Esprit
Information Exchange System

iesnews

Issue No 24, November 1989

LATE NEWS

OVIDE II

Details of the expanded video-tex service of the European Parliament are about to be released, and will be described in detail in the next issue.

The Framework Programme, 1990 - 1994.

The six main R&D activities of this 7 700 Million ECU plan just presented by the CEC Vice-President Pandolfi include IT, Communications Technologies and Development of Telematic Systems in Areas of General Interest with a proposed budget of 3 000 million ECU.

New IT Periodicals.

Three new titles of interest to readers have appeared recently: International Journal of Information and Library Research (Taylor Graham) Interacting with Computers (Butterworths) Hypermedia (Taylor Graham)

The Integrated Tool Set (ITS), co-developed for OSI testing by SPAG-CCT in Europe, and the Corporation for Open Systems International (COS) in the U.S.A. is now available in Japan from the TOYO Corp.

As well as providing specific value added services such as EuroKom and this newsletter to support the participation in ESPRIT and other programmes, the IES is also participating actively in wider initiatives. The ultimate objective in this area is that all European Researchers, irrespective of their geographic location, may communicate electronically and enjoy an equal satisfactory grade of services, with tariffs that they can afford.

This newsletter now has a readership of over 12000; our other services have shown a slower growth. Maybe in the area of electronic services there is a loose analogy to the famous dictum of Max Planck that resistance to new scientific truths is only overcome when generations change. Happily, the user base of EuroKom is now growing more rapidly, and making more intense use of the enhanced functions of this service, such as transmission via FAX.

Welcome to the Special Conference Edition

Actions to improve the quality of the available infrastructure are also now well underway. This is demonstrated by the significant support the Commission is providing to the COSINE project, not only through finding, but also through the project management and administrative tasks.

The problem of achieving affordable tariffs is, however, more difficult to resolve. Several important elements need to be borne in mind when defining the charging equation. First, the research process is not organised directly on a revenue earning basis and from that point of view, researchers do not have their own source of finance with which to pay for the resources they require. One simple solution would therefore be to provide researchers with "free"

First European Lisp Conference

EUROPAL' 90 - the first European Conference on the Practical Application of Lisp - which is to be held during March 1990 in Cambridge, U.K. A call for papers has been announced and further details can be obtained from EUROPAL'90, PO Box 110, Dorking, Surrey, RH5 4FB, U.K.

THIS ISSUE:

Esprit
DGXIII
Telecommunications
Information Industries
and Innovation

CEFIC: A Progress Report

Two years ago IES News (Issue No 12, October 1987) reported on the decision of the Conseil Européen des Fédérations de l'Industrie Chimique (CEFIC) to create a paperless trading environment by launching its Electronic Data Interchange (EDI) project. We are now happy to report on the progress CEFIC has made since then.

The achievements are considerable. CEFIC proved that an international EDI application using UN/EDIFACT was viable for the European chemical industry. The use of the UN/EDIFACT standards and the publication of the CEFIC/EDI Declaration contributed to the acceptance of UN/EDIFACT as the major international standard. The project led to an official request to the Commission of the European Communities (CEC) for mandatory regulations relaxing the legal constraints and harmonising EDI related measures throughout the Member States. Close cooperation between CEFIC members was established, and the resulting group has proved sufficiently strong to take a leading role in the EDI world.

The project has had a snowball effect within the organisations of the participating companies with regard to awareness, building up skills and cultural changes. The CEFIC/EDI User Manual for guidance of all members of the chemical industry and their trading partners was helpful in defining a unified approach.

INTRODUCTION

During the course of the Project the EDIFACT Board for Western Europe was established, with five Message Development Groups (MDGs). These are:

MD 1 Trade
MD 2 Transport
MD 3 Customs and other Official Procedures
MD 4 Finance (Banking and Insurance)
MD 5 Special Projects (Construction, Tourism)

The Secretariat for the EDIFACT Board for Western Europe is provided by DG XIII (TEDIS Programme).

The CEFIC Message WP (Working Party) provided MD 1 with input from the Chemical Industry on trade messages. Due to the rapid developments in the transport area, where MD 2 began the development of the International Forwarding and Transport Messages (IFTM), a CEFIC/EDI Transport Group was established in order to follow these developments. A second group is the Administrative Requirements Task Force, which only partially deals with UN/EDIFACT message design.

The objective of the CEFIC Transport Group is to monitor the development of the transport messages. It should provide MD 2 with requirements specific to the Chemical Industry, for instance on hazardous goods.
It has to follow the development of other EDI transport messages, and has to determine whether CEFIC should engage in a pilot project of transport trials, and if so, how this should be done.

ADMINISTRATIVE REQUIREMENTS

The completion of the Internal Market, will require that administrative documents relating to customs, VAT and excise duties will need to be examined, along with their possible EDI implementation.

ORGANISATIONAL SET UP

Following the approval by the CEFIC Committee of Directors of a permanent involvement of the CEFIC Secretariat in EDI, a two-tiered CEFIC/EDI structure was approved by the Steering Committee involving:

1. An EDI Forum which allows interested companies to benefit from the work executed, without necessarily participating on an active basis.

2. An operating structure with working parties, open to companies willing and able to participate on an active basis.

Apart from the 17 members who participated in the first phase, newly interested companies have joined the operating structure.

CEFIC/EDI FORUM

The Forum brings together members of the Chemical Industry to discuss, to reach consensus on and to be informed about activities developed by experts involved in the different Groups and Task Forces.

It is a platform for sharing the experience gained by the participating companies in EDI and·to discuss national and European developments.

DG XIII is participating in the Forum as part of the TEDIS Programmes support for EDI User Groups in many different industry sectors. Membership is open to all corporate members of CEFIC and company members of the various National Chemical Associations. Meetings will be organised three times a year, alternatively in Brussels and in the CEFIC Member States.

COORDINATION GROUP

The group is establishing guidelines to CEFIC on general coordination, publicity, relations with the media and external organisations. It can dissolve or establish groups and has to ratify membership and remits. Membership is limited to the Chair and the vice-Chair of the working Groups and Forum, the CEFIC Secretariat and the European Commission.

MESSAGE GROUP

The function of the Message Group is to provide EDI messages for use of the Chemical Industry by cooperating with the EDIFACT Board groups and, where necessary, by developing messages of special interest to the Chemical Industry. It will identify the functionality of messages, data requirements and produce guidelines for their use.

A model showing the key information flows between chemical companies and their trading partners is under development.

TECHNICAL INFRASTRUCTURE GROUP

This group is concerned with a study of the EDI translation/transfer system and of the information system structure which lies between the applications within a user's processing environment/transfer system.

It will provide input to the appropriate international standard bodies, pressure systems vendors, suppliers of software tools and network service providers to incorporate the agreed requirements.

BUSINESS GROUP - FINANCE

The Finance Task Force of the Business Group is responsible for all aspects relating to the financial area.

The Task Force will determine the business issues, and will make recommendations on changes to the information flow.

This information has been provided by
Drs R.A.A. HOPSTER
CEFIC
Avenue Louise 250/71
B - 1050 Brussels

DAPHNE* AND ITS APPLICATION TO COSINE SPECIFICATION REPORTS

In any large-scale project where reports or other publications are written at a number of sites which may be widely dispersed in one or more country there is a basic problem involving the logistics of final version preparation. Conventionally each group of authors writes its contribution and submits it in hard copy to the central review or editing group. Sometimes such contributions may be submitted in disquette form, and more rarely are they transmitted through a network. In all events, contributions received at the centre have to be combined, generally involving retyping or at least a considerable effort in text manipulation. Any queries, changes

or additions have to be transferred back to the initial authors by the same route. Until final consensus on a text originating from various sites is reached, several laborious and time-consuming iterations will have taken place.

Such a situation threatened to arise in the preparation of the many reports resulting from the COSINE Specification Phase with more than 100 contributors working on the 50 documents with a final total of pages in excess of 1200. Since COSINE is a project about networks and networking, it was felt that networking should be used to ease the work of report preparation, especially as

the first batch of reports was condensed into a smaller series of comprehensive reports, each dealing with a specific aspect of the COSINE project.

Examination of available means to facilitate exchange of whole or parts of reports in a formatted form naturally led in the first instance to SGML (Standardised General Markup Language).

*DAPHNE = DOCUMENT APPLICATION PROCESSING IN A HETEROGENEOUS NETWORK ENVIRONMENT.

DAPHNE
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SGML* is comprehensive and detailed, dealing with every conceivable variant of document forms, which would have made adoption by researchers, not primarily concerned with preparation of texts for publication, difficult. Furthermore, one of the drawbacks of SGML is that it is not a true document exchange aid, since the text prepared by one formatting system cannot be displayed in another. A simpler and more adaptable system was required and this need was filled by DAPHNE.

In setting up the electronic environment for report production, it was agreed to have a central collecting point for all text submissions, with DFN in Berlin being given that role. Submissions could be by the RARE pilot MHS (Message Handling Service), Teletext or E-Mail (QZ-COM) or as hard copy. Each author was furthermore supplied with instructions for formatting in accordance with DAPHNE rules. The functions selected from SGML were restricted to seven elements which have to be incorporated into the text, but which involve no unusual characters. There are no provisions for tables or graphics, although authors familiar with formatting could use the rules permitted under SGML. Others submitted their tables and graphs in hardcopy for incorporation at the centre.

Five classes of documents are described in the DAPHNE user manual available in both German and English from DFN-Verein.

1. Report

This class permits the preparation of complete reports, handbooks and technical documentation for scientific and engineering applications.

2. Subreport

This class contains the same elements as the report class but allows for the preparation of parts (chapters) of reports, handbooks, etc. These partial reports can be prepared at dispersed/different sites and subsequently be combined into a complete publication without entailing any alterations.

3. Paper

This category allows for the preparation of private or official letters.

4. Letter

This class permits the preparation of private or official letters.

5. Slideset

This category is used for the preparation of overhead foils, with a uniform design for each series of foils made.

The elements defined in the respective document classes are incorporated in the form of so-called Markups or Tags in the body of the text to permit structuring of the document.

With a few exceptions, the markups permitted for the different document categories of DAPHNE provide the logical structuring of a document. This is taken to mean the distribution of a document into, e.g. heading, chapters and section, appendices, footnotes, tables, listings, etc.

In order to distinguish a Markup from the body of the text, use is made of the "greater than" and "lesser than" signs.

*WHAT IS SGML ?

Any word processor inserts markers (normally as non-printable codes, e.g. HEX 01 for centring, etc.) in a text to indicate positioning, such as paragraph indentations, tabulation jumps for tables, etc. Such markers are destined for the specific word processor alone and do not represent the logical structure of the text: they are both strictly procedural and system dependent. An improvement would be to make such marking-up system independent, and SGML was developed to overcome these shortcomings. SGML is therefore a set of rules for defining generalised markup applications and meets the following requirements:

-it is free of character set dependencies
-texts marked up using SGML can be processed on a wide range of devices and systems
-markups and references to external objects (photographs, figures, further chapters, etc) are independent of application, system or device
-implementation on any text processor, word processor, CAD device, publishing system or other document processing system is possible.

Thus,

< p newpage ragged id = Homer >

results in the subsequent text being displayed as a new paragraph on a new page in ragged type and that a reference to this paragraph can occur anywhere in the document through the term "Homer".

The DAPHNE Document Category "report"

This category has the largest number of defined elements. A subject listing (index) is automatically produced for this type of document. Titlepage and foreword appear in a distinct layout. If desired, first and last lines on any page can be defined. Footnotes (references) in the document are also generated automatically. Chapters are numbered consecutively with a 5 tier hierarchical structure being possible. Listings and tables, for which detailed descriptions are provided, can also be incorporated in the text. Footnotes, mathematical formulae, bibliographies and appendices which can be paginated separately are also permitted. Sections of text can be marked for editing and terms can be designated for a changed typeface. Any special symbol, not available on the keyboard used, can be included using so-called "entities".

DAPHNE in Three Formatting Environments

The heart of the DAPHNE system is the document exchange format which is given by the five document classes described above (see Figure 1). This format includes, in addition to the body of the text and possibly any clear text - encoded graphical information, the markups enclosed by the "greater than" and "lesser than" signs which result in the structuring of the document.

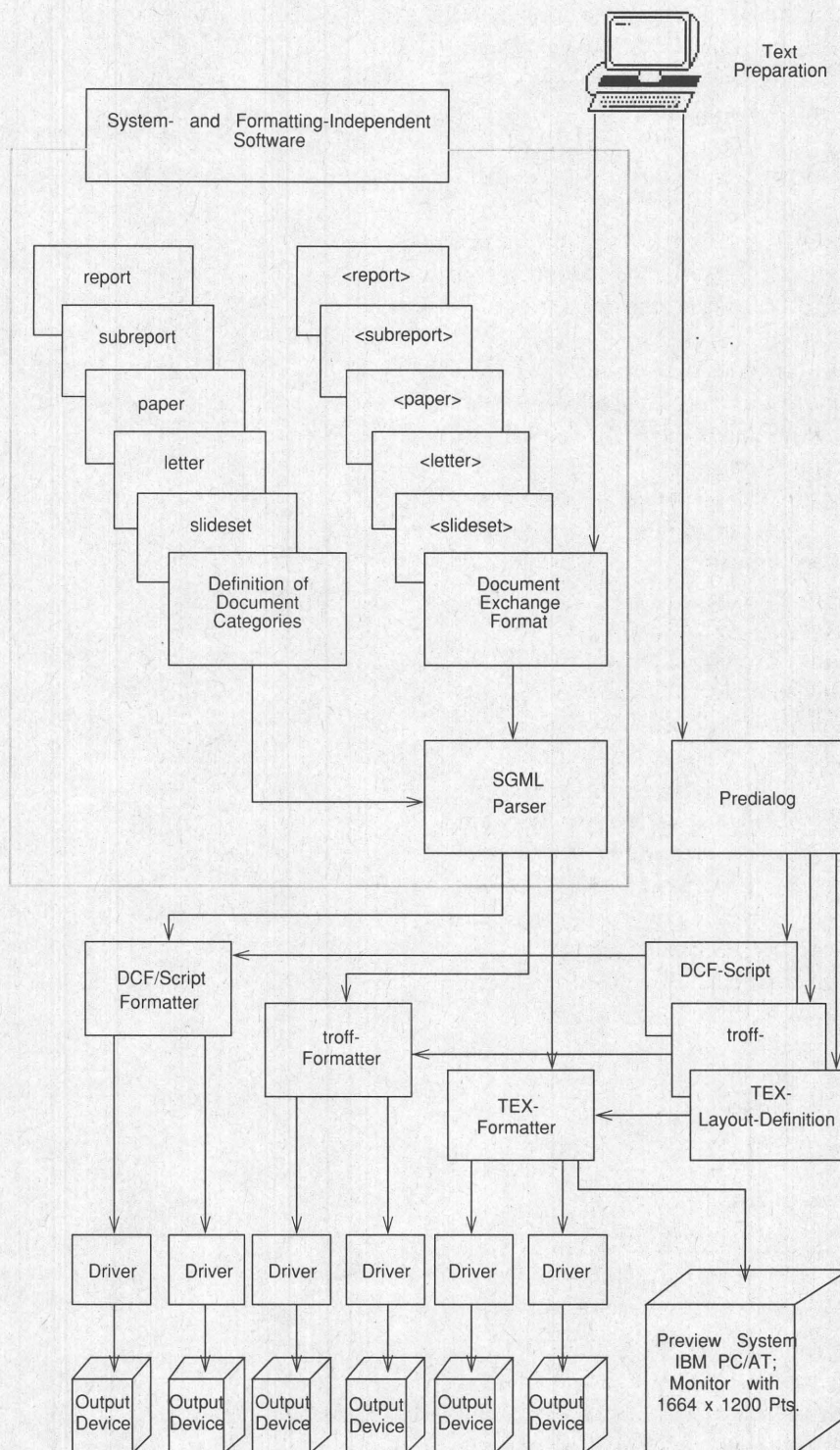# DAPHNE
AND ITS APPLICATION TO COSINE
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Figure 1 : Design of DAPHNE

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Hence the exchange format is a pure text file which can be exchanged between partners by a Message Handling System (MHS) or by "File Transfer". DAPHNE includes a parser which checks documents in the DAPHNE exchange format for syntactical correctness. The parser uses the definition of the DAPHNE document categories.

The document categories are used by the parser to change the markups to instructions or macros of the different formatting systems which govern the layout of the document. DAPHNE at present can cope with three formatting systems as indicated in Figure 1.

The implementation of DAPHNE for the three environments was undertaken by various members of the DFN group.

The DAPHNE user has only limited control over the realisation of the logical structure. Each of the three formatting environments includes a so-called predialog software package which, if required, can be used to alter the display on the receiver end as far as type size, font, line spacing, indents, pagination, and similar aspects are concerned.

Preparation of Documents in the DAPHNE Exchange Format

Documents in the DAPHNE exchange format can be prepared using any standard text editor since, other than normal text, only printable characters are used to define the text through markups. This is an advantage as every computer system has a text editor available.

The subset of commands to be used for COSINE has been restricted to seven elements. These are:

1. < preface >   : to present a brief outline of the study and to summarise the main results.

2. < chap >   : to start new chapters, also permitting the structuring of four levels of subchapters. DAPHNE numbers the chapters and creates a table of contents.

Typed Input for DAPHNE

```
<paper><titlepag><title>Three Cheers for DAPHNE
<author>by Peter Egloff of GMD-FOKUS in Berlin
<abstr>This document of the category <e1>"paper"</e1>
contains the Markups <e2>titlepag, title, author,
footline, abstr, chap and chap1, p, modtext, fn,
list, i, table, tabhead, colhead, rule, subtitle and
ref. </e2>
<chap id=reference>Who needs DAPHNE ?
<p><modtext>
<e1>Everyone</e1> needs DAPHNE ! That is all who want
to exchange scientific or technical texts containing
graphics and tables irrespective of given documenta-
tion systems existing in a heterogenous environment.
<modtext end>
<chap1>DAPHNE here and DAPHNE there
<p>
Documents in the DAPHNE exchange format can at
present be displayed visually in <e1>3</e1> (in words
<e4>THREE </e4>) different formatting systems. These
three are : TEX and troff and DCF/Script..
<list digit isplit>
<i>Each formatting system has its own mechanism of
representation - as can be seen !
<i>A preview system is available for the TEX-environ-
ment !
<1>And furthermore <e3>POSTSCRIPT</e3> can be handled!
```

The panel on the opposite page shows the output (simulated) in three formatting systems.

Figure 2

6

DAPHNE AND ITS APPLICATION TO COSINE SPECIFICATION REPORTS

3. < p > : this command initiates new paragraphs.

4. < p run > : this is reserved for small amounts of tabulated information such as addresses.

5. < en > < el-e4 > : permits different styles to be used.

6. < bl > : enters a blank line.

7. < list digit > : allows the author to initiate each new item by a number.

< list bullet > : allows the author to initiate each new item by a bullet. Each new item must be preceded with <i>.

With the exception of <p>, <p run> and <bl>, all commands must be closed by the inclusion of a slash followed by the actual command (eg. </preface>).

Figure 2 shows an example of a report as typed, and output produced from this by the 3 formatting systems.

Even though preparing the document exchange format appears to be somewhat laborious at present, the neutral format is nevertheless a great help for those who need to or wish to exchange whole or parts of scientific or technical documents.

Further details and conditions for use can be obtained from DFN, Berlin.

Stephanie FUHRMAN
Wulf BAUERFELD
Peter EGLOFF

DFN, GMD and FOKUS
Berlin

Three Cheers for DAPHNE

by Peter Egloff of GMD-FOKUS in Berlin

This document of the category **"paper"** contains the Markups *titlepag, title, author, footline, abstr, chap and chap1, p, modtext, fn, list, i, table, tabhead, colhead, rule, subtitle and ref.*

1. Who needs DAPHNE ?

Everyone needs DAPHNE ! That is all who want to exchange scientific or technical texts containing graphics and tables irrespective of given documentation systems existing in a heterogenous environment.

Three Cheers for DAPHNE

by Peter Egloff of GMD-FOKUS in Berlin

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```
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chap and chap1, p, modtext, fn, list, i, table, tab-
head, colhead, rule, subtitle and ref.

1. Who needs DAPHNE ?

Everyone needs DAPHNE ! That is all who want to ex-
change scientific or technical texts containing
graphics and tables irrespective of given documenta-
tion systems existing in a heterogenous environment.
```

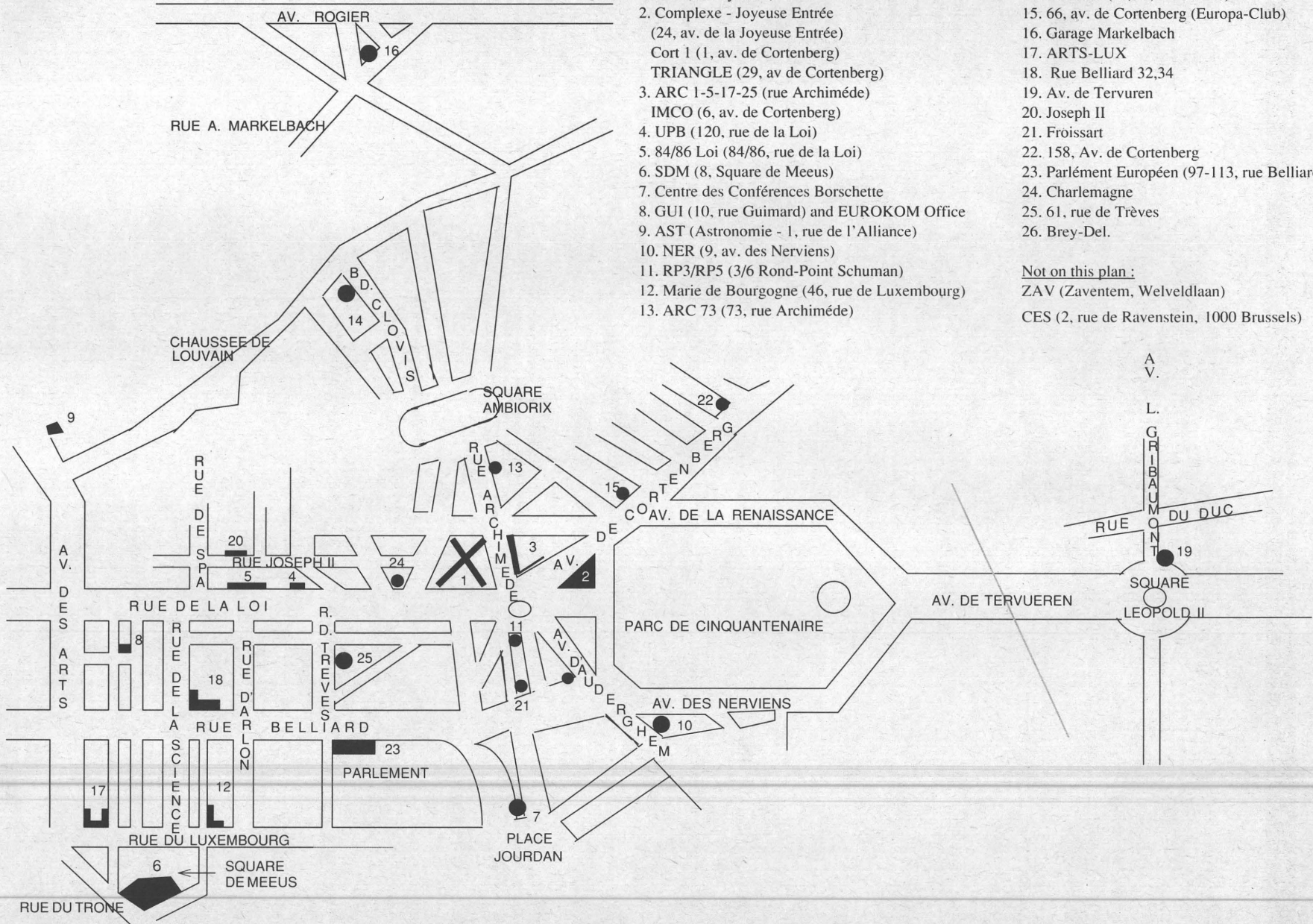# BRUSSELS LOCATIONS OF THE EUROPEAN INSTITUTIONS.

1 BER (Berlaymont)
2. Complexe - Joyeuse Entrée
   (24, av. de la Joyeuse Entrée)
   Cort 1 (1, av. de Cortenberg)
   TRIANGLE (29, av de Cortenberg)
3. ARC 1-5-17-25 (rue Archiméde)
   IMCO (6, av. de Cortenberg)
4. UPB (120, rue de la Loi)
5. 84/86 Loi (84/86, rue de la Loi)
6. SDM (8, Square de Meeus)
7. Centre des Conférences Borschette
8. GUI (10, rue Guimard) and EUROKOM Office
9. AST (Astronomie - 1, rue de l'Alliance)
10. NER (9, av. des Nerviens)
11. RP3/RP5 (3/6 Rond-Point Schuman)
12. Marie de Bourgogne (46, rue de Luxembourg)
13. ARC 73 (73, rue Archiméde)

14. Garderie (75/79, bd. Clovis)
15. 66, av. de Cortenberg (Europa-Club)
16. Garage Markelbach
17. ARTS-LUX
18. Rue Belliard 32,34
19. Av. de Tervuren
20. Joseph II
21. Froissart
22. 158, Av. de Cortenberg
23. Parlément Européen (97-113, rue Belliard)
24. Charlemagne
25. 61, rue de Trèves
26. Brey-Del.

Not on this plan :

ZAV (Zaventem, Welveldlaan)

CES (2, rue de Ravenstein, 1000 Brussels)

AV. ROGIER

RUE A. MARKELBACH

CHAUSSEE DE LOUVAIN

BD. CLOVIS

SQUARE AMBIORIX

RUE ARCHIMÉDE

AV. DE LA RENAISSANCE

CORTENBERG

RUE DE SPA

RUE JOSEPH II

AV. DES ARTS

RUE DE LA LOI

R. D. TREVES

RUE DE LA SCIENCE

RUE DARLON

RUE D'ARLON

BELLIARD

AV. DAUDERGHEM

PARC DE CINQUANTENAIRE

AV. DE TERVUEREN

AV. DES NERVIENS

PARLEMENT

RUE DU LUXEMBOURG

SQUARE DE MEEUS

RUE DU TRONE

PLACE JOURDAN

AV. L. GRIBAUMONT

RUE DU DUC

SQUARE LEOPOLD II

COSINE NEWS

Cooperation for Open systems Interconnection Networking in Europe.

COSINE News intends to cover viewpoints of all parties with interest in COSINE.

PILOT INTERNATIONAL RESEARCH NETWORK INFRA-STRUCTURE CONTRACT SIGNED

A contract for the provision of a pilot Europe-wide interconnection of computer networks for researchers has been signed between the Commission, representing the partners in the EUREKA COSINE (Cooperation for Open Systems Interconnection Networking in Europe) project, and PTT Telecom of the Netherlands. The contract provides for a five month period of preparation and commissioning, starting in September 1989, followed by 12 months of full pilot service.

The Commission is to contribute the major portion of the funds on behalf of the Community and its Member States from the budget of the ESPRIT programme, while the other participating COSINE states are to provide the remainder.

The Pilot International X.25 Infrastructure (IXI) Backbone Service is the first major activity of the implementation phase of the EUREKA COSINE project. PTT Telecom will be responsible for establishing, operating and managing the service in cooperation with other European telecommunications administrations.

The COSINE project aims to provide an open, standards-conformant computer communications environment for the European research community. Responsibility for technical aspects has been given to RARE, the European association of users and providers of research networks.

The research networks will be connected to the Backbone via 64 Kbit/sec X.25 access points, with a possibility for a later upgrade to a speed of 2 Mbit/sec. The countries to be interconnected are Austria, Belgium (also providing access for Luxembourg), Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden (providing a connection to the other Nordic countries: Finland, Iceland and Norway), Switzerland, the United Kingdom and Yugoslavia.

Following RARE's specifications, the IXI pilot service will use data communications protocols that conform to the CCITT X.25(84) set of recommendations and will allow connectivity to X.25(80) subnetworks. It will allow not only improved connectivity between the participating organisations in RARE, but also the possibility of investigating a number of the most important aspects of the management of pan-European X.25 interconnections.

During the project operation, steps will be identified which are necessary to ensure continued availability of IXI or equivalent functionality for the full duration of the COSINE Implementation Phase, which is expected to start soon.

The IXI project will be discussed at the next COSINE Users' Meeting in Brussels on 30 November 1989.

Additional information on the above noted activities or any other aspect of COSINE may be obtained from the

COSINE Policy Group Secretariat,
Commission of the European Communities,
rue Archimède 25, Room 5/12,
B - 1049 Brussels, Belgium
Tel. +32-2-2360522

or from the

RARE Secretariat
PO Box 41882
NL - 1009 DB Amsterdam, The Netherlands
Tel. +31-20-5925078

U.K. DIRECTORY SERVICE PILOT PROJECT

BRIEF OVERVIEW OF INTERNATIONAL DIRECTORY STANDARDS

The joint ISO/IEC 9594 and CCITT X.500 Directory Standards (which were ratified late last year) model the user interacting with the Directory through a Directory User Agent (DUA). The DUA communicates with the Directory by means of an OSI protocol, the Directory Access Protocol (DAP). In this conceptual model the Directory is a single entity containing all the information its users might ever require. Clearly it is not feasible to implement the entire global Directory in one single centralised system. Therefore the conceptual Directory model is refined, giving a Directory Service which is provided by the co-operative efforts of many Directory Service Agents (DSAs). DSAs communicate through another OSI protocol called the Directory System Protocol (DSP).

There are two methods of communication between the Directory components which can be used when a DSA receives a query which is outside the scope of its local information: chaining and referral. Chaining is when the queried DSA takes a proactive role by itself establishing a connection to another DSA to which it passes the query. Referral is when the queried DSA simply returns an immediate response indicating another DSA which the originator of the query might try.

The information held in the Directory consists of Entries. Each Entry consists of a set of Attributes. Attributes comprise an Attribute type and one or more Attribute Values. Attributes may consist of one value which is guaranteed unique among its peers, called the Distinguished Value, and other values which have no requirements for uniqueness.

The information in the Directory is structured into a hierarchical tree. The Directory Standards do not constrain the types of attributes which can be used to define the structure of the tree. They do however give examples of a structure which may be appropriate.

An Attribute which is used to name the nodes under some other node in the tree must have a Distinguished Value, called the Relative Distinguished Name (RDN), which uniquely identifies that node relative to its parent node. The Distinguished Name of a node is the concatenation of the RDNs of each node in the ancestral hierarchy from the root of the tree to the node in question.

OBJECTIVES OF THE PILOT PROJECT

Uses of the Directory

The principal aim of the UK Academic Community Directory Service Pilot Project is to provide information about humans, and in particular information for other humans on how to establish communication. The initial user requirement came from the difficulty in determining electronic mail addresses. However, the advent of sophisticated telephone systems with direct dial in to the office phone has introduced a new requirement. While most organisations have an internal paper telephone directory, finding a direct dial phone number in another organisation is very difficult. This information is currently seldom published.

In addition to electronic mail address and telephone number, the pilot directory will include Room Number, Postal Address, and Fax and Telex numbers.

Use of the Directory to provide a system directory service - the mapping from Application-Entity-Title to Presentation Address - will only be of secondary importance initially in the UK Academic Community as this functionality is already provided by the Name Registration Scheme (NRS). This was initially developed to provide both name-to-address mappings and incoming-call-source validation services. It has since been enhanced to provide subnetwork addressing information and validation - mapping Network Service Access Point (NSAP) address to SubNetwork Point of Attachment (SNPA). The NRS also provides an essential tool in managing the transition from Coloured Books to OSI protocols by providing unchanging naming of systems thus hiding protocol transitions from users and by manipulating addressing information so that protocol convertors can be used to make all Coloured Book services appear to be equivalent OSI services and vice versa.

Potential uses of the Directory to contain Message Handling Service (ISO/IEC 10021/X.400(88)) routing information and Distribution List membership are likely to be realised in the foreseeable future.

Heterogeneity

The second major objective of the pilot project is to demonstrate interworking of heterogeneous implementations of OSI protocols. An OSI pilot which involved only multiple incarnations of one single implementation would fail to demonstrate the most significant benefit - interworking of heterogeneous systems.

The directory pilot intends to use two implementations - QUIPU and THORN - which were originally developed as parts of two separate ESPRIT projects. QUIPU was developed by University College London as part of the INCA project and has been incorporated into the publicly

U.K. DIRECTORY SERVICE PILOT PROJECT

available ISODE package. The first full X.500 QUIPU release happened in April 1989. THORN was developed by a European consortium consisting of a mixture of commercial and academic organisations. THORN originally implemented the ECMA TR32 Directory Protocol and has a planned X.500 migration which is not yet available. Another X.500 implementation is being developed by the University of British Columbia, Canada, which might provide a third option although little detail is currently known about this.

Directory Standards Demonstration and Testbed.

Two further objectives are to demonstrate the viability of the current (88) Directory Standards and to discover shortcomings in time to have these rectified in the 1992 revision.

There are some facilities which were known to be required but were omitted from the 88 version because of insufficient time (eg Access Control, Replication, Knowledge Management and Distribution). Both QUIPU and THORN have (different) temporary implementation specific solutions to provide Access Control and Knowledge Management facilities as no implementation is viable without these, but these ad-hoc solutions will be replaced when these aspects are defined in the standards. However, it is felt that user experience with implementations of the current standards may reveal other deficiencies and desirable extensions, and that pilot use now is necessary to ensure that these expected requirements are discovered in time for solutions to be included in the 1992 version of the Directory Standards.

Replication is seen as a vital long-term requirement to allow DSAs to hold shadow copies of frequently used information where the master copy is held elsewhere, but not absolutely essential in the short-term pilot phase. A replication facility already exists in the NRS and would be needed in the Directory standards before they could replace that part of the NRS functionality.

PRINCIPAL PROBLEM

The principal problem envisaged is the acquisition and maintenance of the data. While initial enthusiasm may be sufficient to get data loaded into a new DSA, unless adequate maintenance mechanisms are defined and incorporated into routine procedures continued accuracy of the data is highly unlikely. Therefore it is imperative that Directory maintenance tasks are assigned, probably to those whose job is to maintain that part of the data, and that individuals responsible are aware of the benefits achieved from the maintenance of Directory data.

One difficulty is that the data are usually currently held by several disparate sources: there is one administrative department holding basic staff records; another maintaining student records; telephone number records are often the responsibility of the telephone operators; room allocation responsibility and records are frequently devolved to departmental level; and electronic mail addresses are often administered by the relevant computer system administrator (some users will use University Computer Service electronic mail facilities while others will use departmentally administered systems). Maintenance of the Directory thus requires the co-operation of several parts of the University Administration, each of which needs sufficient motivation to ensure that Directory maintenance is regarded as an integral part of the relevant data maintenance task for which it is responsible.

Another impediment to Directory maintenance is that universities usually have Administrative Computing Departments which are totally separate from the Academic Computing Service. Frequently the Administrative computers are not even networked.

An unexpected problem is that there are a few Universities which have not yet computerised their staff records. The discovery of continued use of manual card records in 1989 was most surprising!

USER INTERFACES

QUIPU and THORN each have several DUA implementations giving a variety of differing user interfaces. However, all these interfaces are aimed at the computer literate familiar with the Directory standards. User requirements have been identified for better fuzzy matching techniques, and for a user interface suitable for non-specialist users. A project is just starting which aims to design and implement a user interface targeted at users who are not familiar with the structure and terminology of the Directory. The design goal is to produce an interface capable of implementation on a variety of WIMP environments (eg X Windows, Microsoft windows, Macintosh) which will as far as possible follow the look and feel appropriate to each environment whilst remaining recognisably the same interface in all cases.

KNOWLEDGE MANAGEMENT

Knowledge is the glue which keeps the disparate DSAs glued together into a coherent directory. It is the information which indicates to DSAs where information on other parts of the Directory Tree is likely to be found. This is an area where there will be some early experimentation. It

U.K. DIRECTORY SERVICE PILOT PROJECT

is anticipated that the knowledge will be arranged so that a query within the academic community can be answered by accessing not more than two DSAs.

NAMING OF ORGANISATIONS

The principal aim of naming should be user friendliness. However, there are two incompatible views of user-friendly names: self-descriptive names; and short, easy to type names. Fortunately, the Directory offers the potential to satisfy both requirements.

Directory entries consist of attributes which can be multi-valued. Only one of the set of names can be used as (possibly part of) an entry's distinguished name. However, when searching for an entry, the name being queried is compared with the whole set of names.

It is therefore proposed that the Academic Community institutions should use several values of their organisation name attribute. The Distinguished Name should follow the Directory principles of being Intelligible and easy to gguess, and should be chosen with national uniqueness in mind despite the current lack of a U.K. Registration Authority.

The following examples illustrate potential values of the Distinguished Name and other values:

Distinguished: University of Aberdeen
Aberdeen University
Aberdeen
Adbn

Distinguished: Rutherford Appleton Laboratory
Rutherford
RAL

RL
   Distinguished: University of Manchester
Manchester University
The Victoria University of Manchester
Manchester
Man
Owens
Mcr

PILOT DIRECTORY SERVICES

The establishment of initial services using QUIPU has been inhibited by the lack of suitable hardware platforms in University Computing Services. Some experimental use has been made by Computer Science Departments, notably at UCL, Nottingham, Brunel and Surrey; however these are experiments with very limited data.

To establish a viable pilot directory service some provision of suitable hardware is required. The aim of the pilot project is much more than simply beta testing the two Directory Service implementations, although this is a component. Much more significant will be the exploration of the necessary co-operative arrangements for data gathering and maintenance. Given these two aspects, a pilot project involving between 6 and 12 sites seemed appropriate.

Last September the JNT invited all Computer Centre Directors and Registrars to nominate participants to a discussion group, which would be discussing the problems of establishing Directory Services in the Academic Community. The pilot project was discussed in the group and Computing Service members were invited to submit proposals for participation in the Directory Pilot. Twelve proposals were received, all of a high standard, from Bath, Birmingham, Blooms-

bury, Brunel, Cambridge, Edinburgh, Heriot-Watt, Nottingham, Reading, Rutherford, Strathclyde and Surrey. Funding has been approved to provide a computer system at each of these sites to mount a pilot Directory Service. The SUN SPARC station 330 has been selected as a suitable hardware base and the delivery of these systems should have commenced in August 1989. Complementary work is in hand to encourage the development of user friendly Directory User Agents and to link the Pilot to pilot projects, particularly a European Directory Pilot being promoted by RARE.

Jim CRAIGIE
Joint Network Team
Extracted from Network News, July 1989, No.29

Items of Interest

The full text of papers presented at this year's RARE Networkshop (see IES News, No. 21) has been published as No. 4 & 5 of "Computer Networks and ISDN Systems", 1989.

The Provisional COSINE Project Management Unit has commenced its activities.

As a follow up from the European High Speed User meeting organised jointly by the CEC and RARE WG6 (see IES News, No. 21), plans have now been proposed by RARE WG6 for a European High Speed Networking Initiative. These include the setting up of a high speed backbone linking national, regional and disciplinary high speed networks. The aim is a Gigabits per second facility by the end of the century.

At a meeting in early October, the 22 signatories (comprising European Telecommunication Administrations and Operators) to the Managed Data Network Service Agreement decided not to proceed with the setting up of the MDNS Company, as originally intended.

The RARE Message Handling Service Project

In 1984 national activities on pilot R&D MHS Services based on X.400 started. The need for some level of international coordination was soon identified. An informal international group was formed, and later, when the RARE organisation was founded, RARE WG1 (on MHS) took over the coordinating role.

The RARE MHS Project was proposed by RARE WG1, with the aim of improving X.400 connectivity and thereby promote X.400 products to help the R&D community to migrate to OSI based services.

In 1987 ESPRIT funds were made available by the IES to realise this project and a contract was signed between CEC, RARE and SINTEF.

The situation at the project start was: several international mail networks existed based on different types of protocol technologies. Informal gateways made it possible to communicate across protocol borders. The pilot R&D MHS services was only serving a small portion of the total number of real users.

During the project period the R&D MHS Service has developed X.400 to be a realistic alternative to the other protocol technologies for the planners of mail services in the R&D community. A model for organisation of gateways between R&D MHS and the "RFC" networks was developed. Procedures were defined for both gateway address mapping and the operation of the R&D MHS Service itself.

A broadly based infrastructure has been created: 20 countries (17 European) participate in the R&D MHS Service; in 10 of these the R&D MHS is an important messaging service, more than 12.000 users are connected through 530 installations, 15 different X.400 implementations are used, and the public X.25 network is used for all international traffic.

A three-level management structure has been adopted separating local, national and international responsibilities. This organisational model, together with a set of defined management procedures, has brought the infrastructure into use by a wide range of research and development interests. An R&D MHS Manager is identified in each country as being responsible for the national R&D MHS Service. In particular he is in charge of the Well-known Entry Point (WEP) which transfers messages internationally on behalf of the network's users.

The result of setting up this management structure has become tangible to the end-users:

When the X.400 experiments started in different national entities, strong doubt had been expressed by networking specialists outside the OSI movement, mainly concerning the feasibility of the enterprise of rapidly creating an effective service on the base of X.400 and public transport services.

The present state of the academic X.400 message handling services prove that these concerns were not justified:

- The quality of the services offered is at the same level as that of the traditional non-X.400 services - although it should be recognised that this is a relatively recent achievement and might vary from one national sub-system to the other.

- User acceptance is good. The use of X.400 message handling has been promoted successfully outside of its initial user group of very motivated "hardcore" specialists.

One of the fundamental principles of the use of OSI networking in the RARE community is the federative approach. The Project can be considered as a test-bed for this approach. It has produced valid strategies for coordinating the activities in a federative system, and it has brought the proof that the approach is viable.

However, it should be noticed that the Project has also pin-pointed some potential risks of this purely informal federative collaboration. Two examples from recent experience with RFC 987 mapping illustrate this:

1. It has not been possible to decide on a single strategy for RFC mapping; the solution of a coordinated and automated exchange of mapping information is a valid alternative, but requires a substantial administrative overhead. An authoritative decision on a single mapping system might have created hardships in some national entities, but would probably in the long term have provided a better and more efficient overall solution.

2. The currently used exchange of mapping information relies on efficient collaboration between a large number of persons working under the responsibility of as many different organisations. So far, there has been much good will, and very positive results have been obtained. However, small incidents have demonstrated the delicate nature of such an arrangement. It could very well happen that some national entity might lose interest or motivation, which would immediately have a negative consequence on the overall connectivity apparent to the user. The present model provides no mechanism to cope with such a situation.

The results from experiments with communication to public X.400 services are limited as few countries provide such services and the interna-

The RARE Message Handling Service Project

tional connectivity is poor at this stage.

In the R&D MHS Service, the migration process to full CEN/CENELEC conformance is in good progress. However, even in this most advanced domain of OSI based applications, lack of products suitable for the R&D community is delaying the breakthrough of OSI services.

Work undertaken during the CO-SINE Specification Phase has identified the availability of a significant number of X.400 products, but a more detailed examination shows that only some of these have up to now been picked up by the market and are being used for normal day-to-day operations in the R & D community. It has become clear that conformance to standards needs to be complemented by practical proof of interworking before potential customers are prepared to implement network systems hosted on a multi-vendor equipment base.

The MHS project has provided successful results in establishing management strategies for the set-up of a Europe and world-wide X.400 messaging system. These strategies mainly deal with questions of the organisation and coordination of services.

This has been of primary importance for the success of the initial phase, and will continue to serve in coordinating the activities of the different entities constituting the overall system. However, it should be recognised that a large amount of management tasks remains to be solved. The lack of data to be provided by the na-tional entities has made quantitative measurements of the increase of traffic impossible. A similar statement could be made on the evaluation of the reliability of the offered services.

Pending a general solution in the framework of the OSI environment, ad-hoc solutions for message handling services must be put under way rapidly.

A succinct analysis of the individuals involved in the operation and promotion of X.400 based message handling shows that a large percentage of these persons comes from telecommunications R&D or form institutions created in order to organise networking at the national level. Representatives of the traditional service provider in the academic environment - staff from the computer centre or informatics services - are not sufficiently present.

It is essential for a successful migration to X.400 that, at the level of each research institution, the "official" services provider be made aware of the value and importance of X.400 message handling and becomes actively involved.

The advent of X.400 and the migration to this technology made necessary the introduction of new procedures for gateway operation. These procedures may in the short run seem complex and they may have had a temporary negative influence on the reliability and stability of the services delivered to the end-users. In the long run when the procedures have been properly implemented, they will lead to an improved service quality for the end-users.

X.400 based message handling cannot be seen as an isolated system. When the end-user communicates with his partner, he normally does not realise whether this is done in a homogeneous system, or whether the communication crosses the boundary of one or more systems based on different technology. Good reliability is not sufficient when it is confined to within the pure X.400 domain - it must also cover the reliability of the connections to neighbouring systems.

It is important to create awareness of this situation, striving for an effort to keep the complexity at the lowest possible level, but also providing motivation for an acceleration of the migration process, in order to increase rapidly the size of the homogeneous X.400 sub-system.

The project has provided input to the COSINE Specification Phase. The R&D MHS Service is a pre-COSINE pilot that will cease to exist when CO-SINE MHS is implemented.

The preceding series of observations can be understood as lessons learned during the past operation of the Pilot, which should help to influence positively future development in this domain.

RARE MHS Project
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Summary of Suppliers' OSI Products and Plans
(Second Update)

We present below the results of a survey conducted during October 1989. All data received by the 25. October have been included. Our thanks are due to all who helped in compiling this table.

	X-25		NETWORK CONS		NETWORK CLNS		TRANSPORT					UPPER LAYERS					
	80	84	LAN	WAN	LAN	WAN	0	1	2	3	4	SES	PRES	ACSE	MHS	FTAM	VTP
Acotec		♦	♦				♦		♦		◊	♦	♦	♦	♦	◊	
B.I.C.C.		▽	◊		♦		◊		◊		♦	∅	∅	∅			▽
B.I.T.					▽◊						▽◊						
British Telecom	▽	8	◊	◊			▽◊		◊				◊		◊	▽◊	
Bull	♦	0		♦	♦	0	▽		♦	♦	♦	◊	◊		◊	▽◊	◊
CAP	♦	♦	♦	♦	♦	♦	♦		♦		♦	♦	♦	♦	♦	♦	8
CASE	♦	♦	◊	♦	♦	◊	◊S	S	◊S	S	▽	◊S	◊S	◊S	◊S		◊S
CoCoNet							♦		♦			♦	♦	♦		♦	
ComConsult*																	
Concurrent	♦	◊	♦	♦	8		♦		◊	♦		8	8	8	8	8	
DEC	♦	♦	0	♦	♦	♦	♦		♦		♦	♦	0	0	♦	♦	1
Data General	▽	▽	▽	▽	▽	▽	▽		◊		▽	▽	▽	◊	▽	▽	◊
Ferranti	♦	◊		♦	♦		♦	♦	♦		♦	♦	♦		♦		
GEC	♦	7	8	8	♦		♦				♦	◊			◊		
Hewlett Packard	♦	♦	♦	♦	♦		♦		♦		♦	♦	♦	♦	♦	♦	◊
IBM	♦	♦	▽	▽	▽	▽	▽		▽		▽	▽	▽	▽	▽	▽	
ICL	♦	♦	S	♦	♦		♦		♦		♦	♦	♦		▽◊	▽◊	0
ITL	♦	∅	▽	♦	♦	▽	♦		◊	▽	♦	♦			♦	∅	◊
Logica	♦	S		S			▽					▽			♦		
Marcol	♦	▽	♦	♦	♦	▽	♦		♦	♦	♦	♦	0	0	♦		
McDonnellDougl.	♦	♦		0	♦		0		0		♦	◊	◊	◊	◊	0	◊

Summary of Suppliers' OSI Products and Plans
(Second Update)

	X-25		NETWORK CONS		NETWORK CLNS		TRANSPORT					UPPER LAYERS					
	80	84	LAN	WAN	LAN	WAN	0	1	2	3	4	SES	PRES	ACSE	MHS	FTAM	VTP
Mercury	♦	7								♦	♦						
NCR	♦	◊	◊	◊	◊	◊	S		S		S	S	◊	◊	◊	S	
Nixdorf		♦	∅	∅	♦	∅	♦		♦		♦	♦	♦	♦	♦	♦	
Norsk Data	♦	♦	♦	♦	♦	♦	♦		♦		♦	♦	◊	◊	♦	◊	◊
Olivetti	♦	9		♦	♦	♦	♦		♦		♦	♦	♦	♦	♦	♦	◊
OSIware	◊	◊	◊	◊			♦	◊	◊	◊	◊	♦	♦	♦	♦		
Philips TDS	♦	♦		▽		▽	♦		♦		♦	♦	▽	▽	▽	▽	
Plessey	♦	∅					◊					◊		◊			
Prime	♦	♦	♦	♦	◊	◊	♦		♦			♦	♦		◊	♦	
Racal Milgo	♦	♦	♦	♦	♦	♦	♦	♦	♦	▽		♦	♦	♦	♦		♦
Rank Xerox	♦	1	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	◊	♦	♦	
Retix*	♦	♦	♦	♦	♦	♦	♦		♦		♦	♦	♦	♦	♦		♦
Siemens	♦	◊		♦	♦		♦		♦		♦	♦	▽	◊	▽	◊	
Spider	♦	♦	♦	♦	♦	♦	♦		♦		♦						
Stratus	♦	◊	♦	♦	♦	♦	♦	♦	♦	♦	♦		◊	◊	◊		
Sun	♦	♦	♦	♦	♦		♦				♦	♦	♦	♦	♦		◊
Tandem	♦	♦		♦	♦		♦	♦	♦	♦	♦	♦	0	0	◊	◊	
Unisys	♦	♦		♦	♦		♦		♦		♦	♦	◊	◊	♦		
Wang	♦	♦	◊	◊	♦	♦	♦		♦		♦	♦	∅	∅	♦	∅	

Key to table:

*	MMS also available	9	Figure indicates year planned
♦	Available		7=1987, 8=1988, 9=1989, 0=1990, 1=1991
▽	Available on part of product range	S	Special product or prototype for demonstration purposes
◊	Planned		
∅	Planned for part of product range		

SPAG: HISTORY, FUNCTIONS AND ACHIEVEMENTS

WHAT IS SPAG?

The Standards Promotion and Application Group (SPAG) was founded in 1983 as a "Round Table" of European Information Technology Companies. The Commission of the European Communities (CEC) was also instrumental in the creation of SPAG to co-ordinate activities within Europe towards the development of European Functional Standards. SPAG became a company registered under Belgian law as SPAG Services s.a. in 1986. SPAG's mission is to achieve an open international market for the computer and telecommunications industry, based on harmonised standards, testing and certification of OSI products.

SPAG'S CONNECTION WITH THE CEC

SPAG is involved actively in a wide range of CEC research projects. The results from ESPRIT Project 955 Phase 3 CNMA-CCT (Communication Network for Manufacturing Applications - CNMA Conformance Testing) which developed conformance test tools, are now being exploited commercially through the SPAG-CCT consortium. ESPRIT Project 2292 TT-CNMA, for which SPAG is the prime contractor, has just started work. The objectives of the project include the promotion and development of IOP (InterOPerability) Testing, Performance Measurement, Conformance Testing and the Integration of related technology and other CEC work programmes. SPAG is also involved actively in two CTS2 projects: one focusing on

FTAM (File Transfer, Access and Management) where SPAG is developing executable test cases and embedded testing; and the other dedicated to X.400 MHS and X.500 DS where SPAG is concentrating on DS test development and harmonising other DS work within the TT-CNMA project.

Through its involvement in the RACE project PROVE (which stands for PROvision of VErification) SPAG heads a consortium working on recommendations for the standardisation of methods and procedures for Verification of Integrated Broadband Communications. In addition, SPAG's Test Advisory Committee has established a special telecoms task force to investigate the domain of ISDN Narrow Band testing tools and promoting collaboration with other bodies engaged in this field.

SPAG IN STANDARDS AND TESTING

General Overview

- In the area of functional standards SPAG plays a leading role in the European Workshop on Open Systems (EWOS);

- influences the development of International Standards Profiles (ISPs) through the Feeders Forum;

- is helping to shape the international harmonisation effort in conformance testing & certification through the Forum's recently created TLFF-CC Ad-Hoc Group;

- has recently been appointed to chair ETSI's Technical Committee for Advanced Test Methodology (SC2);

- is collaborating with COS and the OSI/Network Management Forum in the U.S. to accelerate the availability and use of OSI standards and test technology for network management;

- SPAG also publishes the Guide to the Use of Standards (GUS) which represents the consensus opinion and support of SPAG's shareholders to developing current and future OSI Functional Standards and OSI conformance and IOP testing methodology.

Testing

SPAG's test laboratory was the first in the world to receive accreditation for MMS (Manufacturing Monitoring System) OSI conformance testing. The test centre received official accreditation from NAMAS (the National Measurement Accreditation Service) in the U.K. in June this year. In addition SPAG provides an IOP test service for MHS and another for FTAM will become available shortly.

Furthermore it markets conformance test tools which are components of the Integrated Tool Set (ITS), a joint development between SPAG-CCT (exploiting the results of CNMA-CCT) and the Corporation for Open Systems (COS).

SPAG's Test Advisory Committee (TAC) recently undertook a major

SPAG: HISTORY, FUNCTIONS AND ACHIEVEMENTS

pan-European survey of the state-of-the-art of Interoperability - the results of which will be available towards the end of the year.

Early in October 1989 it was announced that SPAG and EurOSInet have signed a major collaboration agreement which seeks to harmonise the convergence of OSI conformance and IOP testing methodologies and services.

In addition, the agreement provides for a world-wide base of real-life OSI demonstration to boost user confidence and reflect industry's endorsement in multi-vendor interworking.

SPAG and EurOSInet are confident that the new collaboration agreement will be instrumental in furthering world-wide harmonised implementation of standards in applications and harmonisation of the testing technology - notably in Europe, the Americas and Japan through the newly launched OSIone initiative.

OSIone is a cooperative enterprise between five existing OSI organisations: EurOSInet (Europe), OSIcom (Australia), OSINET (North America), INTAPnet (Japan) and OSNet (Singapore). It was established to promote the availability of computer networking products and services which provide world-wide interoperability.

By joining forces SPAG and EurO-SInet intend to optimise their pooled resources and technical knowledge and experience. Initial-ly, this will involve merging SPAG's testing experience with that of EurOSInet in terms of IOP demonstration through product networking.

In practical terms this will result in agreements on IOP testing specifications and the harmonisation of IOP testing methodology and technology with that of conformance testing. In this way the experience of practical testing gained by EurO-SInet can be captured and the results published.

In the longer term, collaboration between the two organisations will establish a coordinated approach to test technology developments. Practical cooperation between SPAG, EurOSInet and other OSIone members (particularly those responsible for testing definition in the OSIone environment) will also lead to the future publication of IOP tests which are applicable on a world-wide basis.

ACCREDITATION AND CERTIFICATION

Background

In the past, the process of testing, accreditation and certification was managed essentially on a country-by-country basis.

The CEC's endorsement of Open Systems Interconnection (OSI) as a mechanism for opening up the IT market has been translated into CEN's (European Committee for Standardisation) current programme for \ defining European norms (ENVs), ie: functional standards or profiles which can be implemented throughout Europe.

The logical next step was to address the problem of testing, certification and accreditation. A programme was set up by the CEC in 1985 to harmonise Conformance Testing Services (CTS), which resulted in a methodology of harmonising testing of OSI products and the services offered by test laboratories throughout Europe.

Creating an infrastructure to promote mutual recognition and equivalence of testing

The entire European scheme of providing a technical basis for a pan-European scheme to ensure equivalence of results and mutual recognition of certificates between Member States resulted in the M-IT-03, adopted in March 1986 by the IT-STC (Information Technology Steering Committee).

The ECITC (European Committee for Information Technology Certification) comprising representatives from national organisations throughout the Community and EFTA - was set up to implement this scheme under which various Recognition Arrangements (RAs), which report directly to the ECITC, are responsible for coordinating activity in specific functional testing areas. Two such RAs are currently being set up: OSTC (Open Systems Testing Corporation - wide area network applications) and ETCOM (European Testing for Conformance for Office Manufacturing Commit-

SPAG: HISTORY, FUNCTIONS AND ACHIEVEMENTS

tee - local area network applications).

SPAG's involvement in ETCOM for LAN-based OSI testing

ETCOM, which has a pan-European membership of six laboratories including SPAG, is the RA the objectives of which are to provide a full conformance testing capability for all seven layers of the OSI reference model over local area networks. The testing will be undertaken using test tools produced as a result of the LAN-CTS project, the CNMA project and test tools sourced from the Corporation for Open Systems in the United States.

The six laboratories have defined harmonised client documentation in the form of a conformance testing operational requirement specification. This documentation covers the PICS (Protocol Implementation Conformance Statement) and PIX-IT (Protocol Implementation for Extra Information) which a client uses to define the Implementation prior to test and the Final Report which results from the testing.

In order to ensure equivalent test services within the ETCOM arena, a fast track conformance resolution process is being implemented to ensure that any areas of ambiguity within the base specification or test specifications will be removed centrally. Thus, if a product is tested in more than one ETCOM laboratory, the results of such testing will be equivalent.

International liaison

ETCOM has established liaison with all the major players in the open systems conformance testing arena. The laboratories have contributed directly to the World Federation of MAP/TOP Users Conformance Resolution Process, as well as commenced discussions on the subject of harmonisation with OSTC, the other Recognition Arrangement under the M-IT-03 scheme, implemented by the ECITC.

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NEWS from CEN/CENELEC

Fourth edition of Memorandum M-IT-02 approved

The CEN/CENELEC/ETSI Memorandum M-IT-02, the directory of European OSI Functional Standards, had its fourth edition approved by the CEN/CENELEC/ETSI Information Technology Steering Committee (ITSTC) on 28 August 1989. Among the changes from the third edition are the addition of several network relay functions, some revisions of the ODA (Office Document Architecture) functions, revisions of the MHS (Message Handling Systems) functions, the additions of directory functions and the separation of control object functions for Virtual Terminal protocols.

The Memorandum and its supplement - which gives time tables for the work - should have been published by the time you read this.

Security aspects of OSI functional standardisation

The workshop on security aspects of OSI functional standardisation will have taken place on 25 October 1989. Announcement of the event had created a lot of interest, so the time was obviously ripe for this initiative. Readers who want to receive the proceedings of the workshop should contact CEN/CENELEC.

Standardisation of bar coding

A workshop on the European standardisation of bar coding was held on 25-26 September 1989. It resulted in a recommendation to CEN to adopt as European Prestandards (ENVs) the specifications for Codabar, Code 39, Code 128, Interleaved 2 of 5, and the EAN specifications; based on the AIM Europe (AIM = Automatic Identification Manufacturers) and the EAN documents respectively. Further recommendations concern standardisation of a

NEWS from CEN/CENELEC

data element architecture for bar coding, the assignment of registration authority responsibilities and responsibilities for maintenance of any adopted standards.

A report of the workshop can be obtained from CEN.

European functional standards for character sets and their coding

Three European Prestandards have been adopted for character sets and their coding. Work on further standards in this domain is proceeding, but the need for this has been questioned by some parties. A project review team was set up to propose a future course of action for these activities; it met on 5 October 1989. There was a general consensus that the work done so far is useful but that better understanding of its purposes and applications is needed. Based on the findings of the review team, ITSTC will decide in November on future activities.

Quality System Assessment of software producers

A Quality System Assessment Supplement (QSAS) is a guide, based on the EN 29 000 (ISO 9000) series, for people assessing quality system management. CEN has accepted a mandate to standardise such a guide for quality assessment in the area of software production, and an ad-hoc meeting on 31 July 1989 proposed more precise instructions for that work, to be considered by the CEN Technical Board in November.

It should be noted that in addition to the QSASs, there is a need - at least in some areas - for guides on the implementation of the EN 29

000 series by the producer. Such an implementation guide for software production is under work in ISO/TC 176/SC 2/WG 5. Whether or not the finalised work will be a candidate for endorsement as a European Standard has yet to be decided.

Western European EDIFACT Board to become a CEN Associated Body

Consensus was rapidly reached on a draft protocol for the agreement between CEN and the Western European EDIFACT Board where the former accepts the latter as an Associated Body (ASB). The CEN General Assembly in September 1989 asked its President and Secretary General to conclude the agreement.

The ASB will be introducing draft standards at a relatively advanced stage in the CEN procedures. This ease of access is in turn based on the fact that the ASB opens its work processes to the CEN members, so that their participation can be ensured from the beginning.

The documents to be standardised are the different message types elaborated within the EDIFACT framework under the auspices of the UN Economic Commission for Europe.

Two new working groups on Advanced Manufacturing Standardisation

In response to the mandate on STandards for the Exchange of Product definition data (STEP), a working group under the Information Technology Advisory Expert Group on Advanced Manufacturing Technologies (ITAEGM) has been established. Its secretariat is held by AFNOR, and the group first

met in September 1989.

Another mandate within the ITAEGM remit concerns the ergonomic aspects of AMT. No secretariat has yet been found for the working group, however.

Work in progress on the standardisation of ISPBX

The standardisation of ISPBXs (Integrated Services Private Branch eXchanges) is being carried out by CENELEC, ETSI and ECMA jointly within the IT Advisory Expert Group on private Telecommunication networks (ITAEGT). The draft standards are then processed by CENELEC TC 108 to become European standards.

The prENVs 41 004, 41 005 and 41 006 were recently balloted and the results of the ballots will be dealt with by a special Working Group. (The first one was not accepted, the other ones were, but there are comments to take care of.)

The titles of the prENVs are:

- 41 004: Reference configurations for calls through exchanges of private telecommunication networks

- 41 005: Method for the specification of basic and supplementary services of private telecommunication networks

- 41 006: Scenarios for interconnection between exchanges of private telecommunication networks

Proposed European Standards and European Prestandards

This standard proposal has been sent out for ballot (deadline was 15 October 1989):

- prEN 41 001, ISDN connector up to 8 pins and up to 2.048 Mbit/s (version identical to previous ENV 41 001)

NEWS from CEN/CENELEC

It was recently decided that ENV 41 102 (Information systems interconnection; Local Area Networks (LAN); Provision of the OSI connection-mode transport service and the OSI connectionless-mode network service on a CSMA/CD LAN in a single or multiple LAN configuration) in a revised form will be proposed as a prEN. The corresponding ENV for a single LAN only - 41 101 - will not to be transformed into an EN but be kept as an ENV for another two years.

Failed European Prestandard

prENV 41 203 (Information systems interconnection; Exchange of Teletex documents between two End Systems, which may be Teletex terminals) did not pass the ballot which ended a year ago. Steps are in hand to resolve this problem.

Adopted European Prestandards

The following standards proposals have passed the ballot. There are some comments which have to be considered before the standards can be published.

- prENV 41 204, Information systems interconnection; File Transfer, Access and Management (FTAM); Simple file transfer (unstructured). This is a revision of the previous ENV 41 204

- prENV 41 205, Information systems interconnection; File Transfer, Access and Management (FTAM); Positional file transfer (flat)

- prENV 41 206, Information systems interconnection; File Transfer, Access and Management (FTAM); Positional file transfer (flat)

- prENV 41 207, Information systems interconnection; File Transfer, Access and Management (FTAM); Positional file access (flat)

- prENV 41 509, Information systems interconnection; Office Document Architecture (ODA); Document Application Profile; Processable and formatted documents; Basic Character Content

- prENV 41 510, Information systems interconnection; Office Document Architecture (ODA); Document Application Profile; Processable and formatted documents; Extended Mixed Mode

- prENV 41 511, Information systems interconnection; Office Document Architecture (ODA); Document Application Profile; Processable and formatted documents; Simple Messaging Profile

Also passed: The first CEN/CENELEC Report in the IT field, R-IT-01, Evaluation report on CIM architectures.

Naturally, important activities such as actions relating to EWOS (European Workshop on Open Systems) will be noted in future articles

CEN/CENELEC
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IES Sessions at the ESPRIT Conference 1989

Towards OSI-Based Communications (Tuesday, 28 November 9.00 - 10.30),

CACTUS: A Retrospective View: J. Saras, A. Lanceros, J. Berrocal, A. Azcorra, J. Seoane, J. Riera, J. Delgado, F. Jordan, M. Medina

Testing the OSI Directory: S.E. Kille, P. Barker, A.D. Turland
The EUREKA COSINE Project: A.J. Hill, N.K. Newmann
Y-Net: G. Autier

IES Users Forum (Tuesday, 28 November 11.00 - 12.30)

Actual and potential users of the IES services can discuss their needs and hear about current service offerings and future plans. The forum will consist of a series of short presentations on the various existing services and some possible future ones, each talk being followed by a user feedback session.

PROTEAS DATABASE ENTERS SECOND PHASE OF DEVELOPMENT

There is a strong desire throughout Europe to see the results of investment in research turned into tangible products. Unfortunately, the initiators of the many new high technology inventions and ideas frequently lack the necessary skills and facilities required to bridge the gap between R & D and manufacture, production and marketing, so that commercial viability of the new products remains untested.

Many initiatives have started on international, national and local levels to overcome this deficiency. Examples include the Industrial Liaison Offices in U.K. universities, the Transferstelle chain in the FRG or the various ANVAR offices in France. The growing number of Science Parks is also a result of the aim to assist in industrial exploitation of research results.

Within the European Commission (CEC), it is perhaps indicative that the acronym R & D is increasingly being replaced by RTD, which stands for research and technological development. The CEC has approved a Programme which is aimed principally at the valorisation of Community R & D (the VALUE Programme for the Dissemination and Utilisation of Scientific and Technological Research Results) and the promotion of technology transfer (SPRINT), the activities of which cross the boundaries of various Directorate Generals. Other DGs are initiating various forms of financial engineering, such as the Eurotech Capital initiative, which will aim at encouraging venture capital investment in TH-TPS (Transnational High Technology Projects). There are also numerous initiatives within individual DGs to bring research and development closer to the market place.

In this context, the Commission has initiated and supported the development of a database project which aims at promoting the commercial exploitation of Community R & D results. The project, entitled PROTEAS, was first announced in "IES News" in August 1988. A model was presented of a database, then in the planning stage, which would document new technologies, ideas and prototypes arising from European R & D and for which the commercial viability was untested. The database would be accessible through public data networks from anywhere within Europe, and would be searchable using a combination of keywords and free-text to allow systems integrators, commercial and marketing people, venture capitalist, consultants and others to identify developments of potential interest within defined boundaries.

One year on from that first announcement, a pilot database has been implemented, by the IES, in the field of IT & Telecomms. The database features R & D results from most European countries and from a variety of organisations, ranging from large multinational companies to educational research establishments.

Distribution of Entries by Size of Contributing Organisation.	
No of Employees	
< 50	34%
50 - 500	34%
> 500	32%

A cursory analysis of the entries to date shows that the proponents of new ideas on PROTEAS are seeking a wide range of support, from product development, to licensed sale or marketing agreements .

Distribution of Support Requirements for Ideas and New Technologies.	
Support Requirements	
Funding further work	34%
Joint venture agreement	32%
Licensed sale agreement	40%
Marketing agreement	40%
Product development	42%
Research support	33%
Other	4%
(Support requirements are not mutually exclusive)	

The database has been available free-of-charge on user trial since February 1989 and can now boast an impressive list of users. This expanding user base, which covers most European countries, is as varied as the organisations contributing the entries. Within large companies most applications originate from the strategic planning or business development sections which see it

Distribution of Entries by Country of Origin.	
FRG	20%
France	14%
UK	35%
Other (CEC and EFTA)	31%

PROTEAS DATABASE ENTERS SECOND PHASE OF DEVELOPMENT

as a source of investment projects or technology transfer. The Business Development Office of BAe's Sowerby Research Centre, for example, see PROTEAS "as a new avenue to identify collaborative technology opportunities within the CEC".

Other users include manufacturers seeking potential collaboration in the manufacture or exploitation of products, educational institutions seeking industrial collaboration for R & D, technology transfer centres and service companies seeking generally to promote international joint ventures or licence agreements. In applying for access the General Manager of Softek Gesellschaft, a software house which employs less than 50 staff, states: "We see in PROTEAS a very good opportunity to find partners for cooperation in Europe".

A user survey is currently under way to identify user requirements in terms of the quality of the data, coverage, critical mass, frequency of updating, preferred methods of delivery, alternative methods of payment and general appraisal of the service to date.

In parallel with this user trial of IT & T related entries, the PROTEAS project has expanded to cover other sectors of R & D in Europe. This expansion is linked to extensive concertation between various departments of the Commission, under the umbrella of the VALUE Programme, with the aim of providing a horizontal structure

of information collection and dissemination across all R & D Programmes within the CEC.

In order to accommodate this expanded remit, an experimental entry form and database structure have been designed to cover all aspects of R & D under the main categories of Biology and Medicine, Materials and Industrial Manufacturing Technologies, Energy and the Environment (see Sample Entry overleaf). A system of codes has been developed to facilitate submission of entries to the database from multilingual sources. This code-based system, which facilitates the retrieval of data, is intended to complement the detail provided directly by the contributors in free-text-format.

Data collection has recently started to cover all sectors of technology. The new database will replace the pilot one in November 1989, when it will be demonstrated at the ESPRIT Technical week 1989. In Spring 1990, PROTEAS will be included in CORDIS, the Community R & D Information Service, which is being set up under the VALUE Programme to disseminate comprehensive details on the Community R & D Programmes, their Projects, and other associated information.

The long-term aims of PROTEAS are to provide high-quality information on European R & D results, including not only those arising from projects funded by the CEC but also those funded by other national, international, or independent sourc-

es. PROTEAS is still in the pilot phase and will require continuous fine-tuning in response to user requirements. It will be some time before PROTEAS achieves the critical mass required to make it the successful tool for its intended purpose. However, with the coming of 1992, this open market option, whereby any organisation in Western Europe can benefit by either promoting its own developments and requirements at an international level, or by using the database to identify opportunities for commercial applications, provides a valuable platform for horizontal and interdisciplinary collaboration on the exploitation of new technologies in Europe.

Madeleine Campbell
LONGMAN CARTERMILL Ltd
St Andrews
FIFE, Scotland, UK

PROTEAS

SAMPLE ENTRY / DOSSIER ECHANTILLON / MUSTEREINTRAGUNG

ACCESSION NUMBER	99
DATE OF ENTRY	890922
ORGANISATION	AIXTRON GmbH
ORGANISATION TYPE	Manufacturer
NUMBER OF EMPLOYEES	50-500
PARENT COMPANY	The parent company is located in the Federal Republic of Germany
RESULT TYPE	Process/prototype
TITLE	Liquid phase-metal organic vapour epitaxy process for indium phosphide/gallium indium arsenide metal insulator semiconductor field effect transistors
ABSTRACT	A reliable liquid phase-metal organic vapour phase epitaxy (LP-MOVPE) process capable of metal insulator semiconductor field effect transistor (MISFET) device production has been developed on a commercially available MOVPE system. Stable MISFETs with transconductances of 300ms/mm could be fabricated on these structures.
DESCRIPTION	The liquid phase epitaxy (LPE) metal organic vapour phase epitaxy (MOVPE) process data enable the user to produce high quality indium phosphide/gallium indium arsenide heterostructures with well defined electrical properties. The complete process includes silicon doping of gallium indium arsenide and zinc doping of indium phosphide.
	The final result of the process is an indium phosphide/gallium indium arsenide structure for a metal insulator semiconductor field effect transistor (MISFET) device.
INNOVATIVE ASPECTS	This process applies liquid phase-metal organic vapour phase epitaxy (LP-MOVPE) to the preparation of electronic microwave devices. This results in high quality material, not only suitable for the special structure of metal insulator semiconductor field effect transistors (MISFET), but also for a variety of other devices.
SUBJECT CLASS	IT, telecomms; materials, industrial manufacturing technologies
SUBJECT DESCRIPTORS	microelectronics; process engineering; solid state reactors
MARKET APPLICATIONS	telecommunications systems; electrical equipment
STAGE	Available for testing/assessment
TIME EXPENDED	3 man-years
TIME NEEDED	2 man-years
OPERATING ENVIRONMENT	The process is being developed on a particular but standard AIX 200 metal organic vapour phase epitaxy (MOVPE) reactor type.
DOCUMENTATION	intermediate report; final report; publication in scientific literature; other publications
DOC. LANGUAGE	English
PUBLICATIONS	Journal of Cryst Growth, 1988, 279, 285, 312, 359, 382, 34
SUPPORT REQUIRED	further research/development support
SUPPORT DETAILS	We are looking for scientific partners to develop further device structures based on III-V compound semiconductors
FUNDING CLASS	CEC programme
CEC PROGRAMME	ESPRIT
CONTRACT	E 927
CONSULTANCY	We are prepared to commercialise this know-how through consultancy
CONSULTANCY DETAILS	The result is normally transferred to customers, who buy metal organic vapour epitaxy (MOVPE) equipment from AIXTRON. It is also available as consultancy to others.
CONTACT NAME	SCHMITZ, Mr, Dietmar
POSITION	Head of Process Development
DEPARTMENT	Process Development
CONTACT ORGANISATION	AIXTRON GmbH
ADDRESS	Juelicher Strasse 336-338
CITY	Aachen
POSTCODE	5100
COUNTRY	Federal Republic of Germany
TELEPHONE	+49-241-166010
TELEX	8329908
FAX	+49-241-1660140

EUROKOM NEWS

GENERAL.

Volume of usage continues to grow at EuroKom; a number of records has been broken over the past few months:

- New users in one month hit an all-time high in July, with two hundred and forty new registrations. Although this was partly due to the commencement of a large number of Euro Info Centre offices, our average count of new registrations so far this year has been running at about 70-80 per month.
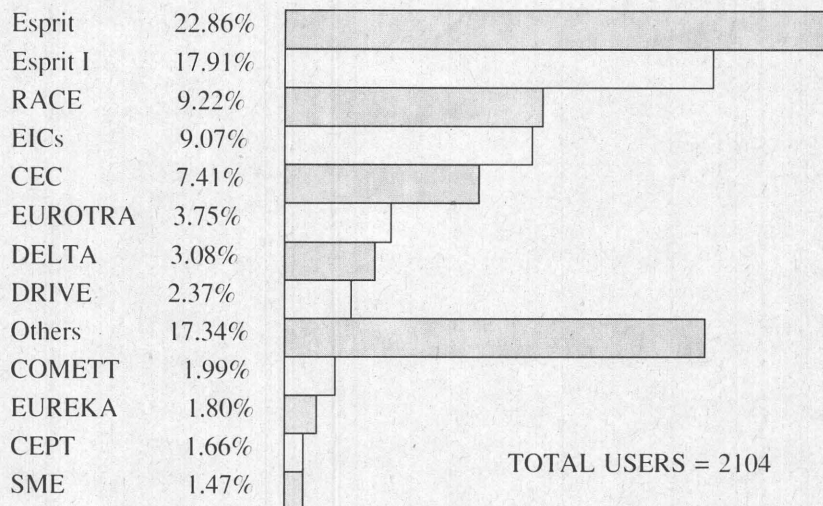
- We crossed the 2,000 registered users "barrier" in July for the first time in this new ESPRIT cycle. Readers will know that usage fluctuates in sympathy with the cycle of ESPRIT projects and Calls for Tender, and whereas we had reached 2,000 registered users towards the end of Esprit One, and had then declined as projects were completed and users fell away, we have come back to this level very much earlier in the current cycle, which augurs well for usage levels over the next couple of years.

- The diversity of groupings continues to increase; Esprit users now constitute only about 50% of the total user community, with usage within RACE, DELTA, and various other groups growing rapidly.

FAX VIA EUROKOM.

We announced our new fax gateway at the beginning of October. There is strong interest in this new facility, particularly among project ad-

User Group Analysis (September 1989)

Group	%
Esprit	22.86%
Esprit I	17.91%
RACE	9.22%
EICs	9.07%
CEC	7.41%
EUROTRA	3.75%
DELTA	3.08%
DRIVE	2.37%
Others	17.34%
COMETT	1.99%
EUREKA	1.80%
CEPT	1.66%
SME	1.47%

TOTAL USERS = 2104

ministrators who have to communicate with a large group of people who use a mixture of technologies such as E-mail, telex, and fax. With the EuroKom gateway to the Fax world, it is now possible to formulate a report, an invitation to a meeting, or an important project announcement, enter it once as a EuroKom text, and, by means of simple commands, disseminate it right away to your correspondents whether they use EuroKom, telex, or simply a fax machine.

Anybody who has had the task of transmitting multiple faxes and telexes will appreciate the simplicity and convenience of the new EuroKom gateway, and we are already finding that it is a very popular enhancement to the service.

THE EURO INFO CENTRES.

Users in the Research and Development community will have noticed a number of Euro Info Centre people scattered about in the PRESENT report during this year. We had, at the start of the year, about 40 of these offices throughout Europe. DG XXIII, the new Directorate General responsible for this activity (previously known as the Task Force SME), decided some months ago to use EuroKom for the second phase of their activities, while they prepare for an Open Call for the various electronic services that they need. As an interim measure while they are finalising their overall requirements, they decided to bring the expanded Euro Info Centre community of 250 offices into EuroKom. As these offices have little need to share traffic with the R&D community, and wanted some functional differences, we have set up a new copy of the EuroKom database just for DG XXIII. Transferring this large group to a dedicated copy of the system will also improve the system performance within both copies. Consequently, although users may have noticed that the Euro Info Centres have apparently suddenly disappeared off the system, they are in fact quite happily working away in their own copy of the database

EUROKOM NEWS

DOCUMENT TRANSFER.

Our facilities for file transfer have in the past occasioned some criticism. Kermit, although well-known and widely available (and free) has distinct limitations, and in particular can be very slow when used over X.25 networks. We conducted a detailed on-line survey during the Summer, to obtain user views and to find out if people had particular preferences for protocols or packages. In general, we intend to make as many protocols available as we can, within the constraints of our resources and time.

Specifically, we are taking the opportunity in this issue to talk about two significant developments with regard to document transfer.

A NEW PACKAGE ON THE HOST.

In response to the complaints that people have had about the throughput rates of Kermit, we have implemented the BLAST product on the VAX, and have acquired a number of copies of the BLAST package for Personal Computers. BLAST, incidentally, runs on most well-known machines including mainframes, microcomputers and mini-computers. We have provided BLAST to a number of selected users over the last few weeks, and initial response has been very positive. First reactions have been:

- The throughput speed is on average 4-5 times faster than Kermit, given the same access method and baud rates.

- Since the PC package looks after all the dialogue with the mainframe, BLAST is much easier to use. The tedious steps involved in leaving the EuroKom service, going to VMS, invoking Kermit, placing it in server mode, etc., are no longer necessary. You simply instruct BLAST on the PC that you want to send or receive a file, and the package takes over and does all of the necessary dialogue with the host.

We are now proceeding to a larger pilot release of the product, and are particularly interested in involving a wide variety of machines. So if there is someone out there who uses Kermit, finds it slow and tedious, and has terminal equipment other than a Personal Computer (we know it works well on these), let us know and we may ask you to participate in the pilot studies.

In the meantime, BLAST is installed and available on the VAX, and can be utilised of by any user who has a local copy of BLAST.

TRANSFERRING FORMATTED DOCUMENTS.

Our literature on the subject of file transfer has always indicated that complex documents, with pagination, graphics, bold text, centering, page numbers, etc., could be exchanged via EuroKom as long as senders and receivers standardised on their word processing software. This is fine if everyone uses a Personal Computer, for example. All participants in a project can simply copy their documents straight from Word or Ventura to a common directory on the host (not in the EuroKom database) and the receiver picks up the document and brings it back into Word or Ventura and finds exactly the same report, complete with graphics and other special formats or characters.

Many users exchange quite complex documents today, using this approach. Indeed, our own reports to our Brussels office pass routinely through the system, and these reports range through Lotus spreadsheets, Manuscript reports, Freelance graphics for planning charts, slides, etc., and dBASE files to update the management systems in both offices.

Where the problem gets a little tricky, however, is in the case of a large consortium such as the SPECS project within RACE. In this case, the Personal Computer is the exception rather than the rule. The members of the consortium use a variety of mainframes, using many different operating systems and access methods to EuroKom, and yet, early in the project, made a number of key decisions:

- They would use EuroKom as a standard means of communication within the consortium, and

- They would use EuroKom to exchange complex, fully type-set documents between consortium members.

To achieve their objectives, they took as a basis Donald Knuth's TeX package, which, like Kermit, runs on a wide variety of computers. They then developed a TeX template, which they implemented as a standard report template for all SPECS documents, and they circulated this template to all participants in the project. The result is that any SPECS member, irrespective of whether he is using a Mac, a mainframe or a Sun, uses exactly the same approach:

- He prepares the document by merging information into the "official" template given to him by

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the project coordinator.

- He then transfers the complete document into EuroKom (since it is just ASCII text it can even be entered directly as a letter in the mail database).

- The receiver simply draws down the file and re-submits it to his own version of TeX, and on his, for example, Bull mainframe he can print the document with exactly the same appearance as it had on the other user's Mac or Sun.

- The SPECS people go a step further, in fact; they have developed a set of standard document structures, and a standard methodology for using EuroKom, which greatly enhances the effectiveness of the system as a project management tool.

A more detailed paper on this topic, prepared with the cooperation of the SPECS consortium, is available from our EuroKom offices (below). This paper provides a fuller description of this highly sophisticated and beneficial use of EuroKom.

CENTRAL EURO-CONTACT.

By the time this issue of IES News goes to press, we will have gone live with the central version of Eurocontact on the EuroKom host machine. As most readers will know, we have been concentrating over recent months on the development and installation of Personal Computer versions of the Eurocontact database in the various European countries. At this point, we have about twenty systems installed with Esprit National Contact Points, at least one per EC and EFTA country. The new "distributed"

Eurocontact system works as follows:

- Potential participants in Esprit programmes approach their National Contact Point and complete, with the help of the NCP staff, a Data Entry Form. This form is then entered into the local PC copy of the Eurocontact database.

- A search for potential partners is performed at this point (each local NCP copy contains the full, European-wide database). The individual researcher hopefully at this point finds details of potential partners and contacts them.

- Periodically, the local database copies are sent to EuroKom where they are consolidated and re-distributed. In this way, the researcher mentioned above now has his data distributed throughout 17 countries, and is available to all other searchers of the databases at the NCP offices in these countries.

This PC version was first used for the MEL (MicroELectronics) call which closed on September 4th, and records are now being accumulated for the Esprit General Call for the areas of Computer Integrated Manufacturing (CIM), Information Processing Systems (IPS), and Office and Business Systems (OBS), which closes on January 10th 1990 and for which there were Proposers Days in Brussels during October (23rd and 30th 1989).

Following the installation of the various national systems, we then moved our attention to the implementation of the central version, which is now completed and ready for use. The consolidated database is available to all registered users of EuroKom, simply by calling a different NUA. When they call this NUA, they will be prompted

for a login name and password; they simply used the same login name and password as they use for EuroKom, and they will be presented with a search screen for Eurocontact (Note: since Eurocontact is a full-screen, function-key driven system, your terminal set-up is much more important than it is in the EuroKom mail environment. However, the entire EuroKom interface changes to full-screen during November, so terminal characteristics will become very important soon in any event).

The new Eurocontact service should provide very effective assistance to the researchers seeking partners for CEC-funded programmes. In the longer term, the database will not be restricted to Esprit, as other programmes are interested in using the service, and having their own data added to the system. The current database structure allows for multiple programs, and we anticipate that the system will expand and develop rapidly.

Further infomation on the above new developments, or any other aspects of the EuroKom services, can be obtained by contacting us at either of the offices below:

EuroKom Dublin
Belfield
Dublin 4
IRELAND
Tel. + 353-1-697890
Fax: + 353-1-838605

EuroKom Brussels
Rue Guimard 15
1040 Brussels
BELGIUM
Tel. + 32-2-5131915
Fax. + 32-2-5132853

Esprit
Information Exchange System
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Issue No 24, November 1989

FUTURE EVENTS

networking. This is the principle we have seen adopted in some networks both in Europe and in the U.S. Experience has shown, however, that this method tempts user abuse and leads to rapid saturation of the network, and abuse is difficult to prevent.

There is thus a need to introduce some form of user charging mechanism. That need represents an important part of the Bill recently introduced in the U.S. Senate by Senator Gore (which is proposing that the U.S. Government should provide $ 400 million over the next 4 years in order to improve the computer networking facilities available to American researchers). What is suggested in the Bill is that full user charging mechanisms be implemented, but only be applied via a system of credits or tokens, so that no money actually changes hands.

The cheaper tariffs in the U.S. have resulted in American research groups readily setting up ad-hoc networking facilities as required, to satisfy their needs for collaborative support. The use of the public X.25 networks should lead to maximum pan-European connectivity for the research community. However, the lack of interest of a satisfactory interconnection of X.25 services at the international level resulted in the need for the implementation of the International X.25 Infrastructure (IXI) pilot, the contract for which was signed in September. The issues involved deserve more open discussion between the researchers, the funders of research and the network providers.

These and other topical issues will be discussed at the IES User Forum which will be held on 28 November at 11 a.m. It is intended that attendees will get the opportunity to express their views, and we look forward to an informative and interesting discussion, to which you are cordially invited.

R.T. SANDERSON
Head of IES

FUTURE EVENTS

Esprit
DGXIII
Telecommunications
Information Industries
and Innovation