



Esprit

**European Strategic Programme
for Research and Development in
Information Technology**

**The Project Synopses
Information Exchange System
Volume 7 of a series of 7**

April 1988

**Directorate General XIII
Telecommunications, Information Industries and Innovation
Commission of the European Communities**

The Project Synopses
Information Exchange System
Volume 7 of a series of 7

April 1988

XIII/318/88

LEGEND

Countries

B Belgium
D Federal Republic of Germany
DK Denmark
E Spain
F France
GR Greece
I Italy
IRL Ireland
L Luxembourg
NL The Netherlands
P Portugal
UK United Kingdom

Roles

M Main Contractor
P Partner
S Sub-contractor

INDEX BY PROJECT NUMBER

Proj.No.	Title and Acronym	Page
	Introduction and Sub-Programme Overview	1
33	Research Open Systems for Europe (ROSE)	2
130	The Unix-United Aspects of the IES	4
700	ESPRIT/European Local Area Network (ELAN)	6
706	Computer Conferencing and Electronic Mail for ESPRIT (EUROKOM)	7
710	IES Support Services	9
717	Message Handling Survey and Trends for the IES User Community (HERMES)	11
718	Communications Architecture for Layered Open Systems (CARLOS)	12
719	The Obviously Required Name-Server (THORN)	13

INDEX BY ACRONYM

Acronym	Proj.No.	Title	Page
CARLOS	718	Communications Architecture for Layered Open Systems	12
ELAN	700	ESPRIT/European Local Area Network	6
EUROKOM	706	Computer Conferencing and Electronic Mail for ESPRIT	7
HERMES	717	Message Handling Survey and Trends for the IES User Community	11
ROSE	33	Research Open Systems for Europe	2
THORN	719	The Obviously Required Name-Server	13

PROJECTS WITHOUT ACRONYMS CAN BE FOUND IN THE MAIN INDEX

INFRASTRUCTURE ACTION : INFORMATION EXCHANGE SYSTEM

The Esprit Communications Infrastructure - IES

The Council decision on ESPRIT required that in addition to the work defined in the main technical areas, supporting infrastructural actions be taken, particularly that an Information Exchange System (IES) be implemented to ensure that the execution and management of the research and development projects be properly supported, and that appropriate dissemination be given to their results.

The general policy adopted hinges around the gradual development and availability of Open Systems Interconnection, (OSI), conformant computer communications products and is split into 3 fairly discrete parts :

- 1) The provision of services to the ESPRIT community.
- 2) Support for developments conforming to the International Standards Organisation (ISO) standards for OSI.
- 3) Harmonisation of standards implementations and other related Europe-wide research networking activities, in order to allow for interworking.

As part of the policy of supporting and accelerating migration to OSI, development activities were actively stimulated by the IES in order to provide OSI-conformant tools for IES users and service providers and to encourage the acceptance of OSI amongst European manufacturers. The overall objective was set, that in those areas where standards were sufficiently mature, products which would be of potential benefit to IES would be available in a time-frame allowing support to be given to other ESPRIT R & D projects.

The IES infrastructural actions were also intended to supply working services to be used by the IT R & D Community. Within one month of the initial Pilot Projects starting (the first project started work on 12/07/1983), ESPRIT had an operational electronic mail and conferencing system available called EUROKOM, based on work under the COST 11 programme. Four years later, the system is used regularly by a significant proportion of the ESPRIT community and is growing rapidly as a means of:

- Projects communicating amongst themselves.
- Projects coordinating with the CEC.
- Dissemination of information about ESPRIT norms, standards, institutional news and conference calendars in many different fields.

RESEARCH OPEN SYSTEMS FOR EUROPE (ROSE)

Project Number : 33

The aim of the project is to develop communications software for the UNIX portable operating system. The software shall conform to Open Systems Interconnection (OSI) standards, thus enhancing the possibilities of network connection and network management.

The objectives of "Research Open System for Europe" (ROSE) are to create OSI conformant communications software modules for the UNIX machines of 5 major European I.T. vendors, and demonstrate interworking over a pilot network. This project has come to represent a test environment for prototyping OSI implementations on a European scale, and the work currently being carried out covers the Network Management aspects of OSI and the planning of a major demonstration to be carried out in 1988, when the project is scheduled for completion.

The project provided major support from industry for the definition of the "Standards Promotion and Application Group" (SPAG) profiles, and inputs to the international standards definition process. In the current ROSE pilot network, about 20 sites are in operation, one being located at the offices of the IES group on Brussels. This network is used for day-to-day communication between the project partners. The vendors participating in this project are now in the process of adding OSI conformant modules to their product catalogues.

The project has recently completed the second year of a planned three year programme. In the first year, activities were concentrated on development of network and transport protocols, and integration of these protocols with UUCP. In the second year this work was extended to include session protocols, and ISO file transfer and CCITT X. 400 message handling was implemented. A pilot network was installed to test the different implementations of the software developed, and to demonstrate interworking between the different implementations. This network currently comprises some 20 nodes in 5 countries. It is anticipated that exploitation of the ISO applications software (file transfer and X. 400 messaging) will occur during 1987/88.

Contact Point

Mr. M. Elie
BULL S.A.
68, Route de Versailles
F - 78430 LOUVECIENNES

Tel: +33/1-39025000
Tlx:
Tfa:

Participants	Country	Role
<i>BULL S.A.</i>	<i>F</i>	<i>M</i>
<i>GENERAL ELECTRIC COMPANY</i>	<i>UK</i>	<i>P</i>
<i>SIEMENS</i>	<i>D</i>	<i>P</i>
<i>ING. C. OLIVETTI & C., SPA</i>	<i>I</i>	<i>P</i>
<i>ICL</i>	<i>UK</i>	<i>P</i>
<i>Start Date: 01-NOV-85</i>	<i>Duration:</i>	<i>23 months</i>

THE UNIX-UNITED ASPECTS OF THE IES

Project Number : 130

The partners in this project were SG2 of France and Microelectronic Applications Research Institute (MARI) of the UK. The main objective of this project was to prove the suitability or otherwise of the Newcastle Connection method of interconnecting UNIX machines via wide area networks (WANs), rather than just local area networks (LANs). The other major objective was to provide software for the portable UNIX operating system, conforming to the Open Systems Interconnection (OSI) session layer standards suitable for a Newcastle Connection environment.

The Newcastle Connection method was developed in 1982 at the University of Newcastle under Professor Brian Randell. The aim was to give the user of a machine running the UNIX operating system over a local area network the possibility to interact with other such machines as if they were one and the same machine. In a sense, this could be considered a distributed virtual machine. The mechanism used is that of remote procedure calls buried within the Newcastle Connection software, itself installed on all the machines concerned. During the project, the following work was performed :

- The resolution of apparent contradictions between the addressing mechanisms of the Newcastle Connection, designed for local area network uses, and of the OSI standards; this was done by designing a resources search algorithm to resolve data-transmission pathnames, and an adapter to allow use of the OSI session service.
- OSI session-layer and transport-layer software were built for the UNIX machines involved; during the project, a session layer was built (BCS and BAS subsets, ISO/DIS8326/27) on top of a transport layer (classes 0 and 2, ISO/DIS8326/27). Lack of availability of suitable network layer (CCITT X. 25) software and hardware led to an X. 25 simulator being used over a loop-back asynchronous transmission service operating at 4800 bps.

One of the main results of the project has been to show that although it is technically feasible to interconnect UNIX machines running the Newcastle Connection software via wide area networks, such interconnection has been found in practice not to be interesting at present WAN speeds. To be of interest to the end user, compared to more traditional methods, WAN speeds need to be of the same order of magnitude as LAN speeds.

The other main result has been the building and testing of OSI session layer software, profiles BCS and BAS.

Contact Point

Mr Rondeau

SG2

12, Avenue Vion-Whitcomb

BP 215-16

F - 75765 PARIS CEDEX 16

Tel: +33/1-452452222

Tlx:

Tfa:

Participants

Country

Role

SG2

MARI SOFTWARE SERVICES

F

UK

M

P

ESPRIT/EUROPEAN LOCAL AREA NETWORK (ELAN)

Project Number : 700

To install a Local Area Network, corresponding to specific operational and functional user requirements through phased implementation of ISO, Open Systems Interconnection (OSI) standards, utilising the products of all four manufacturers involved. The project aimed at providing an in vivo experimentation of how standardisation activities among major European manufacturers (SPAG, contributing to CEN/CENELEC) can be implemented, as well as achieving interworking and a collaborative environment among 4 major European IT organisations.

Completed installation of a local area CSMA/CD network in two CEC buildings in Brussels comprising :

- 10 M-bit transfer coaxial cable, bridge linking the two LAN buildings, an X25 gateway and a PAD gateway, connection of over 40 end users, linking word processors and microcomputers and clusters, connection of an E-Mail server.

It provides a forum for cooperation involving 4 major European computer manufacturers which resulted in acceleration of agreement on standards, as well as joint demonstration of interconnected X400 multi-vendor E-mail implementations (Hannover 85, SIC0885).

It provided input to the specification of a multi-vendor local area network call for tenders to be issued by the Commission DGXI/E Informatics Directorate. It accelerated the agreements on LAN standards through the co-operation of major manufacturers within the SPAG and for the work in the CEN-CENELEC.

Contact Point

Mr. D.J. Rowland
ICL BELGIUM
36-38, Rue Joseph II
B - 1040 BRUSSELS

Tel: +32/2-2185675
Tlx: 64519
Tfa:

Participants

ICL BELGIUM
BULL S.A.
SIEMENS DATA S.A.
OLIVETTI S.A.

Country	Role
B	M
B	P
B	P
B	P

Start Date: 01-MAR-84

Duration: 36 months

COMPUTER CONFERENCING AND ELECTRONIC MAIL FOR ESPRIT (EUROKOM)

Project Number : 706

The project objective has been to provide a service of electronic mail and conferencing to the participants of the ESPRIT project and associated activities of collaborative R & D in the field of informatics throughout the European Community. The present contract was aimed at maintaining the reliability of the service and expanding its functionality through expansion of connections and better user support. This service was launched in August 1983 as an initial pilot service under the name EUROKOM. In July 1985, after competitive bidding, University College of Dublin was contracted to continue and enhance the service along the above objectives. Since that time the project has :

- Expanded its hardware configuration to allow for a larger user population and simultaneous user access.
- Installed a Unix host to provide communication among Unix organisations preferring to use Unix-Mail.
- Provided a two-way interconnection and a user interface between the EUROKOM system and the international TELEX network.
- Provided gateway services by allowing users to exchange messages with other similar services (QZ Kom) and major research network in the USA and Europe (ARPANET, CSNET, BITNET, EUNET).
- Provided new user documentation and expanded its online and via telephone user support services.
- With the co-operation of the other IES service project (No. P710) it provided electronic news conferences on different subjects related to IT and European Cooperation in research.

The project has successfully tested and plans to provide a service using an X400 mail gateway linking EUROKOM initially to the European EAN network and eventually to X400 sites.

Furthermore it has launched and maintained a database service under the name EUROCONTACT aimed to assist parties throughout Europe interested in Community collaborative research programmes, to identify partners for joint proposal and project activities.

Contact Point

*Mr. J. Conroy
UNIVERSITY COLLEGE DUBLIN
Computer Centre
Belfield
IRL - DUBLIN 4*

*Tel: +353/1-697890
Tlx: 91178 UCD EI
Tfa:*

Participants

UNIVERSITY COLLEGE DUBLIN

Start Date: 01-SEP-83

Country

IRL

Duration: 60 months

Role

M

IES SUPPORT SERVICES

Project Number : 710

The projects objectives are:

- To identify and implement services complementary or in support of present and future IES services.
- To monitor user needs in relation to their information exchange requirements in co-operative R & D community programmes and propose ways in which these can be satisfied through existing or new IES services.
- To launch a pilot service of an on-line machine translation service for some major European language pairs.
- To edit, publish and distribute a publication, reporting on IES projects and developments as well as on all European R & D related to information exchange

During the first 20 months of the contract the project has :

- Issued 8 IES News magazines up to February 1987 and shall continue to do this bimonthly extending its present 4000 subscribers to about 10000.
- Tested and demonstrated an on-line machine translation pilot service, called COTEL. This service is offered through a host in Luxembourg and the SYSTRAN programme can be accessed through public X25 networks by any synchronous telecommunication device. A user interface allowing users to pass text files in source language and receive a raw translation in the target language is provided to interested users.
- Provided electronic news over EuroKom conferences in specific areas such as European IT standards News, news from the European institutions related to IT and news on IT technological developments.
- Launched a set of on-line databases under the name IES Data Collections available through the ECHO Host in Luxembourg. These are aimed to support Information Exchange activities and concern:
 - Publicly funded IT projects.
 - People in Electronic mail system.
 - Research sites and facilities.

- Launched a multi-lingual telephone service (IES HELP-LINE) providing information and answers to questions on the IES services and the IES general.

Contact Point

Mr. J.C. Lecomte

INFOARBED

Rue de Longwy

Helfenterbruck

L - 8080 Bertrange

Tel: +352/47922170

Tlx: 3407 ARBE LU

Tfa:

Participants

INFOARBED

ECAT

IEGI

Country

L

L

L

Role

M

P

P

Start Date: 01-JUL-85

Duration: 42 months

**MESSAGE HANDLING SURVEY AND TRENDS FOR THE IES USER COMMUNITY
(HERMES)**

Project Number : 717

The objectives of the Hermes project were to investigate the requirements of IES users of message handling systems conforming to the relevant standards (CCITT X. 400 series), and the extent to which current and planned systems met the requirements. Subsequently a series of guidelines for the specification of an IES message handling system would be laid down. It was also important to ensure that the guidelines proposed were in harmony with the developments being proposed by the appropriate standardisation bodies.

As a result of the completion of a series of three tasks, the appropriate set of guidelines were produced. The successfully completed tasks were:-

- Assessment of the current and future requirements of the ESPRIT user community for information exchange electronically, in the context of their ESPRIT work.
- Evaluation of current and planned products and the extent to which such products fulfil user requirements.
- Analysis of the progress of international standardisation in the relevant areas, and the applicability of this work to the introduction of new IES services.

The resulting guidelines incorporate the definition of services based on user requirements and a description of the IES system architecture. Further to this the guidelines address the use of off-the-shelf products and migration towards interworking capabilities conforming to OSI standards.

Contact Point

*Mrs. S. Hamer
FISHER & LORENZ
Vangede Bygade 65
DK - 2820 GENTOFTE*

*Tel: +45/1-683100
Tlx: 39156 PETER DK
Tfa:*

Participants

FISHER & LORENZ

Country Role
DK M

Start Date: *01-JAN-86*

Duration: *12 months*

COMMUNICATIONS ARCHITECTURE FOR LAYERED OPEN SYSTEMS (CARLOS)

Project Number : 718

"Communications Architecture for Layered Open Systems" (CARLOS) is intended to allow existing personal computers and terminals to communicate via OSI conformant protocols, even if these current communications packages are considered incompatible.

The consortium has developed a set of hardware and software modules which are being tested by Danish telephone administrations in an operational environment.

Depending on the customers' equipment, various modules can be added in order to allow interworking with OSI conformant applications. The full "OSI-PC" conforms to all OSI layers protocols across public X.25 packet switched network. The "OSI-PAD" allows users of currently common terminal equipment to connect to the world of OSI communications. A sophisticated presentation system is available, comprising of a set of tools for the presentation of network management information in a graphical form.

An extension of the project was approved in 1987 and support for X.400 messaging will now also be provided.

The project development will be completed and operated over the Danish packet switched network during 1988. A strong impact on the availability of OSI components for terminal users is expected.

Contact Point

Mr. K. Sturup
FISHER & LORENZ
Vangede Bygade 65
DK - 2820 GENTOFTE

Tel: +45/1-421422
Tlx: 39156 PETER K
Tfa:

Participants

FISHER & LORENZ
CASE
RC COMPUTER
SYSWARE
ETSIT-B
ESTSET-M

Country	Role
DK	M
UK	P
DK	P
DK	P
E	P
E	P

Start Date: 01-FEB-84

Duration: 43 months

THE OBVIOUSLY REQUIRED NAME-SERVER (THORN)

Project Number : 719

"The Obviously Required Name-server" (THORN) is a precompetitive research project to study directory services. The functions to be studied included "White Pages", "Yellow Pages" and aliasing.

During Phase I (Years 1 and 2), the Project produced prototype software conforming to ECMA standards. A pilot network was implemented, based on this software, to gain experience in using the directory.

Phase II objectives included the provision of prototype software, conformant to CCITT X.500/ISO 9594, together with appropriate on- and off-line tools and screen/window-based interfaces (MMI) for interrogation of the directory system. The original pilot exercise will be extended to include all partners.

The project should provide the basis for establishment of directory services during the late 1980's.

Contact Point

Ing. F. Cordera

ING.C.OLIVETTI &CO. SPA

Didau DSM Ufficio Reti

Via Jervis 77

I - 10015 IVREA (TO)

Tel: +39/125-5251968

Tlx:

Tfa:

Participants

Country

Role

ING.C.OLIVETTI &CO. SPA

I

M

BULL S.A.

F

P

DFN

D

P

ICL

UK

P

SW

I

P

UNIVERSITY COLLEGE OF LONDON

UK

P

SIEMENS AG

D

P

INST. RECH. INFORM. & AUTOM.

F

P

GENERAL ELECTRIC COMPANY

UK

P

CERN

CH

P

Start Date: 01-JAN-85

Duration: 54 months

MORE INFORMATION ?

If you require more information, please contact:

DG XIII
Division A2
Esprit Information Office

on

Tel: +32 2 235 16 03
Tlx: 25946 JEPE B
21877 COMEU B
Fax: +32 2 235 06 55

and at the

COMMISSION OF THE EUROPEAN COMMUNITIES
DG XIII/A2
Telecommunications, Information Industries and Innovation
A25 -ESPRIT INFORMATION
200 Rue de la Loi
B-1049 Brussels

or

The External Relations Unit
COMMISSION OF THE EUROPEAN COMMUNITIES
DG XIII/E5
Telecommunications, Information Industries and Innovation
J37 1/20 -Ref: ESPRIT
200 Rue de la Loi
B-1049 Brussels