy without special accessories. This, of course, will hamper international traffic. For that reason the possibilities of standardization of 'couplings' should be investigated. Furthermore it is necessary to investigate the safety aspects of tanking LPG; in particular which measures can be taken to prevent the car driver from driving away before having decoupled, or to be sure that no overfilling of the tank takes place. Bearing in mind the mandate of this group it will be sufficient to limit ourselves to a so-called paper-study of these subjects.

5. More compact vehicle components with a special view to collisions

An LPG tank itself is constructed from material that is practically indestructible. However, if the components are hit, slight leakage can occur. This might be prevented by a change in the design of the accessory components. Efforts should be made to formulate rules for the construction of these components.

6. Development of an optimal gas engine

It is not sufficient merely for the engine to be able to run on a gaseous fuel. It must be possible to improve the efficiency and the emission of exhaust gases by re-designing the shape of the combustion chamber, the compression ratio, the air-fuel ratio, the quality of the ignition, and other engine parameters. In this context it is particularly important to improve the fuel efficiency of the gas engine, which is low compared with that of a diesel engine.

One of the possibilities of improving engine performance is optimization of the feed system. A study in this field may include:

— optimization of the carburettor feed system, especially to cope with the problems of cold starting and engine feed at high power outputs;

— development of a (multi-points) injection electronic-controlled feed system; by means of electronic feed control it may be possible to derive from the emissions versus consumption trends different types of operational optimizations aimed at either minimizing consumption or the emission of exhaust gases.

Calculation and testing will include, in both cases: adjustment of the compression ratio to the octane rating of LPG, optimization of the spark ignition, valve opening and timing adjustments, (automatic) control of the air-fuel ratio, etc.; of course testing of these systems will include fuel consumption, exhaust emissions and engine performance.

7. Estimated costs of the proposals

Proposal	Estimated costs (Dutch guilders)	Estimated duration (Years)
1. Standard LPG specification	200 000	2
2. Standard manner of installing LPG systems	150 000	2
3. Standard test rules	100 000	2
4. Coupling pump-tank	150 000	1.5
5. Compact components	200 000	2
6. Optimal gas engine	3 600 000	3

Proposal for research, development and demonstration (R, D & D) programme relating to the use of hydrogen for road haulage purposes

1. Introduction

Of the various potential substitutes for fuels derived from oil, hydrogen appears to be one of the most promising even for road transport, especially in view of the fact that it is likely to be widely available in the future.

In a number of countries, hydrogen is regarded as the energy vector of the future which will ensue from the development of nuclear energy and solar energy based on photovoltaic cells.

Quite apart from this production aspect, numerous tests have been carried out in the industrialized countries on engines, and even vehicles, using hydrogen. In addition, a wide range of solutions has been employed with regard to in-vehicle storage:

— hydrogen under pressure;

— low-temperature liquid hydrogen;

— metal hydrides.

Moreover, few tests have been carried out systematically and, accordingly, a wide variety of techniques for feeding the hydrogen to the engine has been used, i.e. introduction into the inlet manifold by means of a conventional carburation system or by direct injection.

2. The aim of the programme

The aim of the proposed R, D & D programme is to study, develop and test engine systems fuelled in whole or in part by hydrogen and to concentrate more particularly on the in-vehicle storage aspect.

3. Proposals for an R, D & D programme

We shall proceed from the hypothesis that the hydrogen is produced under effective conditions, either at several outlets throughout the country or at multiple outlets (nuclear power stations and national grid combined).

The proposed programme would entail the following stages:

1. *Characteristics of hydrogen as a fuel*
   - — purity at the production stage;
   - — bulk transport (e.g. gas pipeline).
2. *Processing for storage at the service station*
   - — compression → in light cylinders;
   - — very-low-temperature liquefaction → in a cryogenic cylinder;
   - — in the form of metal hydrides → choice of suitable hydrides.
3. *In-vehicle storage*
   - — gas cylinders (permanent in-vehicle installation or standard replacement);
   - — cryogenic cylinder;
   - — metal hydrides (permanent installation or standard replacement).

In each instance a careful examination should be made of the problems associated with the transfer of hydrogen between the ground system and the in-vehicle system. A complete energy and technical balance-sheet will need to be drawn up (convenience and duration of refuelling operations, constraints, form, dimensions and weights of the storage systems as a function of the desired vehicle range).

On the basis of the tests already carried out, cryogenic storage seems uncompetitive compared with pressurized cylinders, which can be lightened to a very high degree (aluminium or fibre), and metal hydrides the most efficient combinations of which have yet to be discovered.

It should be noted that the results could provide long-term benefits as far as the in-vehicle fuel cell is concerned, provided that the current development thereof culminates in a reliable and inexpensive product.

4. *Engine fuel-supply and tests on engines*

In order to supply the engine with fuel, it will be necessary to modify the supply system and develop specific systems (carburation, injector). Tests should be carried out to this end.

The bench-tests on the engines should cover the following points:

— examination of the extreme limits of combustion with regard to hydrogen-air mixtures for four-stroke and two-stroke multicylinder spark-ignition engines (optimization study of the shape of the chamber and the position of the spark-plug, combustion temperatures, etc.);

— measurements of performance, power levels and noxious emissions over the entire operating range (variable speed and charge);

— endurance and wear tests;

— assessment of the deterioration of the lubricants.

5. *Tests on vehicles*

— examination of actual operating constraints;

— possible loss of performance of vehicles under real operating conditions as compared with identical petrol-fuelled vehicles (owing to the lower engine output and/or increased weight of the hydrogen tank);

— tests of driving capabilities (restarts, accelerations, engine brake, etc.).

6. *Economics and statutory aspects*

— fuel prices (production, transport, storage, distribution);

— investment needs and operating costs (costs on the ground and in the vehicle, calculated 'per vehicle');

— taxation;

— safety problems (leaks, explosions, handling, etc.);

— regulations to be laid down in respect of land-based and in-vehicle storage and, where appropriate, movement of vehicles.

4. Resources

The programme is backed by the know-how and results already acquired and will be able to use existing research installations in the project countries in keeping with their specific fields of activity and interest.

5. Work schedule - Cost and duration of the programme

The work schedule must be drawn up in such a way that — at the end of an initial stage — it will be possible to adopt solutions which are likely to produce results on the basis of technical and economic arguments.

The estimated duration of this initial stage is 18 months and the estimated total cost FF 1 000 000 as far as French involvement is concerned.

The second stage will consist in optimizing, in terms of energy, efficiency and operating facilities (cost, constraints, etc.) the solution or solutions adopted in the first stage.

It is not yet possible to estimate the financial cost of this second stage.

Research, development and demonstration (R, D & D) programme on the use of biogas in diesel engines

1. Introduction

Anaerobic fermentation of organic matter produces a gas known as biological gas or biogas, consisting of approximately 70% methane and 30% carbon dioxide together with some impurities.

In various countries numerous projects are under way on the production and use of biogas. In most cases, the raw material consists of animal manure collected on the farm; however, agricultural produce, harvest residues and solid and liquid urban refuse constitute appreciable potential resources for the production of this renewable form of energy.

Biogas is currently used mainly for cooking and heating; in some cases it is used for combined heat and power production in fixed plant such as the TOTEM module developed by Fiat around its 127 internal combustion engine.

In the industrialized countries, agriculture is now highly mechanized and has a high level of productivity based on the use of tractors and agricultural machinery equipped with diesel engines.

In view of the fact that fuel supplies may become difficult or impossible to obtain during crises or wars, it appears advisable to develop systems and test motors operating on a native source of energy such as biogas.

The use of biogas for additional heating in winter and as a tractor fuel in summer would allow farms to keep up their full production capacity even if frontiers were closed.

2. Aim of the programme

The aim of the R, D & D programme proposed as part of the project is to design, develop and experiment with existing engine systems, based on the diesel principle, operating on diesel and/or biogas and fitted to agricultural vehicles.

The programme is to be devised with a view to obtaining forthwith the necessary know-how to cope with future disturbances in fuel supplies. The substitute fuel should be used near the place where it is produced. It would later be conceivable to extend the results to road vehicles equipped with diesel engines.

3. Items in the R, D & D programme

The programme is based on the following two hypotheses:

- biogas production techniques are known and available;
- biogas is produced on farms, which are situated in or near villages.

The programme includes the following items:

1. Biogas as a fuel:
   - — production characteristics;
   - — desired specifications;
   - — necessary additives.

2. Treatment of biogas:

   — as produced or washed and purified;

   — compression;

   — low-temperature liquefaction;

   — conversion into methanol and then gasification in the vehicle.

   Depending on its characteristics and the specifications it has to meet, biogas will probably have to be washed and purified to eliminate carbon dioxide and traces of sulphur and other impurities. The anti-knock properties of carbon dioxide are suitable for spark-ignition engines but may prove a nuisance in a diesel engine.

   Compression is probably the best way of using biogas on a farm vehicle and is the process with which most experience has been gained.

3. Compressor:

   — stationary on the farm, or

   — mobile to go from one farm to another.

   A mobile installation might be preferable from the point of view of total capital cost, operation and maintenance by skilled staff and safety of operation.

4. Fuel compression:

   — optimization of compression ratio;

   — shape, dimensions, type and weight of tanks;

   — location on vehicle.

   A high compression ratio increases energy consumption but reduces the volume to be transported.

5. Storage:

   — in the form of biogas or gaseous or liquid fuel;

   — volume, pressure and type of storage;

   — location.

   A certain amount of biogas must be held in reserve on the farm when biogas is processed by a mobile compression plant. Adequate space, which will depend on the size of the farm and on losses, must be available to store biogas when working in the fields is prevented by bad weather. Consideration could be given to a depot to sell surplus gas.

6. Supply to the engine:

   — mixture or biogas/diesel dual-mode operation with automatic continuous transfer from one fuel to the other;

   — spark or compression ignition;

   — modifications to the engine system (supply system, compression ratio, plastic or metal components, new equipment);

   — control of operation.

7. Engine tests:

   — on test benches (power, torque, consumption, performance, range with full fuel tank, emission, etc.);

   — in practical conditions (problems and ease of operation, influence of weather conditions, power available on drive-shafts, influence of additional weight on vehicle qualities, etc.).

8. Economic aspects:

   — market price of fuel;

   — capital costs and running costs;

   — tax and subsidies (according to national legislation).

9. Regulations:

   — safety (explosions, leakage, handling, etc.);

   — specifications (stationary and mobile tanks, fire precautions, vehicle licensing, etc.).

10. Information and training campaign:

   — production of biogas;

   — production, storage and handling of fuel;

   — operation of the agricultural vehicle.

4. Resources

The programme will call on the knowledge and experience gained and the research facilities existing or to be developed in COST countries, depending on their specific activities and interests.

5. Work plan, cost and duration of programme

A work plan has to be drawn up so that a proper selection from the items in the R, D & D programme will in the first phase lead to a value judgment on the technical and if possible economic advantages of continuing research in this field.

The duration of the first phase and its total cost (wages, equipment, travel, project leader) are estimated at 1.5 years and SFR 700 000 consisting of appropriate contributions from all the countries concerned. If the programme is continued, the duration and total cost would probably amount to 2.5 years and SFR 1 900 000.

Proposal of programme about the 'Wide cut'

THE USE OF A NEW CUT FUEL IN DIESEL ENGINES

1. Introduction

The energy required for the production of automotive fuel is mostly consumed by the refinery processes. Only straight distillation requires a minor quantity of energy.

The proposed programme is based on this consideration and on evaluation of the refinery energy saving offered by a distillation scheme, producing just one automotive fuel, wide cut (C_5-500° C), instead of two, gasoline and diesel oil. The refinery energy required for the production of such a fuel would be 500 kcal/kg compared with roughly 2000 kcal/kg of gasoline. The natural consumer of this fuel is the diesel engine. A preliminary investigation was carried out in Italy during the years 1976-1979.

2. Programme aim

The aim of the programme is to evaluate the feasibility of using such a fuel in diesel engines, as they are or suitably modified.

3. R, D & D programme elements

The study will concern the wide cut that a preliminary investigation will indicate as the best compromise between quality and product yield. The project will be divided into six parts:

1. Characterization of the C_5-500° C cuts obtainable from different crude oils;
2. Technical implications of wide cut production on the European refining set-up based on energy scenario which forecasts the development of alternative energy sources (nuclear, solar, coal, etc.) in place of heating oil;
3. Road fleet test using diesel passenger cars operated under customer driving conditions;
4. Endurance test on the dynamometer stand to verify the performance of large-displacement direct-injection truck engines;
5. Safety;
6. Investigation of the relationship between cut points range and drive ability.

1. *Characterization of the C_5-500° C cuts (wide cut)* obtained by atmospheric and vacuum distillation at high yield (about 70%) and with energy consumption much lower compared with that required for obtaining the present fuels (about 500 kcal/kg). Evaluation of the products obtainable from crude oils of different origin.

2. *Technical and economical impact of wide cut on European refining*

   Based on a refining mathematical model adapted to one or more European scenarios foreseeable for the future, the impact of the wide cut as a substitute for gasoline and diesel fuel will be examined with special regard to its possible effects in the reduction of crude oil imports.

3. *Preparation of engines and endurance tests*

The evaluation of the influence of the wide cut on the long range engine performance parameters (deposits, wear, exhaust emissions, abnormal deterioration of engine components) should be based on the following experimentation:

(a) preparation of three models of passenger car diesel engines for optimizing their operation with the wide cut;

(b) fleet test:

it is proposed that six cars of each model be employed in a 60 000 km test because this test length is considered to be the minimum for requiring major maintenance of the engines.

The following controls and measures will be performed:

— At start of test:
engine disassembly and measurement of the engine parts.

— At 0, 20 000, 40 000 and 60 000 km:

- blow-by measurement;
- smoke measurement at full load on the dynamometer stand, at steady speed and under acceleration;
- exhaust emissions according the ECE/15 cycle with fuel consumption determinations. Unconventional evaluation in the cold room.

— At end of test:
evaluation of engine deposits, with photographs, and of engine wear.

4. *Endurance bench tests of truck engines*

Duration: 500 hrs. The following controls and measurements will be performed:

— At start of test:

- engine disassembly and measurement of the engine parts;
- comparative evaluation of the performance of the engines fuelled with commercial diesel fuel and with the wide cut.

— At start of test and every 100 hrs:

- blow-by measurement;
- conventional and unconventional exhaust emissions;
- exhaust smoke.

— At end of test:
engine disassembly, evaluation of deposits, with photographs, and wear measurements.

5. *Safety*

The wide cut can be compared in first approximation to crude oil, and all aspects relative to safety in its production, transportation and use should be examined to define very accurately the explosion limits of the mixtures of the vapours in equilibrium with the liquid and air.

6. *Investigation on the relationship between cut points range and drive ability*

The relationship between cut points range and drive ability will be examined in order to find which boiling points give satisfactory drive ability results.

4. Means

The programme will draw on experience gained hitherto in the different COST countries.

5. Project schedule and costs

The project will require 42 months for completion. The total cost is estimated to be LIT 2 100 million (reference year 1980).

Memorandum of Understanding for the implementation of a European research project on the use of alternative fuels in road vehicles (COST 304)

Date of entry into force: 13.5.1982

Duration: 12.11.1985

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	30.7.1982	30.7.1982
Denmark	13.5.1982	13.5.1982
Germany (FR of)	10.6.1982	10.6.1982
Norway	13.5.1982	13.5.1982
Switzerland	11.11.1982	11.11.1982
Finland	13.5.1982	13.5.1982
Sweden	13.5.1982	13.5.1982

Memorandum of Understanding for the implementation of a European research project on the technical and economic conditions for the use of electric road vehicles

(COST Project 302)[1]

[1] Not published in the Official Journal.

Memorandum of Understanding for the implementation of a European research project on the technical and economic conditions for the use of electric road vehicles

(COST Project 302)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on the technical and economic conditions for the use of electric road vehicles have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the technical and economic conditions for the use of electric road vehicles (hereinafter referred to as 'the project').

2. The main objective of the project is to define the conditions for the use of electric road vehicles, taking account of the latest technological developments and of the socio-economic consequences of such use, in order to give the authorities responsible the information necessary for any decisions, at either national or European level, on the introduction of such vehicles.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the technical description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The project will be carried out through concerted action in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the project is estimated at approximately 10 million ECU at 1981 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

The Signatories intend to take part in the project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with other organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for inter-laboratory visits and cooperating in small-scale exchanges of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three and a half years on its signing by at least four Signatories. It may be extended by arrangement between the Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The Governments referred to in the first subparagraph and the European Communities may take part in the project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the Governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in international public law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Udfærdiget i Bruxelles, den sekstende juni nitten hundrede og toogfirs.

Geschehen zu Brüssel am sechzehnten Juni neunzehnhundertzweiundachtzig.

Ἔγινε στίς Βρυξέλλες, στίς δεκαέξη Ἰουνίου Χίλια ἐννιακόσια ὀγδόντα δύο.

Done at Brussels on the sixteenth day of June in the year one thousand nine hundred and eighty-two.

Fait à Bruxelles, le seize juin mil neuf cent quatre-vingt-deux.

Fatto a Bruxelles, addì sedici giugno millenovecentoottantadue.

Gedaan te Brussel, de zestiende juni negentienhonderdtweeëntachtig.

ANNEX I

Coordination of the project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4.1. of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the project and, in particular, for making the necessary arrangements for:

(a) the choice of research topics on the basis of those provided for in Annex II including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the project framework will be referred for an opinion to the COST Technical Committee on Transport;

(b) advising on the direction which work should take;

(c) drawing up detailed plans and defining methods for the different phases of execution of the project;

(d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;

(e) keeping abreast of the research being done in the territory of the Signatories and in other countries;

(f) liaising with appropriate international bodies;

(g) exchanging research results amongst the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;

(h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;

(i) dealing with any problem which may arise out of the execution of the project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2(g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the project.

Such licences will be granted on fair and reasonable terms having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

Technical description

1. General considerations

The energy crisis makes the electric road vehicle an object of interest mainly due to the possible use of primary energy sources other than petroleum for transport, through the use of electricity as energy supply. Other benefits include load levelling, possible energy saving and reduction of nuisances (noise and air pollution). The wide diffusion of electric vehicles (EVs) depends on the total cost and, from the technical point of view, the availability of batteries with performances which should be able to afford the user adequate operational capability, or of a distribution of infrastructure capable of compensating for the operational limitations of batteries. Battery development is progressing, and can already give operational capabilities - range in particular - suitable for certain services or missions in urban areas. However, there are formidable problems of cost, in particular with regard to the costs of finalizing and launching the vehicles, and problems regarding battery life except for low-speed, short-range vehicles.

The development and experience at present at the industrial level (prototypes or small series) or at the theoretical level (market studies, studies on social aspects, economy, standards and regulations), are not based on a significant utilization to encourage manufacturers to start a large-scale introduction of EVs into the market.

2. Objective of the project

Various sectors of possible application of electric vehicles exist already with the present technology. This consideration, together with the potential benefits offered by EVs and the need to meet the problems referred to in point 1 above, makes a significant introduction of EVs opportune at the moment.

The extent of the penetration of the EV has to be correlated with a 'cost-benefit' analysis involving the various aspects and situations on which the introduction of EVs will have an impact.

The analysis should be extended to social benefits, such as reduction of air pollution and noise abatement, which are in the interests of the whole community but are often left out of account by the users of vehicles.

The whole objective of Project 302 is to explore the various aspects of the problem in order to supply the governments with the necessary elements to evaluate the extent of commercial penetration and for establishing the necessary action according to a coordination concept at European level, with appropriate time-scales and milestones.

3. Preparation of the project

In accordance with the objective referred to in point 2 and with what was outlined by the Technical Committee, the project shall consist of two phases:

I. Evaluation of the state of the art, present and future programmes with particular emphasis on the costs and benefits of a significant introduction of EVs, and recommendations;

II. Action to be taken by the governments to eliminate obstacles for EV distribution, in particular on the basis of what will arise from Phase I, and recommendations for future R & D activities.

The basis for Phase I activity is the document from the Technical Subcommittee entitled *Data and comments on the existing situation in the various countries* (COST/223/81). It concerns the present situation, the available information on past and present applied research and projected future industrial developments in terms of:

— vehicles for the transport of passengers (cars);

— light commercial vehicles;

— large-capacity public transport vehicles (all-electric and hybrids);

— small-capacity public transport vehicles;

— special purpose vehicles;

— fleets;

— components;

— infrastructures.

In addition, the document contains a preliminary outline of advantages and drawbacks of the large-scale introduction of EVs. On this basis, the proposed working programme has been defined as follows.

4. Programme for Phase I

Phase I should be devoted to those actions aiming at the following tasks:

— study of the impact of the introduction of EVs, in terms of cost/benefit evaluation, and according to various penetration scenarios. As part of this task, an assessment of the actual figures relating to EVs — technical and economical, present and potential — should be made, as well as an analysis of the requirements for utilization of EVs;

— identification of weak points in the technology and of necessary R & D activities.

The intention is to provide methodology, illustrated by appropriate examples using particular data, to enable governments to determine the impact of EVs in their respective national circumstances. The methodological problem should be examined in full. There will be many peripheral aspects which governments may not have, in the event, the inclination or the information to pursue. But in this work, all aspects should be examined if it is wished to determine precisely which aspects are merely peripheral.

The specific areas to be examined are as follows:

4.1. *Study of impact*

The impact of the introduction of EVs has to be considered related to the following aspects:

— Energy: fuel substitution and load levelling;

— Environment: air pollution and noise;

— Production: industry and primary materials;

— Utilization: traffic/parking, social, safety, infrastructure and, in general, adaptability to use.

As a base for evaluation it is expected that it will be necessary to assume alternative scenarios for the penetration of EVs. (Short-term penetration will depend on governmental policies and certain external events.) However it will also be necessary to examine other influential factors, such as:

4.1.1. Mission analysis of the vehicles (or analysis of their mobility) for the following vehicle types:

— cars;

— commercial vehicles;

— small-capacity public transport vehicles;

— large-capacity public transport vehicles.

4.1.2. Performance capabilities of these vehicles according to present and future state of the art. The main opportunity for performance improvement will be given by the batteries, therefore the analysis will be based on the following battery types:

- lead-acid batteries;
- nickel batteries;
- high temperature advanced batteries (e.g. NA/S);
- other advanced batteries (e.g. Zc/Chl);
- impact of fuel cells and on-board electricity generators should also be considered.

A non-negligeable influence is also given by the propulsion system, in particular by commutatorless machines and transistor controllers, and should be evaluated in association with advanced batteries.

4.1.3. Potential penetration of EVs of the types referred to in 4.1.1. according to adaptability to use. Two classes of scenarios of potential penetration of EVs will be considered:

(1) Overnight charging and 'biberonage' (opportunity charging) with:

(a) present batteries,

(b) batteries with improved energy density for extension to suburban use;

(2) Means for extending EV range to intercity use: battery exchanges or other.

On the basis of the potential penetration levels, the following aspects will be evaluated, in comparison with non-penetration of EVs.

4.1.4. Energy: The overall aim is to provide and illustrate the means necessary for evaluating, taking into account the existing situation in each country, the influence on the energy system in terms of:

- energy requirement modification due to partial replacement of petroleum in the transport sector,
- load levelling effect on the electrical power system,
- overall energy balance.

The procedure for these evaluations will include:

(1) Analysis of energy consumption of EVs, based on energy consumption measured in the following conditions:

  (a) present state of the question, taking as a reference the data arising from existing demonstration programmes, also taking account of medium- and long-term technology for batteries;

  (b) technical development of regenerative braking;

(2) evaluation of the degree of imported oil replacement and overall energy conservation including the case of advanced fuel efficient ICE vehicles powered by synfuel, and the case of EVs powered by combined heat/power plant;

(3) analysis of possible influence of changes of primary energy sources on balance of trade;

(4) Evaluation of load levelling effect;

(5) Possible evaluation of energy demand for manufacturing EVs and batteries.

4.1.5. Environment: The overall aim is to provide and illustrate means of evaluating, taking into account the existing situation in different countries, the influence of introduction of EVs on pollution in cities and on pollution by power station level. This evaluation of pollution reduction will be based on the data referred to in point 4.1.3. and will be concerned with the various levels of possible penetration:

(1) evaluation of pollution by power plants, taking into account its distribution in time (in terms of daily and seasonal load variations);

(2) evaluation of urban air pollution reduction;

(3) evaluation of noise level reduction in urban areas.

4.1.6. Industry: Means should be provided and illustrated for evaluating the industrial impact according to scenarios appearing in point 4.1.3. The following aspects will be analysed:

- financial requirements;
- balance of trade;
- employment profile;
- technological progress;
- identification of pollution sources linked to the production of EVs and batteries.

4.1.7. Primary materials availability: An analysis will be carried out concerning:

- primary materials resources;
- recycling opportunities.

4.1.8. Traffic: A study will be carried out on:

- the compatibility of EVs with normal traffic, mainly urban;
- the impact of introduction of EVs in zones in which the use of ICE vehicles is restricted for air pollution and noise reasons.

4.1.9. Safety: All aspects of safety concerned with the introduction of EVs will be studied under the following headings:

1. Safety of driver and passengers:

   e.g.: — vehicle response: steering — braking — road holding;

   — danger from collision: acid — fire — weight of vehicle — speed (kinetic energy).

2. Safety of other road users:

   e.g.: — pedestrians: silent approach;

   — motorists: collision with EVs — speed — mass — acid spillage;

   — general public: charging arrangements — in public places — risks for children.

4.1.10. In the case of recharge at off-peak hours EVs can be operated, if equipped with on-board battery charger, with limited additional infrastructures. An estimate will be made of the extent to which this is feasible within the scenarios mentioned above for the various categories of vehicle. A technical and economic evaluation, taking account of energy production and distribution restraints, may be made in the case of:

- rapid battery exchange;
- 'biberonage'.

4.1.11. Adaptability to use (benefits/drawbacks): The aim of this should be to ascertain the level of correspondence of the operational response of the electric vehicle with respect to service requirements. The study should be based on the ongoing and future demonstration programmes. A common, or comparable methodology should be established for this purpose among the ongoing and programmed demonstrations. The following points will be highlighted:

- operability;
- sturdiness;
- maintenance requirements;
- driver acceptance;
- use cost.

4.2. *Research and development and demonstration (R & D & D) needs*

The aim of this study is to establish the possible weak points in the field of R & D & D and, if necessary, to make recommendations. The starting point will be ongoing and future R & D & D programmes. (Some of which fall within the framework of DG XII and DG XVII of the Commission of the European Communities.)

4.2.1. Technical contribution through tests, and demonstration: The data among ongoing and future research and demonstration programmes will provide evidence to the future R & D & D needs for subsystems and components, as well as for vehicles as total systems. In this respect, points 5.2.1. and 5.2.2. are items already identified.

5. Programme for Phase II

Phase I, study and collection of data, will give an indication of the extent to which EVs have to penetrate to have a positive impact in terms of cost-benefits balance. The aim of Phase II is to define action that governments could initiate in order to eliminate obstacles to the introduction of EVs.

Part of Phase II activities, which are independent of penetration extent, can be run in parallel with Phase I.

Phase II will be prepared according to the schedule below:

5.1. *Definition of standardization problems*

5.1.1. Standards for EV type approval;

5.1.2. Standards for components characterization;

5.1.3. Standards for energy consumption measurement;

5.1.4. Performance standards for EV compatibility with other traffic.

5.2. *Collection and interpretation of results from technology development*

5.2.1. Development of new propulsion systems;

5.2.2. Improvement of energy storage (in particular, performance, yield, life expectancy and gauging of available energy).

5.3. *Survey of market demonstration*

5.3.1. Light commercial vehicles;

5.3.2. Urban buses;

5.3.3. Study on daily rental systems for electric passenger cars (possibility of use by individuals without purchasing);

5.3.4. Others.

5.4. *Definition of direct incentives*

5.4.1. Financial concessions (to cover the difference in costs of acquisition) for gradual introduction into particular sectors.

Incentives to be given to:

- private organizations;
- public utilities;
- town and city councils.

5.4.2. Special authorization (use of EVs in areas banned to existing private traffic).

5.4.3. Special tax legislation.

5.4.4. Others.

6. Working method and timetable

Phase I: two years

The method adopted for the implementation of Phase I will involve the execution of the following activities in the order given below:

(a) The Swedish delegation will send the other participating delegations a reference document constituting an analysis of most of the questions covered by the Project 302 programme;

duration: six months

(b) On the basis of its national activities, each participating country will submit comments and propose additions in respect of this document;

duration: six months

(c) An ad hoc working party will present a full account of these national contributions;

duration: six months

(d) The Management Committee will summarize the results and draw the relevant conclusions.

duration: six months

Phase II: two years, commencing 18 months after the start of Phase I.

Phase II will be defined in detail when the preliminary results from Phase I are available.

7. Means

The project will be implemented mainly through contributions from each participating country on the basis of its national activities and programmes.

The total cost of the project can be estimated at approximately 10 million ECU, representing the national activities and programmes on which the project is based.

8. Cooperation

The project will be implemented by coordinating the activities of the participating countries.

The basis of the coordination structure will be a Management Committee.

Memorandum of Understanding for the implementation of a European research project on the technical and economic conditions for the use of electric road vehicles (COST 302)

Date of entry into force: 16.6.1982

Duration: 15.12.1985

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	15.12.1982	15.12.1982
Denmark	16.6.1982	16.6.1982
Germany (FR of)	16.6.1982	16.6.1982
France	18.11.1982	18.11.1982
United Kingdom	16.6.1982	16.6.1982
Austria	14.12.1982	14.12.1982
Switzerland	30.11.1982	30.11.1982
Finland	15.12.1982	15.12.1982
Sweden	16.6.1982	16.6.1982

Community-COST Concertation Agreement on a concerted action project in the field of treatment and use of sewage sludge

(COST Project 68 ter)[1]

[1] OJ L 388, 31.12.1981, p. 38.

Community-COST Concertation Agreement on a concerted action project in the field of treatment and use of sewage sludge

(COST Project 68 ter)

The European Economic Community,

hereinafter referred to as 'the Community',

the signatory States to this Agreement,

hereinafter referred to as the 'participating non-Member States',

Whereas a European concerted research action project in the field of treatment and use of sewage sludge is likely to contribute effectively to the reduction of environmental pollution and to a more economic use of natural resources;

Whereas a Community-COST Concertation Agreement on a concerted action project in the field of treatment and use of sewage sludge (COST Project 68 bis) was concluded between the Community and some non-Member States involved in European Cooperation in the field of Scientific and Technical Research (COST) on 26 July 1979 and expired on 18 October 1980;

Whereas the abovementioned concerted action project has produced very encouraging results;

Whereas, by its Decision of 3 March 1981, the Council of the European Communities adopted a sectoral research and development programme in the field of environment (environmental protection and climatology) — indirect and concerted actions — (1981 to 1985) including a new concerted action project on the treatment and use of sewage sludge to be carried out during the period 1 January 1981 to 31 December 1983;

Whereas the Member States of the Community and the participating non-Member States, hereinafter referred to as 'the States', intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex A and are prepared to integrate such research into a process of concertation which they consider will be of mutual benefit;

Whereas the implementation of the research covered by the concerted action project will require a financial contribution of approximately 10 million ECU from the States,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the participating non-Member States, hereinafter referred to as 'the Contracting Parties', shall participate for the period 1 January 1981 to 31 December 1983 in a concerted action project in the field of treatment and use of sewage sludge.

This project shall consist in concertation between the Community concerted action programme and the corresponding programmes of the participating non-Member States. Research areas covered by this Agreement are listed in Annex A.

The States shall remain entirely responsible for the research carried out by their national institutions or bodies.

Article 2

Concertation between the Contracting Parties shall be effected through a Community-COST Concertation Committee, hereinafter referred to as 'the Committee'.

The Committee shall draw up its rules of procedure. Its Secretariat will be provided by the Commission of the European Communities, hereinafter referred to as 'the Commission'.

The terms of reference and the composition of this Committee are defined in Annex B.

Article 3

In order to ensure optimum efficiency in the execution of this concerted action project, a project leader may be appointed by the Commission in agreement with the Committee.

Article 4

The maximum financial contribution by the Contracting Parties to the coordination costs shall be:

— 200 000 ECU from the Community;

— 20 000 ECU from each participating non-Member State for the period referred to in the first paragraph of Article 1.

The ECU is that defined by the Financial Regulation in force applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

The rules governing the financing of the Agreement are set out in Annex C.

Article 5

1. Through the Committee, the States shall exchange all useful information resulting from the execution of the research covered by the concerted action project. They shall also endeavour to provide information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if the State which provides it so requests.

2. In agreement with the Committee, the Commission shall prepare annual progress reports on the basis of the information supplied and shall forward them to the States.

3. At the end of the concertation period, the Commission shall, in agreement with the Committee, forward to the States a general report on the execution and results of the project. This report shall be published by the Commission not later than six months after it has been forwarded, unless a State objects. In that case the report shall be treated as confidential and shall be forwarded, on request and with the agreement of the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the concerted action project.

Article 6

1. This Agreement shall be open for signature by the Community and by the non-Member States of that Community which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971.

2. As a condition precedent to its participation in the concerted action project defined in Article 1, each of the Contracting Parties shall, after signing this Agreement, have notified the Secretary-General of the Council of the European Communities not later than 30 June 1982 of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

3. For the Contracting Parties which have transmitted the notification provided for in paragraph 2, this Agreement shall come into force on the first day of the month following that in which the Community and at least one of the participating non-Member States transmitted these notifications.

For those Contracting Parties which transmit the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was transmitted.

Contracting Parties which have not transmitted this notification when this Agreement comes into force shall be able to take part in the work of the Committee without voting rights until 30 June 1982.

4. The Secretary-General of the Council of the European Communities shall inform each of the Contracting Parties of the notifications provided for in paragraph 2 and of the date of entry into force of this Agreement.

Article 7

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities which shall transmit a certified copy to each of the Contracting Parties.

ANNEX A

Research areas covered by the Agreement

1. **Sludge stabilization and odour problems:**
   - — definition and determination of 'degree of stability' and relation to odour nuisance;
   - — comparative evaluation of stabilization procedures.

2. **Problems related to sludge dewatering:**
   - — research on water binding forces;
   - — development and standardization of methods for the assessment of dewatering properties;
   - — problems related to the use of flocculants;
   - — comparative evaluation of thickening and dewatering equipment.

3. **Analytical problems related to sludge treatment and use:**
   - — characterization of pathogens and evaluation of disinfection procedures;
   - — characterization and determination of pollutants (heavy metals, persistent organic compounds) in sludge and development of standardized analytical methods.

4. **Environmental problems related to sludge use:**
   - — special processing of sludge for agricultural use (e.g. composting) including the improvement of disinfection procedures and pollutant removal;
   - — transfer of pollutants to plants and harmful effects on vegetation;
   - — effects of long-range sludge application on soil quality and ground water;
   - — optimum land use of sludge, including sludge from dephosphatation plants.

ANNEX B

Terms of reference and composition of the Community-COST Concertation Committee on treatment and use of sewage sludge

1. The Committee shall:

1.1. contribute to the optimum execution of the concerted action project by giving its opinion on all of its aspects;

1.2. evaluate the results of the project and draw conclusions as to their application;

1.3. be responsible for the exchange of information referred to in Article 5 (1) of the Agreement;

1.4. suggest guidelines to the project leader.

2. The Committee's reports and opinions shall be forwarded to the States.

3. The Committee shall be composed of one delegate from the Commission, as co-ordinator of the Community concerted action project, one delegate from each participating non-Member State, one delegate from each Member State representing its national programme, and the project leader. Each delegate may be accompanied by experts.

ANNEX C

Financing rules

Article 1

These provisions lay down the financial rules referred to in Article 4 of the Community-COST Concertation Agreement on a concerted action project in the field of treatment and use of sewage sludge (COST Project 68 ter).

Article 2

At the beginning of each financial year, the Commission shall send to each of the participating non-Member States a call for funds corresponding to its share of the annual co-ordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in ECU and the currency of the participating non-Member State concerned, the value of the ECU being defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

Each participating non-Member State shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the participating non-Member State concerned at a rate equal to the highest discount rate ruling in the States on the due date.

The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is effected more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by participating non-Member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of the revenue of the budget of the Commission.

Article 4

The provisional timetable for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation in force applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the participating non-Member States for information.

Annex to ANNEX C

PROVISIONAL TIMETABLE FOR THE CONCERTED ACTION PROJECT

'Treatment and use of sewage sludge'
(COST project 68 ter)

(ECU)

	1981		1982		1983		Total	
	AC	AP	AC	AP	AC	AP	AC	AP
1. Initial estimate of overall requirements								
— Staff	—	—	—	—	—	—	—	—
— Administrative operating expenditure	70 000	70 000	70 000	70 000	60 000	60 000	200 000	200 000
— Contracts	—	—	—	—	—	—	—	—
TOTAL	70 000	70 000	70 000	70 000	60 000	60 000	200 000	200 000
2. Revised estimate of expenditure taking into account additional requirements arising from the accession of participating non-Member States								
— Staff	—	—	—	—	—	—	—	—
— Administrative operating expenditure	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$60\,000\left(1+\frac{n}{10}\right)$	$60\,000\left(1+\frac{n}{10}\right)$	$200\,000\left(1+\frac{n}{10}\right)$	$200\,000\left(1+\frac{n}{10}\right)$
— Contracts	—	—	—	—	—	—	—	—
NEW TOTAL	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$70\,000\left(1+\frac{n}{10}\right)$	$60\,000\left(1+\frac{n}{10}\right)$	$60\,000\left(1+\frac{n}{10}\right)$	$200\,000\left(1+\frac{n}{10}\right)$	$200\,000\left(1+\frac{n}{10}\right)$
3. Difference between (1) and (2) to be covered by contribution from participating non-Member States	$\frac{n}{10}$ 70 000	$\frac{n}{10}$ 70 000	$\frac{n}{10}$ 70 000	$\frac{n}{10}$ 70 000	$\frac{n}{10}$ 60 000	$\frac{n}{10}$ 60 000	$\frac{n}{10}$ 200 000	$\frac{n}{10}$ 200 000

n = number of participating non-Member States.
AC = account credited.
AP = account paid.

Community COST Concertation Agreement on a concerted action project in the field of treatment and use of sewage sludge (COST 68 ter)

Decision of Community programmes: 3.3.1981

Date of entry into force: 1.7.1982

Duration: 31.12.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	16.2.1982	1.7.1982
Norway	16.2.1982	[1]
Austria	20.4.1982	28.1.1983
Switzerland	29.6.1982	1.7.1982
Finland	16.2.1982	1.7.1982
Sweden	22.4.1982	1.7.1982

[1] Norway has not ratified this Agreement.

Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of the recycling of urban and industrial waste

(Recycling)[1]

[1] OJ L 174, 21.6.1982, p. 30.

Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of the recycling of urban and industrial waste

(Recycling)

The European Economic Community,

hereinafter referred to as 'the Community'

and

The Government of the Kingdom of Sweden,

hereinafter referred to as 'Sweden',

Whereas a European research programme in the field of urban and industrial waste is likely to contribute to a more economic use of natural resources as well as to a reduction of environmental pollution by helping to solve technical problems arising in waste management;

Whereas, by its Decision of 12 November 1979, the Council of the European Communities, hereinafter referred to as 'the Council', adopted a multiannual (1979 to 1983) research and development programme in the field of the recycling of urban and industrial waste (secondary raw materials), hereinafter referred to as 'the Community programme';

Whereas, by its Decision of 27 May 1981, the Swedish Parliament adopted a third multiannual (1981 to 1984) energy research and development programme including the field of the recycling of urban and industrial waste;

Whereas the Community and Sweden expect to derive mutual benefit from a coordination of the research and development work which they carry out in the field of the recycling of urban and industrial waste;

Whereas on 18 July 1978 the Council agreed on certain details of cooperation within the framework of European Cooperation in the field of Scientific and Technical Research (COST),

HAVE AGREED AS FOLLOWS:

Article 1

The Community and Sweden, hereinafter referred to as the 'Contracting Parties', shall cooperate for a period extending until 31 October 1983, in a European research and development programme in the field of the recycling of urban and industrial waste (indirect actions and coordinated activities), hereinafter referred to as the 'European programme', as described in Annexes A and B.

Article 2

The maximum financial contribution by the Contracting Parties to the implementation of the European programme shall be 9 285 000 ECU to be divided as follows:

— 9 million ECU

from the Community for a four-year period beginning on 1 November 1979;

— 285 000 ECU

from Sweden for the period referred to in Article 1. This amount is calculated by applying to the Community contribution the ratio between the gross domestic product of Sweden and the gross domestic product of the Community and of Sweden for 1979, and by taking into account the ratio between the duration of this Agreement and that of the Community programme.

The ECU is that defined in the Financial Regulation applicable to the general budget of the European Communities and in the financial provisions adopted pursuant to that Regulation.

The rules governing the financing of this Agreement are set out in Annex C.

Article 3

For Swedish persons and undertakings, the terms and conditions for the submission and evaluation of proposals, as well as for the granting and conclusion of shared-cost contracts, shall be the same as those applied for Community persons and undertakings.

Article 4

The Commission of the European Communities, hereinafter referred to as 'the Commission', shall ensure the implementation of the indirect actions listed in Annex A and be responsible for the coordination of the activities listed in Annex B.

The Advisory Committee of the Community Programme, hereinafter referred to as 'the Committee', shall be enlarged to include representatives appointed by Sweden not exceeding three in number.

The terms of reference and the composition of the Committee are defined in accordance with the Council resolution of 18 July 1977 on advisory committees on research programme management, appearing in Annex D.

Article 5

The European programme shall be reviewed at the end of 1982; this review may result in a revision of the programme in accordance with the appropriate procedures after the Committee has been consulted.

Article 6

Information resulting from the execution of the indirect actions listed in Annex A shall be disseminated in accordance with the Council Regulation of 17 September 1974 adopting provisions for the dissemination of information relating ro research programmes for the European Economic Community. The rights and obligations of Sweden and Swedish persons and undertakings shall be the same as those laid down by the above Regulation for Member States and persons and undertakings which pursue a research or production activity on the territory of a Member State.

Article 7

1. In accordance with a procedure laid down by the Commission after having consulted the Committee, Sweden and the Member States of the Community taking part in the activities listed in Annex B (hereinafter referred to as 'the participating States') and the Community shall regularly exchange all useful information resulting from the execution of the research covered by such activities. The participating States shall provide the Commission with all information relevant for coordination purposes. They shall also endeavour to provide the Commission with information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if so requested by the participating State which provides it.

2. The Commission shall prepare annual progress reports on the basis of the information supplied and forward them to the participating States.

3. At the end of the coordination period the Commission, after having consulted the Committee, shall forward to the participating States a comprehensive report on the execution and results of the coordinated activities. The Commission shall publish this report within six months after it has been sent to the participating States, unless one of them objects. In that case, the report shall be treated as confidential and shall be forwarded, after consultation with the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the coordinated activities.

Article 8

The Contracting Parties shall consult with each other, if one of them so requests, on any problem arising out of the application of this Agreement.

Article 9

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied, under the conditions laid down in that Treaty, and, on the other hand, to the territory of the Kingdom of Sweden.

Article 10

1. As soon as possible after signing this Agreement, each of the Contracting Parties shall notify the Secretary-General of the Council of the European Communities of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. This Agreement shall enter into force on the first day of the month following that in which the second of the Contracting Parties forwards the notification referred to in paragraph 1.

Prior to the entry into force of this Agreement, Sweden may take part in the work of the Committee.

3. For a period of six months following its entry into force, this Agreement shall be open for accession by other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971. The instruments of accession shall be deposited with the General Secretariat of the Council of the European Communities.

A State which accedes to this Agreement shall become a Contracting Party within the meaning of Article 1 on the date on which the instrument of accession is deposited and references to 'Sweden' and 'Swedish' in Articles 3, 4, 6, 7 and 9 shall be construed as references to that acceding State also.

Each acceding State shall contribute to the implementation of the programme under the same conditions laid down in Article 2 concerning Sweden.

4. The Secretary-General of the Council of the European Communities shall notify each of the Contracting Parties of the lodging of the notifications referred to in paragraph 1, of the date of entry into force of this Agreement and of the deposit of the instruments of accession referred to in paragraph 3.

Article 11

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

ANNEX A

Research and development programme

Research topics	Activities to be coordinated	Indirect actions
RESEARCH AREA I		
Sorting of household waste		
1. Assessment of waste sorting projects	×	—
2. Methods for sampling and analysis of household waste	×	—
3. Evaluation of health hazards	×	—
4. Technology for the sorting of bulk waste	×	×
5. Materials recovery		
5.1. Paper	×	×
5.2. Plastics	×	×
5.3. Non-ferrous metals	×	—
6. Energy recovery	×	×
7. New collection and transport systems	×	—
RESEARCH AREA II		
Thermal treatment of waste		
1. Firing of waste derived fuel	See I.6	See I.6
2. Pyrolysis and gasification	×	×
3. Recovery of metal and glass from residue	×	—
RESEARCH AREA III		
Fermentation and hydrolysis		
1. Anaerobic digestion	×	×
2. Carbohydrate hydrolysis	×	×
3. Composting	×	—
RESEARCH AREA IV [1]		
Recovery of rubber waste		
1. Retreading	×	—
2. Size reduction	×	—
3. Reclaiming and recycling of rubber powder	×	—
4. Pyrolysis	×	—

Allocation of resources for the guidance of the Commission and the Committee for the execution of the programme:

I: 45%—50%
II: 15%—25%
III: 20%—40%
IV:[1] 5%—15%

[1] The possibility of indirect actions in this area will be reviewed in the light of experience. If such actions are decided upon the minimum allocation for research area IV will need to be raised to 10%.

ANNEX B

Activities to be coordinated

Participation of the Member States and Sweden per research topic

Research topics	Allocation of activities to be coordinated								
	B/L	DK	D	F	IRL	I	NL	UK	S
RESEARCH AREA I									
Sorting of household waste									
1. Assessment of waste sorting projects	×		×		×	×	×	×	
2. Methods for sampling and analysis of household waste	×	×	×	×	×	×	×	×	×
3. Evaluation of health hazards			×		×	×		×	
4. Technology for the sorting of bulk waste	×	×	×			×	×		
4.1. Air classification				×		×			
4.2. Comminution — liberation				×		×		×	
4.3. Novel separation techniques				×		×			
5. Materials recovery						×	×		×
5.1. Paper	×		×	×		×	×		×
5.2. Plastics	×	×	×	×		×	×		×
5.3. Non-ferrous metals	×		×	×		×	×		×
6. Energy recovery	×		×		×	×	×		×
7. New collection and transport systems			×			×	×		
RESEARCH AREA II									
Thermal treatment of waste									
1. Firing of waste derived fuel	×		×		×	×	×		×
2. Pyrolysis and gasification	×		×			×	×	×	×
3. Recovery of metal and glass from residue	×		×	×		×	×		
RESEARCH AREA III									
Fermentation and hydrolysis									
1. Anaerobic digestion	×	×	×	×	×	×		×	
2. Carbohydrate hydrolysis	×	×	×		×	×		×	
3. Composting	×	×	×	×		×		×	
RESEARCH AREA IV									
Recovery of rubber waste									
1. Retreading		×	×	×		×	×		
2. Size reduction			×	×		×	×		
3. Reclaiming and recycling of rubber powder			×	×		×	×		
4. Pyrolysis	×		×			×	×		

ANNEX C

Financing rules

Article 1

These provisions lay down the financial rules referred to in Article 2 of the Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to Sweden a call for funds corresponding to its share of the annual costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 2 of the Agreement.

This contribution shall be expressed both in ECU and in the currency of the State concerned, the value of the ECU being that defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the implementation costs proper.

Sweden shall pay its annual contribution to the costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in payment shall give rise to the payment of interest by Sweden at a rate equal to the highest discount rate obtaining in the participating States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is made more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by Sweden shall be credited to the relevant programme as budget receipts allocated to a heading in the statement of revenue of the budget of the Commission.

Article 4

The provisional timetable for the implementation costs referred to in Article 2 of the Agreement is appended hereto.

Article 5

The Financial Regulation applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the European programme shall be prepared and transmitted to Sweden for information.

Appendix

Provisional timetable referred to in Article 4 of Annex C

	1979 to 1981		1982		1983		1984		Total	
	AC	AP	AC	AP	AC	AP	AC	AP	AC	AP
1. Initial estimate of overall requirements										
— staff	470 700	470 700	245 000	245 000	264 000	264 000	—	—	979 700	979 700
— administrative operating expenditure	295 000	295 000	245 000	245 000	264 000	264 000	—	—	804 000	804 000
— contracts	5 010 300	2 160 300	1 263 000	1 063 000	943 000	2 472 000	—	1 521 000	7 216 300	7 216 300
TOTAL	5 776 000	2 926 000	1 753 000	1 553 000	1 471 000	3 000 000	—	1 521 000	9 000 000	9 000 000
2. Revised estimate of expenditure taking into account additional requirements arriving from the accession of Sweden										
— staff	470 700	470 700	245 000	245 000	264 000	264 000	—	—	979 700	979 700
— administrative operating expenditure	295 000	295 000	245 000	245 000	264 000	264 000	—	—	804 000	804 000
— contracts	5 010 300	2 160 300	1 463 000	1 263 000	1 028 000	2 557 000	—	1 521 000	7 501 300	7 501 300
NEW TOTAL	5 776 000	2 926 000	1 953 000	1 753 000	1 556 000	3 085 000	—	1 521 000	9 285 000	9 285 000
3. Difference between (1) and (2) to be covered by contribution from Sweden	—	—	200 000	200 000	85 000	85 000	—	—	285 000	285 000

AC = account credited.
AP = account paid.

ANNEX D

Council Resolution of 18 July 1977 on advisory committees on research programme management

THE COUNCIL OF THE EUROPEAN COMMUNITIES HEREBY ADOPTS THIS RESOLUTION:

1. Advisory committees on programme management shall be set up or, where appropriate, retained in the following areas:

A. DIRECT ACTION:[1]

— reactor safety,
— plutonium fuels and actinide research,
— measurements, standards and reference techniques (METRE) — nuclear,
— operation and utilization of the HFR reactor,
— high-temperature materials,
— informatics,
— fissile material control.

B. INDIRECT ACTION:[1]

— plutonium recycling in light-water reactors,
— energy conservation,
— geothermal energy,
— systems analysis: development of models,
— biology: health protection (radiation protection).

C. DIRECT [2] AND INDIRECT [1] ACTION:

— solar energy,
— production and utilization of hydrogen,
— environment and resources,
— reference materials and methods,
— management and storage of radioactive waste,
— fusion and plasma physics.

The non-nuclear part of the (direct action) programme 'Measurements, standards and reference techniques (METRE)' has been entrusted to the Advisory Committee on Programme Management for Reference Materials and Methods (indirect action).

The programme for the management of nuclear materials and radioactive waste (direct action) has been entrusted to the Advisory Committee on Programme Management for the Management and Storage of Radioactive Waste (indirect action).

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[1] Programme adopted by Decision 77/488/EEC, Euratom (OJ L 200, 8.8.1977, p. 4).

[2] Programmes adopted by Decisions:
— 74/642/Euratom (OJ L 349, 28.12.1974, p. 61),
— 75/406/Euratom (OJ L 178, 9.7.1975, p. 28),
— 75/510/EEC (OJ L 231, 2.9.1975, p. 1),
— 76/309/Euratom (OJ L 74, 20.3.1976, p. 32),
— 76/310/EEC (OJ L 74, 20.3.1976, p. 34),
— 76/311/EEC (OJ L 74, 20.3.1976, p. 36),
— 76/345/Euratom (OJ L 90, 3.4.1976, p. 12),
— 77/54/EEC (OJ L 10, 13.1.1977, p. 28).

The programme on thermonuclear fusion technology (direct action) has been entrusted to the Liaison Group for indirect action on fusion and plasma physics. The Joint Research Centre is a member of this group which, while continuing to carry out the tasks entrusted to it by other means, is subject to the provisions of this resolution.

The part of the programme on environment and resources (direct action) concernin renewable resources has been entrusted to the Standing Committee on Agricultural Research (SCAR).[1]

2. Without prejudice to the Commission's responsibility in the implementation of these programmes, it shall be the task of each committee to contribute, in its advisory capacity, to the best possible implementation of the programme for which it is responsible (in particular the detailed definition of projects) and to assess the results and ensure better liaison [2] between the implementation of the programmes at Community level and the corresponding research and development work being carried out in the Member States.

3. The direct action committees may be consulted by the General Advisory Committee (GAC), established by Commission Decision 71/57/Euratom [3] on draft proposals for reviewing programmes in progress and on draft proposals for future research programmes.

4. The indirect action committees shall be consulted on draft proposals for reviewing programmes in progress and on draft proposals for future research programmes as well as on the choice of 'project leaders' and the selection of the laboratories to which the work is to be entrusted.

5. Committees in fields where direct action and indirect action coexist shall ensure that both actions form a coherent whole.

6. Each committee shall deliver opinions prepared by the secretariat and submitted for the committee's approval. Any member of a committee may request that his views be recorded in these opinions. Opinions shall be forwarded to the Commission, a copy being sent to the Council.

7. Each committee shall consist of not more than:

   (a) three officials appointed by the Commission (Commission delegation);

   (b) three experts appointed, by applying whatever criteria it deems appropriate, by each of the Governments of the Member States taking part in the programme under consideration (Member States' delegations); the absence of any Government's experts shall not deprive a committee meeting of its validity.

   In exceptional circumstances derogations may be made from these provisions following agreement among the delegations.

8. Each committee shall appoint its chairman for a period of one year on a proposal from the Commission delegation.

9. Secretariat services for the committees shall be provided by Commission officials placed for this purpose at the disposal of the committee under the authority of the chairman of each committee.

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[1] OJ L 200, 8.8.1977, p. 4.
[2] The concept of 'liaison' refers solely to implementation of Community programmes and not to the coordination of national programmes.
[3] OJ L 16, 20.1.1971, p. 14.

10. Each committee shall meet in principle three times a year.

11. This resolution cancels and replaces the Council resolutions of 30 June 1969, 22 July 1972, 19 November 1973, 10 December 1973, 17 December 1974, 26 June 1975 and 22 August 1975 respectively establishing advisory committees on programme management.

Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of the recycling of urban and industrial waste (Recycling)

Decision of Community programmes: 12.11.1979

Date of entry into force: 1.7.1982

Duration: 31.10.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	16.6.1982	1.7.1982
Sweden	16.6.1982	1.7.1982

Memorandum of Understanding on the implementation of a European project on redundancy reduction techniques for coding of broadband video signals

(COST Project 211 bis)[1]

[1] Not published in the Official Journal

Memorandum of Understanding on the implementation of a European project on redundancy reduction techniques for coding of broadband video signals

(COST Project 211 bis)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on redundancy reduction techniques for coding of broadband video signals have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the field of redundancy reduction techniques for the digital transmission of 625-line colour video signals (hereinafter referred to as 'the project').

2. The main objective of the project is to examine the possibility of applying redundancy reduction techniques to the digital transmission of visual teleconferencing signals and of broadcast quality TV signals.

The possibility of standards for long distance communications including international communications are to be taken into account.

A number of compatible digital coding techniques shall be studied in order to provide optimum quality for various applications, using adequate redundancy reduction techniques, taking into account the CEPT digital transmission hierarchy.

Further, compatibility of present and future standards for visual teleconferencing and for broadcast colour TV signals should be aimed at.

Bearing in mind the divergences which might exist between the types of national networks, interfaces will be defined and selected in such a way that the equipment used for redundancy reduction may be inserted at different points in the network.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other coordinatory services or activities necessary for the aims of the project to be achieved.

Section 3

1. This Memorandum of Understanding will take effect for four years on its signing by at least four Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing, by the Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The Governments referred to in the first subparagraph and the European Communities may take part in the project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the Governments referred to in paragraph 1 or from the European Communities will be decided by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Udfærdiget i Bruxelles, den niende december nitten hundrede og toogfirs.

Geschehen zu Brüssel am neunten Dezember neunzehnhundertzweiundachtzig.

Done at Brussels on the nineth day of December in the year one thousand nine hundred and eighty-two.

Fait à Bruxelles, le neuf décembre mil neuf cent quatre-vingt-deux.

Fatto a Bruxelles, addì nove dicembre millenovecentoottantadue.

Gedaan te Brussel, de negende december negentienhonderdtweeëntachtig.

ANNEX I

Coordination of the project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the project and, in particular, for making the necessary arrangements for:

(a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the project framework will be referred for an opinion to the Telecommunications Technical Committee;

(b) advising on the direction which work should take;

(c) drawing up detailed plans and defining methods for the different phases of execution of the project;

(d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;

(e) keeping abreast of the research being done in the territory of the Signatories and in other countries;

(f) liaising with appropriate international bodies;

(g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;

(h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate; drawing up a non-confidential report to be submitted annually to the Telecommunications Technical Committee;

(i) dealing with any problem which may arise out of the execution of the project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure, paying particular attention to the exchange of confidential information.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by the Commission of the European Communities.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. Distribution of progress reports will be restricted to the representatives of the Signatories with the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2(g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

— work in respect of the project;

— research and development work within the framework of the applicant Signatory's projects in the same field;

— research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the work planned for the project

1. The participants in the project will simultaneously undertake and will coordinate research and development work with the aim of applying redundancy reduction techniques to the digital transmission of 625-line colour video signals.

They will exchange information and will compare results achieved.

2. Research work to be undertaken in the framework of the project will concentrate mainly on:

(a) investigation through non-real time computer simulation of coding techniques in conjunction with empirical hardware assessment. Each participating country may have a simulation system capable of handling colour video signals.

(b) implementation and optimization of experimental (prototype) equipments and verification of their compatibility by field trials. Each participating country may set up its own installation in order to test its own ideas and those of other countries according to criteria defined by common agreement (the concept of specifying a Minimum Agreed Codec was effective during COST 211).

(c) development of subjective and objective criteria for comparison and evaluation of coding algorithms; application of these criteria to the experimental equipment in order to evaluate its performance and gradually to evolve preferred methods.

It is intended that a major outcome of this project will be a valuable contribution towards economic solutions for transmission of video signals and the advancement of common standards throughout Europe.

3. The following work will have to be carried out in particular:

— examination of the various existing possibilities on intraframe and interframe coding (including technical, economic and organizational aspects);

— determination of up and downward compatibility of coding techniques for visual teleconferencing signals and broadcast quality colour TV signals at bitrates of the CEPT digital transmission hierarchy;

— definition of picture processing in respect of picture source and quality requirements;

— study of coding techniques with regard to multipoint teleconference requirements;

— evaluation and, where possible, measurement of the performance of corresponding systems and implementation of versatile equipment;

— optimization of the selected coding algorithms and the sub-units of the prototype equipments;

— study of efficient error protection and correction techniques;

— study of coding problems in connection with network requirements;

— selection of system parameters and establishment of compatibility through further test and field trials;

— formulation of final specifications for coding equipments.

4. The project succeeds COST 211: Redundancy reduction techniques for visual telephone signals — and retains active collaboration in the fields of hardware design, non-real time simulation and subjective studies.

The project is divided into four phases:

Phase I (18-24 months)

— Characterize source material;

— Review and establish parameters of a compatible computer simulation facility;

— Define common picture material for simulation and subjective testing;

— Review possible coding algorithms;

— Evaluate the possibility of adding colour to existing COST 211 codecs;

— Perform simulations and compare results by demonstration;

— Define a programme for future subjective testing;

— Define basic parameters for the implementation of flexible equipment.

Phase II (12-18 months)

Develop flexible hardware and software facilities in conjunction with each other and in conformity with the results of Phase I.

Phase III (12 months with some overlapping with Phase II)

Evaluate and optimize the codecs through subjective testing and field trials.

Phase IV (3-6 months)

Review hardware and simulation results and formulate final specifications for coding equipments.

Memorandum of Understanding on the implementation of a European project on redundancy reduction techniques for coding of broadband video signals (COST 211 bis)

Date of entry into force: 9.12.1982

Duration: 8.12.1986

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Denmark	9.12.1982	9.12.1982
France	9.12.1982	9.12.1982
Netherlands	9.12.1982	9.12.1982
United Kingdom	9.12.1982	9.12.1982
Sweden	9.12.1982	9.12.1982

Synoptic tables of the other COST projects in force on 1 January 1981

The texts of the projects signed prior to 1 January 1981 are contained in Volume 1 of the Collected COST Agreements (1971-1980).

Agreement on the implementation of a European concerted action project in the field of metallurgy on the topic 'Materials for gas turbines' (COST 50/51/52)[1]

Date of entry into force: 1.7.1972

Duration: 30.6.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
ECSC	23.11.1971	[2]
EAEC	23.5.1978	23.5.1978
Belgium	19.12.1973	4.3.1976
Germany (FR of)	23.11.1971	1.7.1972
France	23.11.1971	1.7.1972
Italy	23.11.1971	4.9.1974
Luxembourg	23.11.1971	9.2.1973
Netherlands	23.11.1971	9.4.1973
Austria	23.11.1971	9.8.1972
Switzerland	23.11.1971	1.7.1972
Sweden	23.11.1971	1.7.1972
United Kingdom	23.11.1971	1.7.1972

[1] COST Projects, Vol. 1, p. 13.
[2] The ECSC never ratified this Agreement.

Convention establishing the European Centre for Medium-Range Weather Forecasts (COST 70)[1]

Date of entry into force: 1.10.1975

Duration: unlimited

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	7.5.1973	1.10.1975
Denmark	7.5.1973	1.10.1975
Germany (FR of)	7.5.1973	1.10.1975
France	7.5.1973	1.10.1975
Ireland	7.5.1973	1.10.1975
Italy	7.5.1973	1.9.1977
Netherlands	7.5.1973	1.10.1975
United Kingdom	7.5.1973	1.10.1975
Greece	7.5.1973	1.9.1976
Spain	7.5.1973	1.10.1975
Yugoslavia	7.5.1973	1.10.1975
Austria	7.5.1973	1.10.1975
Portugal	7.5.1973	1.1.1976
Switzerland	7.5.1973	1.10.1975
Finland	7.5.1973	1.10.1975
Sweden	7.5.1973	1.10.1975
Turkey	2.11.1975	1.5.1976

[1] COST Projects, Vol. 1, p. 87.

Research programme for a joint project in the field of materials for superconducting electrical machines (COST 56)[1]

Date of entry into force: 10.6.1976

Duration: 9.6.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Austria	10.6.1976	10.6.1976
Switzerland	10.6.1976	10.6.1976

[1] COST Projects, Vol. 1, p. 109.

Memorandum of Understanding
on the implementation of a European project
on redundancy reduction techniques for visual telephone signals
(COST 211)[1]

Date of entry into force: 31.3.1977

Duration: 30.3.1980[2]

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	31.3.1977	31.3.1977
Germany (FR of)	31.3.1977	31.3.1977
France	31.3.1977	31.3.1977
Italy	1.2.1978	1.2.1978
Netherlands	18.5.1977	18.5.1977
United Kingdom	31.3.1977	31.3.1977
Sweden	31.3.1977	31.3.1977

[1] COST Projects, Vol. 1, p. 119.
[2] Extended until 30.3.1982.

Memorandum of Understanding on the implementation of a European project on electronic traffic aids on major roads (COST 30)[1]

Date of entry into force: 18.5.1977

Duration: 30.3.1980[2]

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	16.1.1978	16.1.1978
Belgium	31.3.1977	31.3.1977
Germany (FR of)	31.3.1977	31.3.1977
France	31.3.1977	31.3.1977
Italy	31.3.1977	31.3.1977
Netherlands	18.5.1977	18.5.1977
United Kingdom	31.3.1977	31.3.1977
Spain	16.7.1982	16.7.1982
Yugoslavia	6.6.1978	6.6.1978
Austria	31.3.1977	31.3.1977
Switzerland	31.3.1977	31.3.1977
Finland	31.3.1977	31.3.1977
Sweden	31.3.1977	31.3.1977

[1] COST Projects, Vol.1, p. 129.
[2] Extended until 30.3.1984.

Memorandum of Understanding
for the implementation of a European project
on optical fibre communication systems
(COST 208)[1]

Date of entry into force: 15.12.1977

Duration: 14.12.1980[2]

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	14.6.1978	14.6.1978
Denmark	14.6.1978	14.6.1978
Germany (FR of)	15.12.1977	15.12.1977
France	15.12.1977	15.12.1977
Ireland	15.12.1977	15.12.1977
Italy	15.12.1977	15.12.1977
Netherlands	14.6.1978	14.6.1978
United Kingdom	15.12.1977	15.12.1977
Spain	15.12.1977	15.12.1977
Switzerland	19.5.1978	19.5.1978
Finland	19.5.1978	19.5.1978
Sweden	15.12.1977	15.12.1977

[1] COST Projects, Vol. 1, p. 155.
[2] Extended until 14.12.1983.

Memorandum of Understanding
for the implementation of a European research project
on benthic coastal ecology
(COST 47)[1]

Date of entry into force: 5.4.1979

Duration: 4.4.1984

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	28.11.1980	28.11.1980
Belgium	31.7.1980	31.7.1980
Denmark	5.4.1979	5.4.1979
Germany (FR of)	5.4.1979	5.4.1979
France	5.4.1979	5.4.1979
Ireland	5.4.1979	5.4.1979
Netherlands	22.5.1980	22.5.1980
United Kingdom	5.4.1979	5.4.1979
Spain	27.5.1980	27.5.1980
Norway	22.5.1980	22.5.1980
Portugal	8.4.1982	8.4.1982
Sweden	5.4.1979	5.4.1979

[1] COST Projects, Vol. 1, p. 165.

International Agreement on the setting up of an experimental European network of ocean stations (COST 43)[1]

Date of entry into force: 29.6.1979

Duration: 28.6.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	14.6.1978	14.6.1978
Denmark	15.12.1977	29.6.1979
France	15.12.1977	29.6.1979
Ireland	15.12.1977	29.6.1979
Netherlands	14.1.1982	14.1.1982
United Kingdom	15.12.1977	29.6.1979
Spain	10.4.1981	10.4.1981
Iceland	24.3.1981	24.3.1981
Norway	15.12.1977	29.6.1979
Portugal	15.12.1977	29.6.1979
Finland	15.12.1977	29.6.1979
Sweden	15.12.1977	29.6.1979

[1] COST Projects, Vol. 1, p. 175.

Memorandum of Understanding for the implementation of a European research project on methods for planning and optimization of telecommunications networks (COST 201)[1]

Date of entry into force: 14.12.1979

Duration: 13.12.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	14.12.1979	14.12.1979
Germany (FR of)	27.3.1980	27.3.1980
France	14.12.1979	14.12.1979
Ireland	30.4.1980	30.4.1980
Italy	15.1.1980	15.1.1980
Netherlands	14.12.1980	14.12.1980
United Kingdom	14.12.1980	14.12.1980
Portugal	15.12.1980	15.12.1980
Finland	22.5.1980	22.5.1980
Sweden	14.12.1979	14.12.1979
Turkey	17.4.1980	17.4.1980

[1] COST Projects, Vol. 1, p. 229.

Memorandum of Understanding for the implementation of a European research project on digital local telecommunications networks (COST 202)[1]

Date of entry into force: 14.12.1979

Duration: 13.12.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	14.12.1979	14.12.1979
Denmark	14.12.1979	14.12.1979
Germany (FR of)	14.12.1979	14.12.1979
France	14.12.1979	14.12.1979
Italy	15.1.1980	15.1.1980
Netherlands	14.12.1979	14.12.1979
United Kingdom	14.12.1979	14.12.1979
Yugoslavia	16.10.1981	16.10.1981
Switzerland	14.12.1979	14.12.1979
Finland	14.12.1979	14.12.1979
Sweden	14.12.1979	14.12.1979
Turkey	17.4.1980	17.4.1980

[1] COST Projects, Vol. 1, p. 239.

Memorandum of Understanding for the implementation of a European research project on measurement of precipitation by radar (COST 72)[1]

Date of entry into force: 14.12.1979

Duration: 13.12.1984

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Denmark	13.6.1980	13.6.1980
Germany (FR of)	11.12.1980	11.12.1980
France	14.12.1979	14.12.1979
Netherlands	14.12.1979	14.12.1979
United Kingdom	14.12.1979	14.12.1979
Portugal	19.11.1981	19.11.1981
Switzerland	13.6.1980	13.6.1980
Finland	14.12.1979	14.12.1979
Sweden	13.6.1980	13.6.1980

[1] COST Projects, Vol. 1, p. 251.

Memorandum of Understanding for the implementation of a European research project on mariculture (COST 46)[1]

Date of entry into force: 14.2.1980

Duration: 13.2.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	5.3.1981	5.3.1981
Denmark	23.11.1981	23.11.1981
France	14.2.1980	14.2.1980
Ireland	14.2.1980	14.2.1980
Netherlands	14.2.1980	14.2.1980
United Kingdom	14.2.1980	14.2.1980
Norway	11.6.1981	11.6.1981
Portugal	13.8.1980	13.8.1980
Finland	14.2.1980	14.2.1980
Sweden	14.2.1980	14.2.1980

[1] COST Projects, Vol. 1, p. 261.

Memorandum of Understanding for the implementation of a European research project on the production and feeding of single cell protein (COST 83/84)[1]

Date of entry into force: 27.3.1980

Duration: 26.3.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	31.7.1980	31.7.1980
Denmark	27.3.1980	27.3.1980
Germany (FR of)	27.3.1980	27.3.1980
France	27.3.1980	27.3.1980
Ireland	25.9.1980	25.9.1980
Netherlands	27.3.1980	27.3.1980
Spain	25.9.1980	25.9.1980
Yugoslavia	11.9.1981	11.9.1981
Switzerland	30.6.1980	30.6.1980
Sweden	27.3.1980	27.3.1980
Turkey	25.9.1980	25.9.1980

[1] COST Projects, Vol. 1, p. 271.

Community-COST Concertation Agreement on a concerted action project in the field of physico-chemical behaviour of atmospheric pollutants (COST 61a bis)[1]

Decision of Community programmes: 9.10.1978

Date of entry into force: 1.4.1980

Duration: 31.12.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	27.3.1980	1.4.1980
Yugoslavia	30.9.1980	30.9.1980
Austria	27.3.1980	[2]
Switzerland	30.6.1980	30.6.1980
Sweden	27.3.1980	1.4.1980

[1] COST Projects, Vol. 1, p. 283.
[2] Austria has not ratified this Agreement.

Community-COST Concertation Agreement on a concerted action project in the field of analysis of organic micropollutants in water (COST 64b bis)[1]

Decision of Community programmes: 9.10.1978

Date of entry into force: 1.4.1980

Duration: 3.11.1982

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	27.3.1980	1.4.1980
Spain	3.7.1980	3.7.1980
Yugoslavia	30.9.1980	30.9.1980
Norway	27.3.1980	[2]
Portugal	27.3.1980	[2]
Switzerland	27.3.1980	1.4.1980
Sweden	27.3.1980	1.4.1980

[1] COST Projects, Vol. 1, p. 293.
[2] Norway and Portugal have not ratified this Agreement.

Community-COST Concertation Agreement on a concerted action project on the effects of processing on the physical properties of foodstuffs (COST 90)[1]

Decision of Community programmes: 20.2.1978

Date of entry into force: 1.4.1980

Duration: 24.2.1981

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
EC	27.3.1980	1.4.1980
Switzerland	27.3.1980	1.4.1980
Finland	22.9.1980	26.9.1980
Sweden	27.3.1980	1.4.1980

[1] COST Projects, Vol. 1, p. 303.

Memorandum of Understanding for the implementation of a European research project on phased array antennas and their novel applications (COST 204)[1]

Date of entry into force: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	2.7.1981	2.7.1981
Germany (FR of)	13.11.1980	13.11.1980
Italy	24.7.1980	24.7.1980
Netherlands	23.7.1981	23.7.1981
United Kingdom	24.7.1980	24.7.1980
ESA	6.9.1982	6.9.1982
Finland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980

[1] COST Projects, Vol. 1, p. 313.

Memorandum of Understanding for the implementation of a European research project on influence of the atmosphere on radiopropagation on satellite-earth paths at frequencies above 10 GHz (COST 205)[1]

Date of entry into force: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	24.7.1980	24.7.1980
Denmark	24.7.1980	24.7.1980
Germany (FR of)	13.11.1980	13.11.1980
France	24.7.1980	24.7.1980
Italy	24.7.1980	24.7.1980
Ireland	6.5.1982	6.5.1982
Netherlands	23.7.1981	23.7.1981
United Kingdom	24.7.1980	24.7.1980
ESA	24.7.1980	24.7.1980
Austria	20.5.1981	20.5.1981
Portugal	27.10.1980	27.10.1980
Finland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980

[1] COST Projects, Vol 1, p. 325.

Memorandum of Understanding
for the implementation of a European research project
on maize as a basic feed for beef production
(COST 82)[1]

Date of entry into force: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	24.7.1980	24.7.1980
Denmark	24.7.1980	24.7.1980
Germany (FR of)	24.7.1980	24.7.1980
Netherlands	24.7.1980	24.7.1980
Spain	23.1.1981	23.1.1981
Switzerland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980
Turkey	15.5.1981	15.5.1981

[1] COST Projects, Vol. 1, p. 335.

Memorandum of Understanding
for the implementation of a European research project
on the early weaning of piglets
(COST 85)[1]

Date of entry into force: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	24.7.1980	24.7.1980
Denmark	24.7.1980	24.7.1980
Germany (FR of)	24.7.1980	24.7.1980
Ireland	15.1.1981	15.1.1981
United Kingdom	24.7.1980	24.7.1980
Spain	23.1.1981	23.1.1981
Switzerland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980

[1] COST Projects, Vol. 1, p. 345.

Memorandum of Understanding for the implementation of a European research project on mineral nutrition of basic field crops (COST 86)[1]

Date of entry into force: 25.9.1980

Duration: 24.9.1983

Contracting Parties	Date of signing by the Contracting Parties	Date of entry into force
Belgium	25.9.1980	25.9.1980
Germany (FR of)	25.9.1980	25.9.1980
Netherlands	25.9.1980	25.9.1980
Greece	11.12.1980	11.12.1980
Yugoslavia	11.9.1981	11.9.1981
Switzerland	25.9.1980	25.9.1980

[1] COST Projects, Vol. 1, p. 355.

Recapitulatory tables

These tables contain all the projects signed in 1981 and 1982 and the projects signed previously which were still in force on 1 January 1981, the latter being indicated in italics.

COST projects (Categories I and II)

Projects / Signatories	Informatics	Environmental protection			Food technology		Medical research		Recycling
	11 bis	*61a bis*	*64b bis*	68 ter	*90*	91	I	II	
Decision of Community programmes	11.9.79	*9.10.78*	*9.10.78*	3.3.81	*20.2.78*	22.10.79	9.4.81	18.3.80	12.11.79
European Communities	22.1.81	*27.3.80*	*27.3.80*	16.2.82	*27.3.80*	22.1.81	13.5.81	24.3.82	16.6.82
Spain	23.7.81		*3.7.80*			23.7.81			
Yugoslavia	6.7.81	*30.9.80*	*30.9.80*			25.7.81			
Norway	30.7.81		*27.3.80*	16.2.82					
Austria		*27.3.80*		20.4.82					
Portugal			*27.3.80*						
Switzerland		*30.6.80*	*27.3.80*	29.6.82	*27.3.80*	22.1.81	13.5.81	24.3.82	
Finland	22.1.81			16.2.82	*22.9.80*	19.5.81			
Sweden	22.1.81	*27.3.80*	*27.3.80*	22.4.82	*27.3.80*	22.1.81			16.6.82
Turkey									
Entry into force	1.2.81	*1.4.80*	*1.4.80*	1.7.82	*1.4.80*	1.2.81	1.6.81	24.3.82	1.7.82
End of the project	11.9.83	*31.12.82*	*3.11.82*	31.12.83	*24.2.81*	26.10.82	31.12.81	31.5.84	31.10.83
Category	II	II	II	II	II	II	I	I	I

COST projects (Categories III and IV)

Projects / Signatories	Telecommunications							Transport			
	201	*202*	*204*	*205*	*208*	*211*	211 bis	*30*	302	303	304
Belgium	*14.12.79*	*14.12.79*	*2.7.81*	*24.7.80*	*14.6.78*	*31.3.77*		*31.3.77*		16.6.82	
Denmark		*14.12.79*		*24.7.80*	*14.6.78*		9.12.82		16.6.82	28.9.81	13.5.82
FR of Germany	*27.3.80*	*14.12.79*	*13.11.80*	*13.11.80*	*15.12.77*	*31.3.77*		*31.3.77*	16.6.82	28.9.81	10.6.82
France	*14.12.79*	*14.12.79*		*24.7.80*	*15.12.77*	*31.3.77*	9.12.82	*31.3.77*	18.11.82	22.10.81	
Ireland	*30.4.81*			*6.5.82*	*15.12.77*						
Italy	*15.1.80*	*15.1.80*	*24.7.80*	*24.7.80*	*15.12.77*	*1.2.78*		*31.3.77*		10.6.82	
Luxembourg											
Netherlands	*14.12.79*	*14.12.79*	*23.7.81*	*23.7.81*	*14.6.78*	*18.5.77*	9.12.82	*18.5.77*			
United Kingdom	*14.12.79*	*14.12.79*	*24.7.80*	*24.7.80*	*15.12.77*	*31.3.77*	9.12.82	*31.3.77*	16.6.82	2.3.82	
Greece											
Spain					*15.12.77*			*16.7.82*			
Yugoslavia		*16.10.81*						*6.6.78*			
Norway											13.5.82
Austria				*20.5.81*				*31.3.77*	14.12.82		
Portugal	*15.12.80*			*27.10.80*							
Switzerland		*14.12.79*			*19.5.78*			*31.3.77*	30.11.82	16.12.81	11.11.82
Finland	*22.5.80*	*14.12.79*	*24.7.80*	*24.7.80*	*19.5.78*			*31.3.77*	15.12.82	28.9.81	13.5.82
Sweden	*14.12.79*	*14.12.79*	*24.7.80*	*24.7.80*	*15.12.77*	*31.3.77*	9.12.82	*31.3.77*	16.6.82		13.5.82
Turkey	*17.4.80*	*17.4.80*									
Iceland											
ESA			*6.9.82*	*24.7.80*							
EC								*16.1.78*	15.12.82		30.7.82
Entry into force	*14.12.79*	*14.12.79*	*24.7.80*	*24.7.80*	*15.12.77*	*31.3.77*	9.12.82	*31.3.77*	16.6.82	28.9.81	13.5.82
End of the project	*13.12.82*	*13.12.82*	*23.7.83*	*23.7.83*	*4.12.80*[1]	*30.3.80*[1]	8.12.86	*30.3.80*[1]	15.12.85	27.9.84	12.11.85
Category	IV	IV	IV	IV	IV	IV	IV	III	III	IV	III
Type of Agreement[3]	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU

[1] Extensions: COST 208 until 14.2.1983, COST 211 until 30.3.1982, COST 30 until 30.3.1984.
[2] COST 70 for an unlimited period.
[3] MoU = Memorandum of Understanding; Internat. = International Convention or Agreement.

Oceanography			Metallurgy and materials science			Meteorology		Agriculture			
43	*46*	*47*	*50*	*56*	501	*70*	*72*	*82*	*83/84*	*85*	*86*
14.6.78	*5.3.81*	*31.7.80*	*19.12.73*		7.10.82	*7.5.73*		*24.7.80*	*31.7.80*	*24.7.80*	*25.9.80*
15.12.77	*23.11.81*	*5.4.79*			23.11.81	*7.5.73*	*13.6.80*	*24.7.80*	*27.3.80*	*24.7.80*	
		5.4.79	*23.11.71*		23.11.81	*7.5.73*	*11.12.80*	*24.7.80*	*27.3.80*	*24.7.80*	*25.9.80*
15.12.77	*14.2.80*	*5.4.79*	*23.11.71*		23.11.81	*7.5.73*	*14.12.79*		*27.3.80*		
15.12.77	*14.2.80*	*5.4.79*				*7.5.73*			*25.9.80*	*15.1.81*	
			23.11.71		23.11.81	*7.5.73*					
			23.11.71								
14.1.82	*14.2.80*	*22.5.80*	*23.11.71*		23.11.81	*7.5.73*	*14.12.79*	*24.7.80*	*27.3.80*		*25.9.80*
15.12.77	*14.2.80*	*5.4.79*	*23.11.71*		23.11.81	*7.5.73*	*14.12.79*			*24.7.80*	
						7.5.73					*11.12.80*
10.4.81		*27.5.80*				*7.5.73*		*23.1.81*	*25.9.80*	*23.1.81*	
						7.5.73			*11.9.81*		*11.9.81*
15.12.77	*11.6.81*	*22.5.80*			23.11.81						
			23.11.71	*10.6.76*	23.11.81	*7.5.73*					
15.12.77	*13.8.80*	*8.4.82*				*7.5.73*	*19.11.81*				
			23.11.71	*10.6.76*	23.11.81	*7.5.73*	*13.6.80*	*24.7.80*	*30.6.80*	*24.7.80*	*25.9.80*
15.12.77	*14.2.80*				23.11.81	*7.5.73*	*14.12.79*				
15.12.77	*14.2.80*	*5.4.79*	*23.11.71*		23.11.81	*7.5.73*	*13.6.80*	*24.7.80*	*27.3.80*	*24.7.80*	
						2.11.75		*15.5.81*	*25.9.80*		
24.3.81											
		28.11.80	*23.5.78*		23.11.81						
29.6.79	*14.2.80*	*5.4.79*	*1.7.72*	*10.6.76*	23.11.81	*1.10.75*	*14.12.79*	*24.7.80*	*27.3.80*	*24.7.80*	*25.9.80*
28.6.83	*13.2.83*	*4.4.84*	*30.6.83*	*9.6.82*	22.11.84	[2]	*13.12.84*	*23.7.83*	*26.3.83*	*23.7.83*	*24.9.83*
IV	IV	III	III	IV	III	IV	IV	IV	IV	IV	IV
Internat.	MoU	MoU	Internat.	MoU	MoU	Internat.	MoU	MoU	MoU	MoU	MoU

ANNEX

Categories of cooperation

Council[1]

Cooperation within the COST framework (extract)

In regard to cooperation within the COST framework the Council, meeting on 18 July 1978, took the decision described below and instructed its President to forward these findings to the Chairman of the Committee of Senior Officials for Scientific and Technical Cooperation (COST) by letter:

The Council approved:

the four categories of cooperation set forth by the Commission in its communication concerning activities in the context of European cooperation in the field of Scientific and Technical Research (COST), namely:

Category I:

Community programmes, in which non-Community COST States may be involved;

Category II:

COST projects which also form the subject of a Community programme;

Category III:

COST projects where Member States participate in parallel to the Community;

Category IV:

COST projects where there is no participation by the Community.

[1] OJ C 100, 21.4.1979.

Index[1]

[1] This alphabetical index classifies and cross-references the projects according to the Contracting Parties and the subject-matter of the project.

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The texts of the Agreements are set out in chronological order, together with a synoptic table containing the significant dates and data for each Agreement.

An index and recapitulatory tables at the end of the volume and the synoptic tables relating to the Agreements published in Volume 1 and which were still in force on 1 January 1981 will make it easier to locate the Agreements by subject-matter or by participant country.

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