
Gesellschaft für
Reaktorsicherheit (GRS) mbH

Proceedings
of the 2nd Workshop on
Information Management

Held in Garching, F.R.G.
October 30 - 31, 1991



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Compiled by K. A. Höpfner

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Contents

| | Pages |
|--|-------|
| Welcoming Address for the 2nd Workshop on Information Management | 1 |
| Specialized Information - Roadways to the World's Knowledge | 5 |
| IMPACT | 11 |
| The Information and Documentation Department at the Fachhochschule Darmstadt | 27 |
| dpa - Database | 39 |
| ESA - IRS Access to over 200 Databases | 45 |
| The new on-line Information System SHERLOCK | 62 |
| The Fachinformationszentrum Karlsruhe and STN International | 85 |
| M.I.S.T. and the STI Activities of C.E.A. | 100 |
| Changing on-line Intermediary Services in Hungary in a changing economical Environment | 107 |
| Dissemination of Information at the Karlsruhe Nuclear Research Center | 117 |
| The Central Library of the GSF Research Centre - not only a Database Supplier | 137 |
| Task and main Areas of Work of the GRS Information and Documentation Service (IuD) | 142 |
| Nuclear Safety Documentation in the IPSN | 152 |
| Public Information and Acceptability | 155 |
| Innovation Data Bases on Environmental Protection in Atomic Power and Industry of the USSR | 160 |
| Power Reactor Information System (PRIS) | 163 |
| British Expertise in Science and Technology | 195 |

| | Pages |
|---|-------|
| ENS Nucnet: Europe's Nuclear News Service open to the World | 200 |
| Paging Relations & Relating Pages: Improving Data Management for Probabilistic Safety Assessment in RISA+ | 203 |
| Development and Operation of Publicly Accessible BTX Environment Information Terminals | 212 |
| TECDO, Information Retrieval System for Technical Documents | 225 |
| Information Management Needs of an End User in a Supreme German Federal Authority | 233 |
| Information Management Concept of the BfS - General Requirements, Nuclear Aspects - | 250 |
| Discussions | 269 |
| List of Participants | |

**Welcoming Address for the 2nd Workshop
on Information Management**

H. - P. Butz

Gesellschaft für Reaktorsicherheit (GRS) mbH, Cologne

Welcoming address for the 2nd Workshop on Information Management

Ladies and gentlemen, dear colleagues,

on behalf of the "Gesellschaft für Reaktorsicherheit" I am very glad to welcome you today to our second "Workshop on Information Management in Nuclear Safety, Radiation Protection and Environmental Protection".

The great interest in this workshop, demonstrated by your participation, indicates to me the relevance of our idea to assemble a conference of experts to discuss this topic area. Compared with our first workshop in Berlin last year, the number of participants has almost doubled. Furthermore, this workshop has gained a strong international significance, which - I believe - has become urgently necessary during these times of political upheaval in Europe. Taking this fact into consideration, the topic areas of nuclear safety, radiation protection, and environmental protection with which we are dealing in Information Management, are certainly international in the true sense of the word.

For this reason I would like to express my sincere gratitude to you for following our invitation and for your readiness to present your experience to us. My special thanks go out to the participants from the eastern European countries who at present still have to face major problems when travelling to the West.

It is the aim of this workshop to achieve within the next two days an extensive exchange of experience on an international level. This is very important to the GRS because it is finding itself in the situation where it quickly gathers the latest information and can make it available again to other users. All the information has to be assessed and adequately processed not only for internal use and for the leading federal authorities but also for the general public.

As a practical result of this workshop I expect that the possibilities for the acquisition of information become more transparent. From our point of view and from that of the authorities this would be of special interest in the field of evaluations, on the regulatory level, and for the work of the press and public relations. The wish has been fulfilled to invite to this workshop the information experts competent in our specialist area. This means that at the end of this workshop we will have available a qualified survey over existing information sources and that we will also have established personal contacts between all levels of interest. All this is of vital importance for effective information management.

In the selection process for the invitations we have taken great care to cover, as widely as possible, all areas of special interest:

- institutions that are actively involved in scientific research,
- institutions that deal with the production and distribution of information,

- institutions that are concerned with the specialist evaluation and processing of information, and finally
- institutions that use information as the basis for recommendations for political or technological action.

We have structured our program according to these areas of special interest.

One rule for effective communication says that one should talk about everything - provided it does not take longer than half an hour. We have narrowed down this rule even more for our program and hope to restrict each contribution to a maximum length of ~~20~~ minutes. Can I please take the opportunity now and ask all contributors to stick to this rule.

Before we start with the first session I have one more obligation to fulfil, and I can say that I do it with great pleasure. I would like to express my sincere gratitude to the Federal Minister for the Environment, Nature Protection and Reactor Safety for giving this workshop his spirited, expert, and financial support. He is represented here by Dr. Hertrich who will illustrate from his point of view of as an end-user his experience and needs concerning Information Management. We hope that there will not be any urgent business calling him prematurely back to Bonn.

I should like to point out that we will be recording the contributions and discussions on audio tape. This is done to help us compile the most important information for a conference report.

My wish for us all is that we may learn a great deal from each other and that we may have many an intensive discussion, also continuing outside the workshop.

Now I would like to open Session One and call the first speaker to the podium. Mr Leisen from the Federal Ministry for Research and Technology will present us his contribution on the information program of the German Federal Government.

**Specialized Information -
Roadways to the World's Knowledge**

R. Leisen

Bundesministerium für Forschung und Technologie, Bonn

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Specialized Information - Roadways to the World's Knowledge

1. Introduction

Voltaire, in a letter to Thieriot, wrote on July 12, 1769:

"The multitude of books is terrifying; but, finally, one handles them like people, by picking one's choice."

This dictum of the philosopher has lost little of its topicality after more than 200 years; more than ever, we are confronted with a growing flood of information:

- The rises in research and development expenditures in all the leading industrialized countries entail a considerable increase in discoveries, findings, and measured data.
- Merely in science and engineering, roughly 4 million specialized publications are produced every year, this is 20,000 per workday.

2. From the Foundation of IDW to the Specialized Information Program of the German Federal Government in 1990-1994

There is growing danger of subjects already investigated being studied again, or results not being available quickly, for specific purposes, and at low cost. The German Federal and State Governments were early in reacting to this danger by establishing the Institut für Dokumentationswesen (IDW), which took up its activities in 1961. One of the main purposes of IDW from the outset has been to grant financial support to documentation projects which, as time went on, has developed into the functions of a projects management organization.

The financial contributions by the Federal States and, in particular, by the Federal Government increased as time went on: In 1974, the Federal Government decided on a Program for the Promotion of Information and Documentation. That program included a structural concept for information and documentation with the establishment of not more than 20 specialized information systems with the associated specialized information centers (Fachinformationszentren).

In 1982, the German Federal Ministry for Research and Technology established the BMFT Action Plan in the Field of Specialized Information for the 1982-1984 Planning Period. At the same time, the German Federal Auditing Court, in an expert opinion, recommended that the specialized information policy of the Federal Government be re-

oriented. Henceforth, specialized information was to be considered a commodity obeying the laws of the market, while the government was to concentrate in particular on establishing the framework for initiatives to be taken by private industries.

This new basic attitude was expressed also in the 1985-1988 Specialized Information Program of the German Federal Government. Since that time, the subsidiarity principle has been upheld, and attempts have been made to establish the appropriate legal and economic boundary conditions.

Kienbaum Unternehmensberatung, an industrial consultant, evaluated the 1985-1988 Specialized Information Program in an independent study published in the second half of 1988. On the basis of those findings, and the results of a nationwide study by the GEWIPLAN consulting company on the use of specialized electronic information at universities, the new Specialized Information Program was drafted.

While the 1985-1988 Specialized Information Program had still focused in particular on promoting ways and means of coping with the flood of information, the 1990-1994 Specialized Information Program of the German Federal Government adopted on August 9, 1990 concentrated on enhanced uses.

The globalization of science and industry has made specialized information a problem of world market policy. Information as a resource has become the fourth production factor to be developed by means of specialized information. This is done in two ways pursued side by side:

- through books and periodicals, and
- through information systems and databases.

3. The Integrated Chemical Information System

As the performance capability of science and industry is becoming more and more dependent on the ability to tap all sources of information available, stimulating the demand has become one of the central points of departure, especially at universities and in small and medium-sized enterprises. One major item continued from earlier programs are ways and means of coping with the flood of information; in this respect, chemical information and its support has assumed a paradigm function for the other electronic, scientific, and technical types of information.

On the basis of chemical structures, and associated by the registration number in CAS, various product lines are expanded, updated, and combined in an integrated chemical information system:

- BEILSTEIN-ONLINE: This is the 1990 award winning database offered completely through STN, Dialog, and, in the future, also through ORBIT/BRS and Data-Star. This development has also resulted in a number of very interesting software products, such as the most advanced substructure search system, which is used in various hosts and information systems. By late 1992, the database is to be supplemented by the literature covering the period between 1980 and 1992.

- GMELIN-ONLINE will be offered through STN in a first stage of completion in late 1991. In this case, the use of the latest information and cataloging techniques promises to achieve considerable effects of rationalization in establishing databases and producing manuals (such as the introduction of an electronic notebook).
- SPECINFO by Chemical Concepts offers the most advanced and most comprehensive information system on spectra in the world, at present containing some 200,000 spectra offered to industries for in-house use. It is to be expanded significantly in the next few years, and it will be made available through STN to the public, especially to universities, as a database in late 1991. Developing an automatic procedure of spectra interpretation is a subject treated in fundamental research.
- CHEMIEINFORM-RX by FIZ Chemie will be offered as a reactions pool of the Chemical Information Service to industries for in-house use. For the first time in the world, a standardized entry procedure for the database and the printed service has been developed in the field of reactions. The database is to be offered also through STN.
- DETHERM is the world's most comprehensive materials database in the field of chemical engineering, containing thermophysics data of about 5700 substances; it is being built up in a joint effort by DECHEMA and the FIZ Chemie together with universities, research establishments, and industry. Also this database, which is of particular interest to process plant engineers, will be made available to the public through STN.

Each of these systems represents the world's largest collection of information in its respective field.

4. Supporting Uses at Universities and Research

Institutions

Universities and research institutions constitute the largest potential of users of specialized scientific and technical information. In a study conducted by GEWIPLAN, a catalog of measures was drafted as a means of improving the use of electronic specialized information at universities; the Conference of University Presidents recommended that this catalog be put into effect. The measures planned serve two purposes:

- Future university graduates are to be qualified so as to be able to conduct database searches in their future professional careers.
- All scientific work should be rendered more efficient as a result of previous database searches.

For this purpose, the Deutsche Physikalische Gesellschaft is running a model experiment with 40 university departments of physics (12 of them in the new German Fede-

ral States) in the period between January 1, 1991 and December 31, 1993. The experiment is to help integrate the use of databases into university teaching and training in physics. The appropriate types of organization are to enable students, pre-diploma and post-graduate students etc. to conduct searches before embarking on a thesis. In addition, adequate lump sum payments for search and telecommunications costs are agreed upon, which can be covered out of university budgets. In this way, also the budgets available for use are to be adapted to actual needs, and a new price structure is to be introduced. In the light of the experience resulting from this model experiment, the German Federal Ministry for Research and Technology will seek to influence the competent German Federal States and universities to make them introduce corresponding regulations also in other disciplines (e.g., chemistry, mathematics, etc.).

In the period between August 1, 1990 and July 31, 1993, the German Federal Ministry for Research and Technology funds an integrated project in the new German Federal States which is run by FIZ Karlsruhe, FIZ Chemie, the Informationszentrum RAUM und BAU of the Fraunhofer-Gesellschaft, and the Technische Informationsbibliothek. Mainly at universities, 138 search stations were connected to the science network (WIN network) of the Verein zur Förderung eines Deutschen Forschungsnetzes (DFN-Verein) by means of telecommunication links. The DFN-Verein assigned high priority to these search locations when connecting them to the WIN network, and also helped to solve local telecommunication problems.

More than 400 information brokers and scientific disseminators were trained in using Western databases. Three supraregional training centers were built at Leuna-Merseburg, Ilmenau, and Potsdam, to provide on-the-spot training in modern information procurement. In another integrated project conducted between July 1, 1991 and December 31, 1994, the use of external databases by universities in the new German Federal States is supported directly. Training measures serve to improve the qualifications for conducting searches, in-house trainers are prepared for internal advanced education; twinning schemes are organized with corresponding agencies in the old Federal States, and meetings are held to exchange experience.

5. Stimulating Demand in Small and Medium-sized

Enterprises

The program for the first time includes a concept of promoting small and medium-sized enterprises. Although this problem had been mentioned in all the previous programs as well, no specific measures had been provided at the time. The most important project to be mentioned is the MIKUM model experiment.

The Institut der deutschen Wirtschaft (IW) is running a model experiment in which small and medium-sized enterprises (MIKUM) are supported, out of funds provided by the German Federal Ministry for Research and Technology, in procuring information from databases. Those firms in the metal-working industry are eligible for funding which conduct research and development on their own and have either less than 500 employees or less than DM 100 million annual sales.

- In MIKUM A, small and medium-sized enterprises may place search orders with commercial information brokers and will receive a maximum grant-in-aid (50%) of DM 5000 for search bills running up to DM 10,000 in a graded scheme easy to manage.
- In MIKUM B, small and medium-sized enterprises planning to do their own searches are eligible for grants-in-aid towards the establishment and expansion of in-house information capacities up to a maximum of DM 42,500 (50%) out of DM 85,000 expenses incurred in advanced training of staff, installing a search station, and beginning to use databases.

Within the framework of this funding concept, also model "Information Agencies" were built up to show, on request, to small and medium-sized enterprises, also crafts and trades and the liberal professions, all accessible sources of specialized information, particularly in the R&D sector, but also in other areas and, if required, to add consulting services.

Three pilot projects are testing this comprehensive service designed to disseminate scientific and technical as well as industrial information:

- The central search service for tax consultants run by DATEV in Nuremberg, the approx. 30,000 members of which advise roughly one million of small and medium-sized enterprises.
- The German SVP consulting service of ONLINE GmbH, Heidelberg, in a worldwide association with 35 foreign SVP partners, whose new outposts are available to small and medium-sized enterprises in the Munich, Stuttgart, Frankfurt, Hanover, and Hamburg regions.
- The ARCONIS information service of the Informationszentrum RAUM und BAU run by the Fraunhofer-Gesellschaft in Stuttgart for small and medium-sized firms in the building trade.

Acting through FIZ Technik and DITR within the German Standards Organization, DIN, the German Federal Ministry of Economics enables more than 150 institutions close to industry in the new German Federal States to access Western databases. Since 1990, it has supported some 25 information brokerage agencies in institutions associated with industry, in order to integrate their documentations into the databases of FIZ Technik and, for an interim period of time, ensure the supply of information to various branches of industry; in addition, the Ministry equips the Chambers of Industry and Commerce and Chambers of Commerce with modern communication systems. The PATOS patent database is offered to small and medium-sized enterprises in the new Federal States as a CD-ROM.

The German Federal Ministry for Research and Technology has agreed to support a patent publication center in Halle for the State of Saxony-Anhalt, and an information brokerage office with the Leipzig Chamber of Industry and Commerce, and is looking into the installation of other information brokerage agencies. The small and medium-sized enterprises in the five new Federal States are free to participate in the MIKUM model experiment and to use the information agencies; for this purpose, four outstations of ARCONIS have been set up in the new German Federal States.

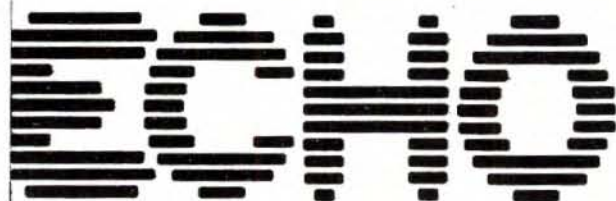
Focusing on more efficiency in the use of databases is particularly important in the new Federal States. Efficient supplies of information and literature to research and university teaching, science, and industry are essential in those states in order to raise the standards of scientific and industrial performance to an international level in a minimum of time.

How this infrastructure is going to be used will depend decisively on the development of industry and science in the new Federal States. The "Gemeinschaftswerk Aufschwung Ost" launched by the German Federal Government to cover industrial activities and those by the German Federal Ministry for Research and Technology in the sector of scientific developments, represents a proper point of departure from which to overcome the present difficult situation in the new German Federal States as quickly as possible.

IMPACT

R. Haber

European Commission Host Organisation (ECHO), Luxembourg



A team of experts helping the Commission of the European Communities under the IMPACT programme to widen the market for electronic information services by stimulating their use.



Commission of the European Communities

**Directorate General XIII
TELECOMMUNICATIONS, INFORMATION
INDUSTRIES AND INNOVATION**

Directorate B: Information Industry and Market

XIII/B/1 - Information Services Market Policy

XIII/B/2 - Pilot and demonstration projects

**XIII/B/3 - Information and communication technologies
applied to libraries**

XIII/B/4 - Linguistic engineering - Applications of SYSTRAN

**XIII/B/5 - Research and development in advanced translation
EUROTRA**



IMPACT

Role of Information Services

- **Strategic Importance for economic and social development**
- **Manufacturing and service Industries are Information dependent**
- **Basic Ingredients for the healthy functioning of Europe's democratic systems**
- **A major Industry In Its own**



INFORMATION MARKET - CURRENT SITUATION

Domination by the USA in terms of:

- **Production of Databases**
- **Turnover**
- **Private sector Involvement**

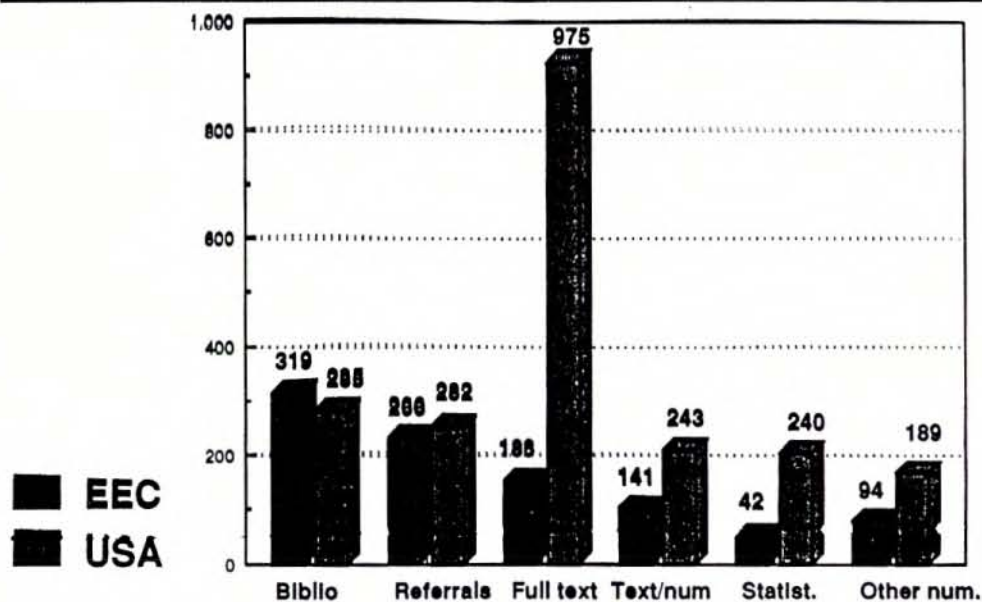
Specific Problems of Europe:

- **Linguistic, technical, legal barriers**
- **No economies of scale**
- **Small actors**
- **Disparities between Member States**



INFORMATION MARKET - CURRENT SITUATION

Database production in the EEC and the USA



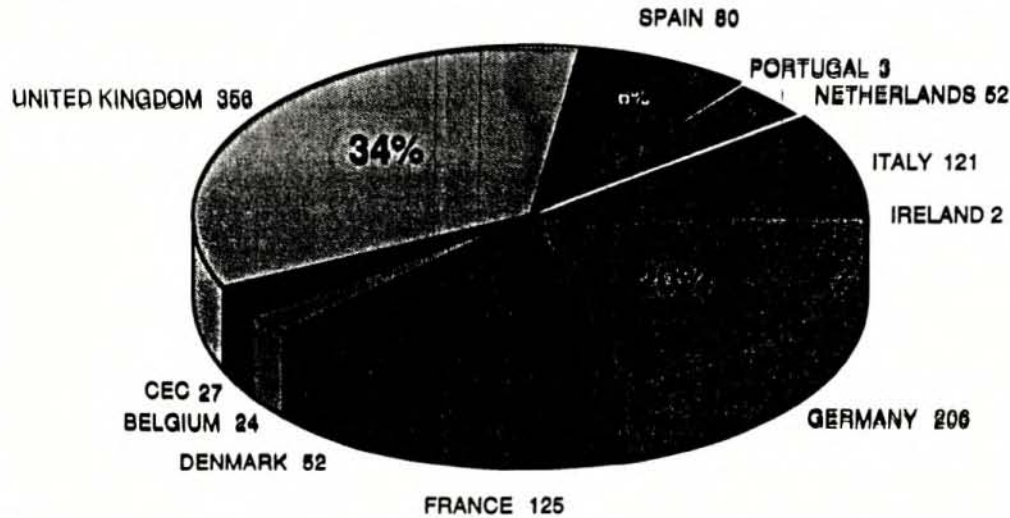
4-E

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INFORMATION MARKET - CURRENT SITUATION

Distribution of production per country



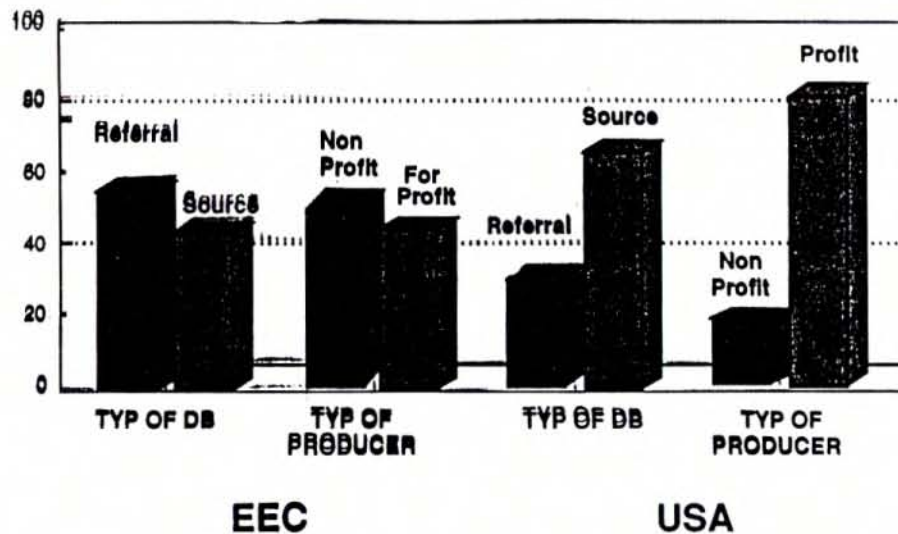
5-E

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INFORMATION MARKET - CURRENT SITUATION
Distribution in %
of databases hosted



8-E



IMPACT I Information Market Policy Actions

- 2 years Community Action Plan 1989-1990
Development of an Information Services Market**
- Council decision of 26th July 1988**
- Budget of 36 MECU**
- Senior Officials Advisory Committee (SOAC)**



IMPACT I Objectives

- to set up an internal Information services market**
- to improve the competitiveness of Information service providers**
- to promote the use of advanced Information services**
- to achieve Community cohesion**

10-E



IMPACT I Action-lines

- Information Market Observatory - IMO**
- Overcoming technical, administrative and legal barriers - LAB**
- Improvement of transmitting and accessing Information services**
- Synergy between Public and Private Sectors**
- Promoting Use of European Information Services**
- Preparation of Libraries Programme**
- Pilot and demonstration projects**

11-E

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JGO39



IMPACT I - Results AWARENESS ACTIVITIES

- Multilingual brochures**
- Inventory of European Information Services**
- Educational videos**
- Offline Training diskette**
- Seminars, Workshops, Exhibitions**
- Freephone Help Desk**
- Innovative Experiments**
- ECHO database services**



IMPACT I

Pilot and Demonstration projects

Subject Areas:

- **Patent Information**
- **Image Banks**
- **Intelligent Interfaces**
- **Tourism Information**
- **Information on Standards**
- **Road Transport Information**
- **(Cooperation between Libraries)**

15-E



IMPACT I

Pilot and Demonstration projects

Evaluation Criteria

- **Impact on Information Services Market**
- **Large-Scale Projects**
- **International Cooperation**
- **Conformity with Work Plans**
- **Opening of New Markets**
- **Application and promotion of Standards**
- **Easy access by Non-Expert professional Users**
- **Application of Advanced Information Technology**
- **Linguistic and geographical coverage**



IMPACT I Pilot and Demonstration projects

Market response

- 2500 Information packages to 1300 Organisations
- 178 Project proposals from 730 Organisations
- Total project costs 488 MECU
- Requested Commission funds 161 MECU
- Available Commission budget 23 MECU

| priority area | Number of proposals | Number of accepted proposals |
|------------------------|---------------------|------------------------------|
| Patents | 27 | 3 |
| Image Banks | 4 | 0 |
| Intelligent interfaces | 46 | 6 |
| Tourism | 13 | 1 |
| Standards | 26 | 2 |
| Road Transport | 11 | 2 |
| TOTAL | 178 | 19 |

17-E

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JGO44



IMPACT 2

- **Consultation of Information Market participants and SOAC**
- **Main phase of the IMPACT programme**
- **Four Years duration (1991-1994) - 64 MECU**
- **Objectives are similar to IMPACT I**
- **New mechanisms**
- **Evaluation of achieved results**
- **4 Action lines**



IMPACT 2 Action lines

- 1 Improving the understanding of the market**
- 2 Overcoming legal and administrative barriers**
- 3 Increasing user-friendliness and improving information literacy**
- 4 Supporting strategic information initiatives**

**The Information and Documentation
Department at the Fachhochschule Darmstadt**

J. Kind

Fachhochschule Darmstadt,

Fachbereich Information u. Dokumentation (IuD)

J. Kind

**The Information and Documentation Department at the
Fachhochschule Darmstadt**

1. Introduction (Transparency 1)

The Information and Documentation Department of the Fachhochschule Darmstadt (FHD) was established in 1985 to continue the training of graduated documentalists (Diplom-Dokumentare), which had formerly been the responsibility of the Lehrinstitut für Dokumentationswesen (LID), but with changed curricula and with an officially recognized title. In line with plans, eight university teachers train approx. 250 students for a period of approximately eight terms (four years). For this new department, an internal limitation of access was determined from the outset, also in the light of the labor market, as a consequence of which the annual intake of new students is limited to approx. 70. In 1991, 185 had applied for admission.

The course of studies, which follows a practice-oriented outline as specified in the statutes of "Fachhochschulen" (colleges for higher professional training), is subdivided into three major units:

- Two terms of fundamental studies.
- Five months of practice in industry.
- Five terms of compulsory studies specializing in media/industrial information, on the one hand, and chemical information, on the other hand.

A diploma thesis is written in the last term of the compulsory course of studies. After successful completion of studies, the graduate student is awarded the academic title of "Diplominformationswirt/in". This new title also was to express the change in emphasis in the curricula, as will be explained in greater detail below.

2. Fundamental Studies (Transparency 2)

The original plans had foreseen separate courses of study, from the first term on, for the two subjects, namely media/industrial information and chemical information. As that concept proved to be unfeasible, a joint two-term fundamental course of study was set up for all students of information and documentation. Besides providing an overview in information and documentation in Germany and in the basic principles of media/industrial information and chemical information, lectures and courses focus on these four main aspects:

- Technical aspects of information systems.
- Practical aspects of information systems.
- Information methodology.
- Information management.

The basic principles of computer design, the MS-DOS operating system and of databases are taught in a course on "Technology of Information Systems." "Practical Aspects of Information Systems" provides an introductory survey of printed information services, such as bibliographies, abstract journals, and profile services. An introduction to on-line databases is followed by the practical use of various databases on different hosts. In a laboratory equipped with 12 search stations, students can conduct searches in the databases of ECHO and DIALOG, among others.

The formal retrieval and contextual evaluation of documents by means of the appropriate tools, such as thesaurus and classification, is one of the major topics under the heading of "Information Methodology." Students design database structures for specific applications, retrieve documents, build up full-text databases and relational databases based on PCs. "Information Management" includes the buildup and organization of information and documentation agencies.

3. Practical Term (Transparency 3)

The practical term is the fourth study term for the media/industrial information course, and the sixth study term for chemical information. In that term, the students spend five months in an external institution of the media, industry or chemistry. These trainee positions, in which practical experience can be accumulated, are in principle obtained by the university teachers (in specific cases, students will find their own trainee positions where to acquire practical experience); they are preferably found in these branches of industry and business:

- Business consultants.
- Banks.
- Database vendors and database producers.
- Industries.
- Publishing houses and broadcasting stations.

While acquiring practical experience, students cooperate in the day-to-day business at hand and, in addition, complete an independent project study of their own. In the course of two whole-day colloquies, students report to the Information and Documentation Department about their trainee jobs and their project studies. In this practical phase, each student is assigned a university teacher to act as contact whenever problems arise, and to visit the student "on the spot," especially in new trainee positions. Past experience has shown that these trainee periods are a very important supplement to the normal course of studies at the university. Indeed, they frequently are the starting point of a long phase of cooperation between students and the firms or institutions where they spent their practical term.

4. Compulsory Course of Studies: Intensification and Specialization (Transparency 4)

Intensifying the curricula of the fundamental course of studies as well as specializing in the media/industrial information course of studies is organized as follows:

In courses on "Technical Aspects of Information Systems," the UNIX operating system is introduced and working with UNIX is tried in hands-on experiments. Relational data-

bases are presented in detail and are set up with a database system. The structures and the application of data communication networks, such as LAN and WAN, are explained. Industrial and media databases represent major items in the "practical university courses." Important databases about markets, firms, and media on various hosts (among them Datastar, DIALOG, DPA) are searched. The external information is integrated into in-house information systems (including office systems based on PC-LAN and UNIX) and processed, communicated and managed electronically. "Information Methodology" in the compulsory course of studies presents applications of artificial intelligence, testing "intelligent" retrieval methods based, for instance, on statistical or linguistic approaches. In the courses on "Economics," "Business Administration," and "Mass Communication," students are taught the specialized knowledge they need for their subsequent work in the information sector.

5. Future Curricula (Transparencies 5-7)

The Information and Documentation Department seeks to train information specialists able to meet requirements in a practical profession. Practical work on and with information is characterized by uses of technologies which are changing more and more rapidly. Consequently, also the curricula, which are based on practical requirements, need to be changed and need to take into account technology and applications of technology more than before. In the same way, more "conventional" knowledge about information and documentation will have to be compressed in the way it is presented.

In addition to external on-line databases, the structures and uses of in-house information systems based on networked PCs or UNIX computers will play an important role. In addition to information systems providing text information, also systems for multimedia documents will be covered in the courses.

The labor market demands more and more technical know-how of future information specialists. The contents of curricula therefore must be adapted to these requirements. In a survey recently conducted among the first graduates of the Department, it was seen that these former students want to acquire more knowledge in

- the application of operating systems,
- telecommunications, and
- application software.

Darmstadt Polytechnic
Information & Documentation Department

Main requirements

- 1. Operating systems**
- 2. Telecommunication knowledge
(e.g. LAN , WAN)**
- 3. Applications software**

Darmstadt Polytechnic Information & Documentation Department

- **Market demands more technical know-how of future information specialists**
- **Graduates of our department have expressed following requirements in a poll conducted recently within a project at our department : ----->**

Darmstadt Polytechnic

Information & Documentation Department

Content of the course changes over time

- **More technology and applications**
- **Less traditional information & documentation**
- **External databases as well as increasingly internal information systems on the basis of**
 - **networked PCs or**
 - **UNIX-workstations**

Reasons :----->

Darmstadt Polytechnic

Information & Documentation Department

**Media/business information central course :
in-depth studies and specialization**

- * Technology : e.g. UNIX , relational databases , data communications)**

- * Practice : business & media databases , office systems , electronic document management**

- * Methodology : AI - applications , retrieval methods based on linguistics and statistics**

- * Special subjects : business studies , economics , mass communication**

Darmstadt Polytechnic

Information & Documentation Department

Practical semester

- **5 months in external organizations in the media or industry**
- **Engaged in day-to-day work**
- **Carrying out their own project**
- **Students report with a presentation to their course colleagues and tutors twice in this semester**

Darmstadt Polytechnic

Information & Documentation Department

Basic studies course

- ★ **Fundamentals of information technology**
(e.g. hardware , MS-DOS , databases)
- ★ **Fundamentals of usage of online-databases**
and information services
- ★ **Fundamentals of information methodology**
(e.g. thesaurus , classification , indexing ,
abstracting , data structures)
- ★ **Fundamentals of information management**

Darmstadt Polytechnic

Information & Documentation Department

- * Founded 1985
- * 200 students , yearly new intake 70 students
(limited intake)
- * 8 lecturers
- * 8 semester course with a practical orientation:
 - 2 semester basic studies course
 - 1 practical semester in industry
lasting 5 full months
 - Central course with two specialisations:
 - + Media/business information
 - + Chemical information
- * Degree : Dipl.-Informationswirt/in

dpa - Database

A. Schilling

Deutsche Presse - Agentur (dpa), Hamburg

dpa is the leading news agency in the German speaking world.

As an international agency, it distributes news services throughout the world. In the Federal Republic , these include the photo services.

Outside Germany, dpa distributes the European service in German, Spanish language services to Latin America, Spain and Portugal, English language services to North America, Asia, Africa and The Middle East and the dpa International service to The Middle East in Arabic language.

dpa is owned by the German media and free of all official influence.

One of its services to the media is the dpa-database.

First of all: The dpa-database contains only german text.

The essential part of our database is the dpa-Nachrichtendatenbank, the dpa-news databank. It contains the original text of all news items distributed by the agency in the Federal Republic during the last 2 years. That means news distributed via the domestic wire of dpa with national and foreign news items and 12 regional wire services (Berlin/Brandenburg, Schleswig-Holstein/Hamburg, Niedersachsen/Bremen, Nordrhein-Westfalen, Hessen, Südwest for Baden-Württemberg, Bayern, Mecklenburg-Vorpommern, Sachsen-Anhalt, Thüringen, Sachsen).

These services comprise a daily total of about 1200 news items in the field of politics, economics, culture, sports and miscellaneous events.

The dpa-news databank is organized in quarterly pools established for the domestic service and the regional services.

The youngest pool each of the domestic and the regional wires contains the news dpa distributed since the 1st of oktober until last night.

You may say that in the dpa-news databank are to be found most of the news one has read in the newspapers during the last 2 years - and more than that, given the fact that any newspaper publishes only a small part of the news distributed by agencies.

To facilitate the search in our news databank (and in the other dpa-databanks I will come to later) dpa organized the materials in 38 categories, so called CODES. 2 of these codes will be of special interest to you: Energy and environment.

Under ENERGY you find news items concerning

- energy policy
- coal, oil, gas
- electricity
- nuclear energy
- solar energy
- water-supply

Under ENVIRONMENT you find news items concerning

- politics concerning environment
- pollution of environment,
pollution of air and water,
- waldsterben (as you are aware has become an international term) ,
- dangerous chemicals
- radioactivity

as well as preservation of natural beauty and wildlife.

The dpa-news databank doesn't contain specialized or scientific reports but only news items presumed to be of interest to the reader of newspapers.

Typical searches could be for example:

"What happened in Tschernobyl last month?"

"What did our minister Müllemann say about nuclear energy lately?"

"What happened during the last two weeks in Bavaria concerning pollution of water?"

In total the dpa-news databank contains more than 600.000 news items. Of those the category energy alone comprises of about 9.000, the category environment about 22.000 news items.

In addition to our news databank there are other databanks which I would like to describe as follows.

One of them for example contains only short news items: The dpa-kurznachrichten.

Basis of this databank is a special wire containing spot news. This provides clients with 80 to 100 items daily covering only the more important events worldwide concerning politics, economics, culture, sports, and miscellaneous fields. None of these items is longer than 12 lines.

This special news service is organized in our data bank in 2 pools: One dates back to the 1st of July 1989 and ends at the 30th of June 1991, the other one begins at the 1st of July 1991 and will remain open up to the end of June 1993. Updates are concluded last night.

dpa established this databank upon request of our databank users asking for a databank without quarterly pools in addition to the dpa-news databank.

One of my favourite data banks is what we call the dpa-chronik.

In this data bank are stored only the most important news items on a monthly basis and in a very compact form.

That means if you look for the day, Mr. Konrad Lorenz died, you will find the answer in the dpa-chronik without going through masses of material.

Or when you need last year's winner of a NOBELPREIS you will find that easily in this databank.

You find also answers to questions as

"Was there a smog alarm in Berlin in 1987?"

"What's about the balances of VEBA in 1989 and 1990?"

"Where were there any problems with Krümmel during the last years?"

If you need detailed information you switch (for example) to the dpa-news databank, where you find the original texts of the news items very quickly now that you know the exact date of the event.

The dpa-chronik dates back to the 1st of January 1987 and contains about 9.000 items. That shows that we really stored only the most important news items. In comparison I may remind you that we are entering about 8.500 news items in the news databank weekly.

Of course the dpa-chronik can't be as up to date as the databanks I described before: You can't know which are the most important news of a month until the month is over.

Then there is the dpa-background, where you find compact explanations to complicated topics and topical events as well as descriptions of personality since March 1983.

The conditions for the use of all these databanks are the same: Fees depend on the time you work in the databank.

Subscribers of one of our news services pay DM 250,-- per hour, others DM 300,--. The one time charge for a password is DM 500,--. Training fees amount to DM 450,-- per day, if there are no more than 4 trainees.

Of course you don't pay the fee for a full hour if you are connected with our data bank just 5 1/2 minutes - than you pay for the 5 1/2 minutes only. (DM 23,--/DM 27,50)

Now I would like to introduce you to 2 others of our databanks to you which we opened for external users only at the beginning of this month.

First there is the databank called dpa-kurzdokumentation. In contrary to the dpa-chronik with the extremely short texts you find in this data bank extensive texts.

This data bank contains historic listings of major events mainly concerning politics and catastrophies. (There might not be such a difference).

Some of these listings date back to the beginning of this century as for example

"the worst accidents in tunnels".

You can search for "catastrophies concerning oil transport" as well as political themes as "presidents of the BND" or "women in parlements".

Then there is an other sort of texts in the dpa-kurzdokumentation: The so called slug words which is a sort of lexikon where terms are to be found as Formaldehyd for example.

You can imagine that it takes a lot of journalistic and documentary work to produce these texts, especially the historic listings.

Therefore we have to ask an additional fee amounting to DM 35,-- per document shown.

These conditions are valid also for the following databank: The lists of governments.

In this databank you find all the governments of the world (und außerdem die landesregierungen der Bundesrepublik Deutschland).

Every change in government is registered as soon as known.

Last but not least there is one data bank which is accessible only for subscribers of our news services: The databank dpa-aktuell.

This data bank is updated every 3 hours.

Speaking of our subscribers includes of course subscribers of our topical selective service, too. By this topical service we provide customers with such news items selected from our german news services which are of special interest to them.

The customer defines the subjects, categories, names, institutions in which he is interested in, and our database computer selects such items for him automatically.

The dpa-selective service was established to supply customers outside the media with information, customers who don't want to look through hundreds of news a day in order to find the 50 or 60 news items they are interested in.

This job dpa is doing for them: Our computer is reading all the news which dpa is distributing at the very moment to the newspapers and broadcasters, and is selecting all the news the customer defined beforehand.

The selected news items are transmitted within minutes automatically to the customer, via datex-p (packet switching), which is needed for the search in our database, too, teletex, telefax or by mail.

And it is the dpa-selective service we have to thank for the CODES which are so helpful to find quick answers in the dpa data bank. Without these codes we couldn't guarantee that a customer gets the news he wants.

Especially the german speakers among you know that about every word in the german language has more than 3 different meanings. Egon Erwin Kisch once wrote that there are 26 meanings of the german word ZUG. (train, pull, draft ...)

Think of the word ENERGY: If we would tell our database computer to look for all news items containing this term, a customer would get all news about sportsmen or others who are full of energy.

Back to our customer. He is interested only in news items concerning several aspects of "energy". Therefore we combine the code ENERGY with all the words which might have some connection to the sort of energy of which he really is interested in.

ESA - IRS

Access to over 200 Databases

J. Brinkmann

European Space Agency - Information Retrieval Service,
ESA - IRS, Frascati

E S A - I R S

THE OFFER:

Access to over 200 databases:

- Science
- Technology
- Business
- News
- Market research
- Travel information

60 million records

Private file service

Gateway services

National Centers

Remote printing

E S A - I R S

FIRST TO OFFER:

Online service in Europe

Dial-up access

Access to distributed databases

Frequency analysis

Legal download service

Parallel file searching

Pricing for Information

Hypertext online

NEW
on
ESA - IRS:
HYPERLINE
or
HYPERTEXT
in
Online
Information
Retrieval

begin ntis

<= USER INPUT

-----17Oct91 11:44:29 User00179--
 0.57 AU 3.44 Minutes in File 1
 5.00 AU Session charge
 5.57 AU approx Total

File 6:NTIS:1964-91,19

SET ITEMS DESCRIPTION +=OR;*=AND;-=NOT

ENTER-hl nuclear safety in germany

<= USER INPUT

EsaQuest is looking for related candidate terms

Your Input:

1 - NUCLEAR SAFETY IN GERMANY

 Related thesaurus terms :

2 - REACTOR SAFETY
 3 - NUCLEAR POWER PLANTS
 4 - MEETINGS
 5 - FEDERAL REPUBLIC OF GERMANY
 6 - SAFETY

 Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
 (T)op list, h(I)story, (H)elp or (Q)uit : g2

<= USER INPUT

The term <REACTOR SAFETY> is selected

Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (A)elp or (Q)uit : g3 <= USER INPUT

The term <NUCLEAR POWER PLANTS> is selected

Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (A)elp or (Q)uit : g5 <= USER INPUT

The term <FEDERAL REPUBLIC OF GERMANY> is selected

Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (A)elp or (Q)uit : g6 <= USER INPUT

The term <SAFETY> is selected

Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (A)elp or (Q)uit : c <= USER INPUT

Ref. Index-term

7 - LOSS OF COOLANT
8 - MATHEMATICAL MODELS
9 - PROCEEDINGS

Enter (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (H)elp or (Q)uit : n7

<= USER INPUT

----- thesaurus term LOSS OF COOLANT -----

| Ref | Items term | Relationship |
|-----|------------------------|--------------|
| 1 | 3704 LOSS OF COOLANT | |
| 2 | 2665 COOLANTS | Related term |
| 3 | 5911 LEAKAGE | Related term |
| 4 | 15950 LOSSES | Related term |
| 5 | 1568 NUCLEAR REACTORS | Related term |
| 6 | 2751 REACTOR MATERIALS | Related term |
| 7 | 20530 ACCIDENTS | Broader term |
| 8 | COOLANT LOSS | Used for |

Enter (N)avigate, (B)ack navigate, (S)how item, (G)et term,
(T)op list, h(I)story, (H)elp or (Q)uit : g5

<= USER INPUT

The term <NUCLEAR REACTORS> is selected

Enter (N)avigate, (B)ack navigate, (S)how item, (G)et term,
(T)op list, h(I)story, (H)elp or (Q)uit : t

<= USER INPUT

Your Input:

1 - NUCLEAR SAFETY IN GERMANY

Related thesaurus terms :

2 - REACTOR SAFETY
3 - NUCLEAR POWER PLANTS
4 - MEETINGS
5 - FEDERAL REPUBLIC OF GERMANY
6 - SAFETY

Enter (C)ontinue, (N)avigate, (S)how item, (G)et term
(T)op list, h(I)story, (A)elp or (Q)uit : q <= USER INPUT

Set(s) generation. Please wait

---- below are sets generated during HYPERLINE session ----

| SET | ITEMS | DESCRIPTION |
|-----|-------|-----------------------------|
| 1 | 8394 | REACTOR SAFETY |
| 2 | 11915 | NUCLEAR POWER PLANTS |
| 3 | 3164 | FEDERAL REPUBLIC OF GERMANY |
| 4 | 79795 | SAFETY |
| 5 | 1568 | NUCLEAR REACTORS |

Hyperline completed

Continue with EsaQuest commands

| | | |
|---------------|---------------------|---------------|
| ENTER-combine | (2 or 5) and 4 | <= USER INPUT |
| 6 | 4717 (2 OR 5) AND 4 | |
| ENTER-combine | 6 or 1 | <= USER INPUT |
| 7 | 12059 6 OR 1 | |
| ENTER-combine | 7 and 3 | <= USER INPUT |
| 8 | 230 7 AND 3 | |
| ENTER-limit | 8/88-91 | <= USER INPUT |
| 9 | 96 8/88-91 | |

ENTER-t 9/s/1-10

<= USER INPUT

TYPE 9/S/1-5

Quest Accession Number : 91049482

NTIS

Kernenergie in der DDR. Eine Dokumentation fuer das Deutsche Atomforum e.V. Ergaenzungsband. (Nuclear energy in the GDR. A documentation on behalf of Deutsches Atomforum e.V. Supplementary volume).

[In German.]

Quest Accession Number : 91049481

NTIS

Kernenergie in der DDR. Eine Dokumentation fuer das Deutsche Atomforum e.V. . (Nuclear energy in the GDR. A documentation on behalf of Deutsches Atomforum e.V.).

[In German.]

Quest Accession Number : 91042697

NTIS

Proceedings of the CSNI Workshop on PSA Applications and Limitations. Held in Santa Fe, New Mexico on September 4-6, 1990.

[Also available from Supt. of Docs. Sponsored by Nuclear Regulatory Commission, Washington, DC. Div. of Systems Research.]

Quest Accession Number : 91040837

NTIS

Durchfuehrung von Vergleichsrechnungen und deutschen Standardproblemen. (Execution of comparative computations and German standard problems).

[In German. Schriftenreihe Reaktorsicherheit und Strahlenschutz, Ergebnisberichte, Untersuchungen, Studien, Gutachten.]

Quest Accession Number : 91038693

NTIS

Kommunikation ueber die Risiken der Kernenergie. (Communication on the risk of nuclear energy).

[In German. No. 13]

[Note: Titles 6-10 not shown here]

ENTER-t 9/a/1,2,4

<= USER INPUT

[Note: References 1 and 2 not shown here]

TYPE 9/A/4

Quest Accession Number : 91040837

TIB/B91-00424/XAD NTIS Issue 9114

Durchfuehrung von Vergleichsrechnungen und deutschen Standardproblemen. (Execution of comparative computations and German standard problems).

[In German. Schriftenreihe Reaktorsicherheit und Strahlenschutz, Ergebnisberichte, Untersuchungen, Studien, Gutachten.]

M. Firnhaber.

Bundesministerium fuer Umwelt, Naturschutz und Reaktorsicherheit, Bonn (Germany, F.R.).*Bundesministerium fuer Umwelt, Naturschutz und Reaktorsicherheit, Bonn (Germany, F.R.).**Gesellschaft fuer Reaktorsicherheit mbH (GRS), Koeln (Germany, F.R.). (088412000 9202276)

Price: PC E09, Journal Announcement: GRAI9114; v9102

Report: BMU--1990-271, GRS-A--1470, Contract No: BMU SR 279/1 ,

Publication Date: 1990, Pagination: 37p

Language: German, Publication Country: Germany FR

The GRS has carried out the organization, execution and assessment of national standard problems in the field of reactor safety. This conclusive report gives a short introduction into the subject and a summary of the work performed. With regard to the scientific results the reader has to refer to the detailed comparison reports. In addition the important results of the standard problems are summarized. A total of 10 standard problems are performed under the relevant contracts. Generally the comparisons between experiment and calculations show a sufficient or good agreement, especially for the safety related parameters. Nevertheless several topics for the improvement of computer codes regarding the physical models and the user influence could be shown. (orig./HP). (Copyright (c) 1991 by FIZ. Citation no. 91:000424.)

Classification:

77H Nuclear Science & Technology-Reactor engineering & nuclear power plants

77F Nuclear Science & Technology-Radiation shielding, protection & safety

Controlled Terms: *Nuclear power plants / *Reactor safety / Computer calculations / Computerized simulation / Reviews / Federal republic of germany / Benchmarks / Mathematical models
*Foreign technology

ENTER-zoom 9 (96) cs

<= USER INPUT

Text Analysis Results

Frq Words/Phrases

```

22 GESELLSCHAFT FUER REAKTORSICHERHEIT M.B.H., COLOGNE (GERMANY,
    F.R.).
16 021310000 4832000
15 OAK RIDGE NATIONAL LAB., TN. DEPARTMENT OF ENERGY, WASHINGTON,
    DC.
13 063610000 2795680
10 063610000
  7 088412000
  6 088412000 9202276
  4 ARBEITSGEMEINSCHAFT DER GROSSFORSCHUNGSEINRICHTUNGEN, BONN
    (GERMANY, F.R.).
  4 DEUTSCHES ATOMFORUM E.V., BONN (GERMANY, F.R.).
  4 KERNTECHNISCHER AUSSCHUSS, COLOGNE (GERMANY, F.R.).
  4 058057000 9201048
  3 BUNDESMINISTERIUM FUER UMWELT, NATURSCHUTZ UND
    REAKTORSICHERHEIT, BONN (GERMA
  2 ARGONNE NATIONAL LAB., IL. DEPARTMENT OF ENERGY, WASHINGTON,
    DC.
  2 BUNDESMINISTERIUM FUER UMWELT, NATURSCHUTZ UND
...Pages.Lines: More= 4.18

```

ENTER-s cs=gesellschaft and cs=reaktorsicherheit

<= USER INPUT

```

10 4193 CS=GESELLSCHAFT
11 614 CS=REAKTORSICHERHEIT
12 374 10*11

```


ENTER-zoom 9 (96) ct

<= USER INPUT

Text Analysis Results

| Frq | Words/Phrases | Frq | Words/Phrases | Frq | Words/Phrases |
|-----|----------------|-----|---------------|-----|----------------|
| 96 | FEDERAL | | REPORT | 9 | COMPARATIVE |
| | REPUBLIC OF | 14 | TRAVEL | | EVALUATIONS |
| | GERMANY | 13 | REACTOR | 9 | EDB/220900 |
| 87 | REACTOR SAFETY | | OPERATION | 9 | ENERGY POLICY |
| 61 | FOREIGN | 12 | FRANCE | 9 | NUCLEAR ENERGY |
| | TECHNOLOGY | 12 | INTERNATIONAL | 9 | REVIEWS |
| 31 | PWR TYPE | | COOPERATION | 8 | LEGAL ASPECTS |
| | REACTORS | 11 | FAILURES | 8 | REGULATIONS |
| 28 | NUCLEAR POWER | 11 | REACTOR | 7 | LEADING |
| | PLANTS | | COMPONENTS | | ABSTRACT |
| 24 | BWR TYPE | 11 | USA | 7 | POWER |
| | REACTORS | 10 | DESIGN | | GENERATION |
| 22 | RESEARCH | 10 | ENERGY | 7 | REACTOR |
| | PROGRAMS | | SUPPLIES | | SAFETY |
| 21 | MEETINGS | 10 | ERDA/210200 | | EXPERIMENTS |
| 19 | ERDA/220900 | 10 | HTGR TYPE | 7 | UNITED KINGDOM |
| 17 | REACTOR | | REACTORS | 6 | ECONOMICS |
| | ACCIDENTS | 10 | RISK | 6 | ENERGY SOURCES |
| 14 | PROGRESS | | ASSESSMENT | 6 | ERDA/210100 |

...Pages.Lines: More= 9.46

ENTER-display sets

<= USER INPUT

SET ITEMS DESCRIPTION

| | | |
|----|-------|-----------------------------|
| 1 | 8394 | REACTOR SAFETY |
| 2 | 11915 | NUCLEAR POWER PLANTS |
| 3 | 3164 | FEDERAL REPUBLIC OF GERMANY |
| 4 | 79795 | SAFETY |
| 5 | 1568 | NUCLEAR REACTORS |
| 6 | 4717 | (2+5)*4 |
| 7 | 12059 | 6+1 |
| 8 | 230 | 7*3 |
| 9 | 96 | 8/88-91 |
| 10 | 4193 | CS=GESELLSCHAFT |
| 11 | 614 | CS=REAKTORSICHERHEIT |
| 12 | 374 | 10*11 |

ENTER-cost

<= USER INPUT

-----170Oct91 11:52:35 User00179--
1.35 AU 8.09 Minutes in File 6
3.55 AU 13 Online Prints
5.00 AU Session charge
9.90 AU approx Total

--- HYPERLINE functions HELP PANEL ---

- (N)avigate and - Allows navigation through the thesaurus network.
- (B)ack navigate The relationships among terms are associative (Related term), hierarchical (Narrower, Broader, Top term) or preferred-non preferred terms may be suggested (Use, used For).
- (T)op list - Allows re-starting of the navigation function from beginning.
- (S)how item - Shows items (bibliographic references/documents) containing the terms (concept) in the thesaurus hierarchy. The paging command (P, P-) can be used to go forward and backward in the document. Show allows sequential and associative reading.
- (A)ssociated terms in this item - Prepares a list of terms linked to documents conceptually related to the one currently being read.
- Associate(D) terms to <concept> - Lists terms linked to documents conceptually related to the term that indexed the document being read now.
- (G)et term - Allows creation of a set of documents, in the same way as the EsaQuest 'Select' command.
- h(I)story - Displays all functions executed during the navigation process except for HELP and QUIT.

Press the ENTER key to close the HELP PANEL.

ENTER-hl

<= USER INPUT

- 1 - HELP on how to use HYPERLINE
- 2 - Alphabetical list of files for which the use of HYPERLINE is suggested
- 3 - More information on HYPERLINE

Enter your choice (#) or (Q)uit : 1

<= USER INPUT

--- HYPERLINE main HELP PANEL ---

HYPERLINE is a hypertext environment that allows document BROWSING in place of document searching and CONCEPT browsing instead of query formulation.

While in an allowed file the user simply enters HL followed by the term or concept he is interested in. Example:

HL hypertext information systems

HYPERLINE will then seek concepts related to "hypertext information systems" by semantic association.

The main function HYPERLINE performs is the semantic association of the concept that the user expressed with one or more terms and the concepts that are related to it in the semantic network of the specific bibliographic file.

The semantic network is considered to coincide with the thesaurus of the file as defined by the file producer. This is also the reason why HYPERLINE is available for single files with thesaurus only.

The use of HYPERLINE is without extra cost for the user.

YOU ARE BACK IN ESA-QUEST, PLEASE ENTER AGAIN "HL",
OR ANY ESA-QUEST COMMAND !

ENTER-h1 <= USER INPUT

- 1 - HELP on how to use HYPERLINE
- 2 - Alphabetical list of files for which the use of HYPERLINE is suggested
- 3 - More information on HYPERLINE

Enter your choice (#) or (Q)uit : 2 <= USER INPUT

Files and topics for which the use of HYPERLINE is suggested

| File name | No. | Topic |
|-------------------------------|-----|--|
| ALUMINUM..... | 9 | METALLURGY, ALUMINIUM |
| CETIM..... | 54 | ENGINEERING, METALLURGY |
| COMPENDEX..... | 4 | ENGINEERING |
| EDF-DOC..... | 27 | ELECTRICAL ENGINEERING |
| EUROPEAN.AEROSPACE.DATABASE.. | 5 | AEROSPACE, ENGINEERING |
| INSPEC..... | 8 | PHYSICS, ELECTRICAL ENGINEERING, COMPUTER |
| IRRD..... | 43 | TRANSPORTATION |
| METADEX..... | 3 | ENGINEERING, METALLURGY |
| NASA..... | 1 | AEROSPACE, ENGINEERING, TRANSPORTATION |
| NTIS..... | 6 | AEROSPACE, ENGINEERING, MULTIDISCIPLINARY |

Enter file number (#) to switch file or (Q)uit : q <= USER INPUT

HyperLine completed

Continue with EsaQuest commands

ENTER-h1

<= USER INPUT

- 1 - HELP on how to use HYPERLINE
- 2 - Alphabetical list of files for which the use of HYPERLINE is suggested
- 3 - More information on HYPERLINE

Enter your choice (#) or (Q)uit : 3

<= USER INPUT

The use of HYPERLINE is without extra cost : only session and online prints (show options) are charged.

The use of HYPERLINE is allowed in single files with thesaurus. It is allowed to use the truncation if multiple terms are used :

e.g. HL information service?

and prefixes like "AU=" but not to use operators like W,S,C.

Files for which the use of HYPERLINE is allowed

| File name | File no. | File name | File no. |
|---------------------------|----------|-----------------------|----------|
| ALUMINUM..... | 9 | INSPEC..... | 8 |
| CAB..... | 16 | IRRD..... | 43 |
| CAB..... | 124 | ISMEC..... | 10 |
| CEDEFOP..... | 186 | LABORDOC..... | 53 |
| CETIM..... | 54 | METADEX..... | 3 |
| CISDOC..... | 40 | NASA..... | 1 |
| COMPENDEX..... | 4 | NTIS..... | 6 |
| EDF-DOC..... | 27 | OCEANIC..... | 17 |
| ENERGYLINE..... | 19 | PACKABS..... | 55 |
| ENGINEERED MATERIALS..... | 134 | PASCAL 1973-1983..... | 204 |
| ENVIROLINE..... | 11 | PASCAL 1984..... | 205 |
| EUDIISED R & D..... | 24 | POLLUTION..... | 18 |
| EUROP. AEROSP. DATAB..... | 5 | TRANSDOC..... | 174 |
| FOOD SCIENCE..... | 20 | VITIS..... | 133 |
| GLASS..... | 75 | | |

| File name | File no. | File name | File no. |
|---------------------------|----------|-----------------------|----------|
| ALUMINUM..... | 9 | INSPEC..... | 8 |
| CAB..... | 16 | IRRD..... | 43 |
| CAB..... | 124 | ISMEC..... | 10 |
| CEDEFOP..... | 186 | LABORDOC..... | 53 |
| CETIM..... | 54 | METADEX..... | 3 |
| CISDOC..... | 40 | NASA..... | 1 |
| COMPENDEX..... | 4 | NTIS..... | 6 |
| EDF-DOC..... | 27 | OCEANIC..... | 17 |
| ENERGYLINE..... | 19 | PACKABS..... | 55 |
| ENGINEERED MATERIALS..... | 134 | PASCAL 1973-1983..... | 204 |
| ENVIROLINE..... | 11 | PASCAL 1984..... | 205 |
| EUDIISED R & D..... | 24 | POLLUTION..... | 18 |
| EUROP. AEROSP. DATAB..... | 5 | TRANSDOC..... | 174 |
| FOOD SCIENCE..... | 20 | VITIS..... | 133 |
| GLASS..... | 75 | | |

Enter the file number (#) to switch file or (Q)uit: q <= USER INPUT

HyperLine completed

Continue with EsaQuest commands

The new on-line Information System
SHERLOCK

R. Lamprecht

Fachinformationszentrum Technik, e.V., Frankfurt/M.



Dr.-Ing. Holger Lamprecht

The new On-line Information System SHERLOCK

The paper presents the new On-Line Information System SHERLOCK for Business and Industry of the Fachinformationszentrum Technik (FIZ Technik). SHERLOCK was designed to provide access to all retrievable information stored in on-line data base systems. It should be possible to access the over 10 million technical and business information entries in our data bases regardless of how often the information will be accessed or of the users knowledge and experience with on-line data bases. SHERLOCK was also designed to provide an efficient and acceptable relationship between investment and return when using data bases for everyone.

The research and development departments of larger companies and scientific institutions recognized the advantages of electronic information carriers very early and integrated the competitive "information" factor into their daily activities. The interest in data bases in middle and smaller companies, as well as in the individual departments of larger companies, has grown noticeably over the past few years.

However, and many interested parties have discovered this, the search for data with command languages is not as simple as it seems. We asked ourselves what anxieties are expressed when the term "data base" is mentioned. The responses range from "Too complicated!" through "You can't find the information I am looking for!" to "What does it cost?". Opinions or experiences such as these have killed the best intentions.

SHERLOCK is a new concept for providing access to information in data bases.

With SHERLOCK anyone searching for information can immediately and successfully use the FIZ Technik data bases, when the information is required. On-line searches with SHERLOCK are as simple and practical as obtaining information by telephone.

The SHERLOCK concept is based on the technical possibilities available in todays companies, especially the availability of PCs at the work place and the general increase in acceptance of external data transmission over the economical Datex-P Network.

This concept places the data base user in the foreground. We cannot guarantee that all areas of information required by you are supported in our data bases. We developed SHERLOCK so that you can easily find all information that is contained in the data bases, without any prior knowledge and always when you require the information. Why you can immediately and successfully use data bases with SHERLOCK?

1. You do not require any experience with data base queries!
2. SHERLOCK recommends the appropriate data bases for your queries!
3. You do not require any special knowledge of data base contents or structures.
4. Knowledge of the retrieval language is not required.
5. You will always have the current version of the complete data base spectrum through automatic program updates.
6. You can concentrate on your information queries, SHERLOCK performs everything else.

The main features of the new On-line Information System SHERLOCK are presented

Why you can immediately
and successfully use databases
with SHERLOCK

- 1. You do not
require any
experience
with database
queries!**

Why you can immediately and successfully use databases with SHERLOCK

→ **SHERLOCK Recommends the Appropriate Databases**

The first question that must be answered by every online query is in which database will a search most likely be successful.

Instead of reading the descriptions, simply enter the most important query key words and let SHERLOCK recommend one or more of the databases to search.

Naturally you can select individual databases or create your own database list.

Why you can immediately and successfully use databases with SHERLOCK

SHERLOCK Recommends the Appropriate Databases

| Datenbankliste | Auswahl mit Empfehlung |
|----------------|------------------------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | BERÜHRUNGSLOSE WERKVERFAHREN |
| 5. | oder BERÜHRUNGSLOSE MESSUNG |
| 6. | |
| 7. | und |
| 8. | |
| 9. | DICKENMESSUNG |
| 10. | |
| 11. | oder DICKENMESSGERÄT |
| 12. | |
| 13. | |
| 14. | |
| 15. | |

Bewegen [←][→] Weiter [F10]

Why you can immediately and successfully use databases with SHERLOCK

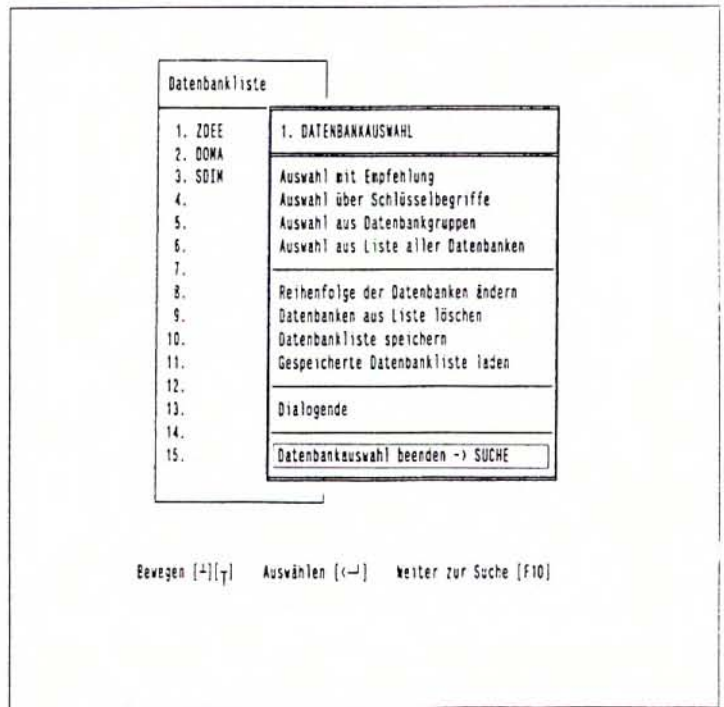
SHERLOCK Recommends the Appropriate Databases

| Datenbankliste | |
|----------------|---|
| 1. | ZDEE - Elektrotechnik und Elektronik DOMA - Maschinenbau und Fertigungstech. SOIM - Metallische Werkstoffe |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |
| 9. | |
| 10. | |
| 11. | |
| 12. | |
| 13. | |
| 14. | |
| 15. | |

Bevegen [+][↑] Auswählen [F9] Eingabe beenden [↵]

Why you can immediately and successfully use databases with SHERLOCK

SHERLOCK Recommends the Appropriate Databases



Why you can immediately
and successfully use databases
with SHERLOCK

2. You do not
require any
special
knowledge of
database
contents or
structures

The Secret of Success: The SHERLOCK Search Card

Technically seen, database information are divided into fields

Normal database queries expect the user to know these fields and their keys

SHERLOCK is completely different!



By selecting Search Cards you can decide whether you are searching for technical terms, authors, companies, products, etc.



If a particular format is required such as dates or names, the Search Card will contain a mask for entering the data



Your key words are entered in normal text



Each Search Card allows multiple entries of descriptive key words or language variations of search characteristics



You can page through the dictionary of the database of internal code lists and select the desired key word just by „clicking“

The SHERLOCK Search Card

Search Card
for
literature
database:

| | | |
|---|-------------|---|
| S 1 1705 | S 2 2095 | ZDEE - Elektrotechnik und Elektronik |
| C 1 83 | S 3 | Suchkarte : 2 Suchbereich : Fachbegriffe |
| Fachbegriffe Fachordnung Technik (C) Autor Institution Veröffentlichungsjahr Sprache (PC) Dokumentart (PC) | | |
| oder SCHICHTDICKENMESSER oder SCHICHTDICKENMESSGERÄT | | |

Search Card
for
company
information:

| Suchschritt 1 | Weitere Suchschritte |
|--|---|
| Produkte Firmen | Produkte Firmen |
| Branchencodes Produktcodes Ort Land Postleitzahl | Branchencodes Produktcodes Ort Land Postleitzahl Postleitzahlbereich |
| Besitzverhältnisse Umsatzklasse Joker | Zahl der Beschäftigten Besitzverhältnisse Umsatzklasse Joker |

The SHERLOCK Search Card

Just
„clicking“
the
key words

51

D111 - Einkaufs-1st der Dt. Inc. 1dt)

Suchkarte : 1
 Suchbereich : Umsatzklasse (PC)

| | | | | |
|------|--------------|-----|--------------|--|
| SG01 | | bis | 1,0 Mio DM | |
| SG02 | 1,1 Mio DM | - | 5,0 Mio DM | |
| SG03 | 5,1 Mio DM | - | 10,0 Mio DM | |
| SG04 | 10,1 Mio DM | - | 20,0 Mio DM | |
| SG05 | 20,1 Mio DM | - | 30,0 Mio DM | |
| SG06 | 30,1 Mio DM | - | 50,0 Mio DM | |
| SG07 | 50,1 Mio DM | - | 75,0 Mio DM | |
| SG08 | 75,1 Mio DM | - | 100,0 Mio DM | |
| SG09 | 100,1 Mio DM | - | 200,0 Mio DM | |
| SG10 | 200,1 Mio DM | - | 500,0 Mio DM | |

oder

oder

Bewegen [+][?] Auswählen [F9] Weiter [F10]

The SHERLOCK Search Card

Just
„clicking“
the
key words

- 5 -

400 - 400 der 01. 4. 1984: 01

Suchworte :
Suchbereich : Fachbereichs

| | | |
|----|--|--|
| A1 | Klassische Suche | |
| A2 | Produkte, Dienste und Firmen, Dienstleistungen | |
| A3 | Wissenschaftliche, literarische, Erden und geogr. Material | |
| A4 | Kunstschaffensgebiete, Industrie- und Erfindungen | |
| A5 | Class. Zusammenhänge, Verweise und Zitate etc. | |
| A6 | Sachverhalte und Schwingen etc. (Schriftstücke) | |
| A7 | Neuigkeiten, Nachrichten | |
| A8 | Industrien, Herstellungsverfahren | |
| B1 | Alle Fachgebiete, Abteilungen, Standorte | |
| B2 | Industrie, Handel, Straßen, Standorte | |

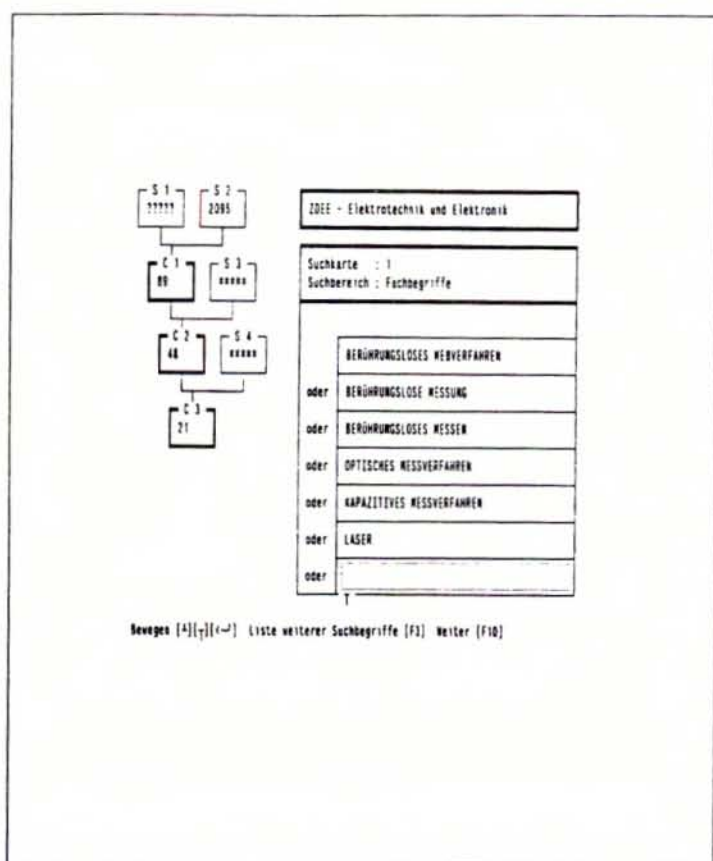
oder:

oder:

Bewegen [←][→] Auswählen [F8] Weiter [F10]

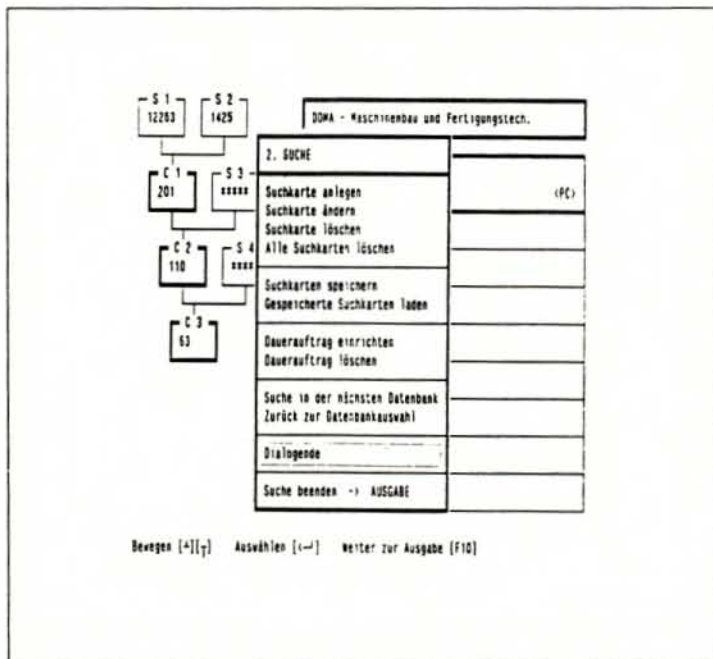
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|-------------|-----------|-------------|-----------|-----|---|----|-----------|--|----|---------|--|----|-------|--|----|--------|--|----|--------|--|----|---------|--|----|---------|--|----|--------|--|----|-----------|--|----|---------|--|
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">S 1 1705</td> <td style="border: 1px solid black; padding: 2px;">S 2 2095</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C 1 B1</td> <td style="border: 1px solid black; padding: 2px;">S 3 xxxx</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">C 2 A3</td> <td style="border: 1px solid black; padding: 2px;">S 4</td> </tr> </table> | S 1 1705 | S 2 2095 | C 1 B1 | S 3 xxxx | C 2 A3 | S 4 | <p style="text-align: right;">Z000 - Elektrotechnik und Elektronik</p> <p>Suchworte : 4 Suchbereich : Sprache</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">BG</td> <td style="width: 85%;">Bulgarian</td> <td style="width: 10%;"></td> </tr> <tr> <td>CN</td> <td>Chinese</td> <td></td> </tr> <tr> <td>CS</td> <td>Czech</td> <td></td> </tr> <tr> <td>DA</td> <td>Denish</td> <td></td> </tr> <tr> <td>DE</td> <td>German</td> <td></td> </tr> <tr> <td>EN</td> <td>English</td> <td></td> </tr> <tr> <td>FI</td> <td>Finnish</td> <td></td> </tr> <tr> <td>FR</td> <td>French</td> <td></td> </tr> <tr> <td>HU</td> <td>Hungarian</td> <td></td> </tr> <tr> <td>IT</td> <td>Italian</td> <td></td> </tr> </table> <p>oder:</p> <p>oder:</p> <p style="text-align: center;">Bewegen [←][→] Auswählen [F8] Weiter [F10]</p> | BG | Bulgarian | | CN | Chinese | | CS | Czech | | DA | Denish | | DE | German | | EN | English | | FI | Finnish | | FR | French | | HU | Hungarian | | IT | Italian | |
| S 1 1705 | S 2 2095 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C 1 B1 | S 3 xxxx | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C 2 A3 | S 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BG | Bulgarian | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CN | Chinese | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CS | Czech | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DA | Denish | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DE | German | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EN | English | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FI | Finnish | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FR | French | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HU | Hungarian | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IT | Italian | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

The SHERLOCK Search Card



The SHERLOCK Search Card

Search Cards can be saved, loaded,
saved as SDI and taken over for search run
in other databases

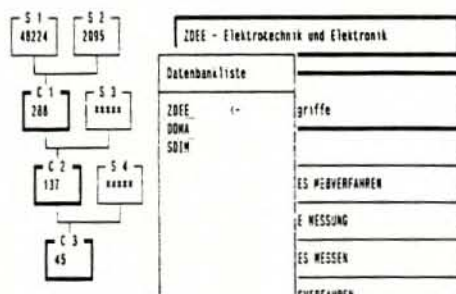


Why you can immediately
and successfully use databases
with SHERLOCK

3. **SHERLOCK
Consolidates
Information
from different
Databases**

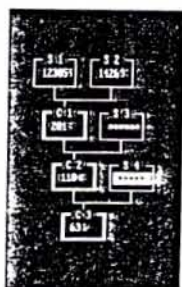
SHERLOCK Consolidates Information from different Databases

- After selecting a new database SHERLOCK will immediately query the database without the necessity of re-entering the search criteria
- If the databases have different structures, SHERLOCK will automatically adapt your search steps to the new database structure
- If, due to the database structures or the use of a particular search method this adaptation is not possible automatically, i.e. it can not produced any meaningful results, SHERLOCK will issue an informative message and search criterias can be changed



The Results Screen of Your Query

- The results of Search Cards are displayed on the screen
- The display shows the number of entries found for the Search Cards and the results of the combination of the Search Cards for each step of the query
- Search Cards can be changed, deleted or added at any time regardless of their position in the query path
- SHERLOCK will automatically update the results affected by any of these changes



Simple and Clear Information

Search Results are first displayed as Overview Information

A U S G A B E: Auswählliste

| | | |
|----|----|--|
| 1 | TI | Berührungslose Überwachungssysteme, kontinuierliche Qualitätskontr |
| 2 | TI | Kapazitive Messung, berührungslos und hochgenau, Capacitive odome |
| 3 | TI | Container sicher positionieren, Safe positioning of containers. |
| 4 | TI | Bändickenmessung mit Laser, Band thickness measurement with the lase |
| 5 | TI | Dickenmessung transparenter Schichten, Measuring the thickness of tra |
| 6 | TI | Signalauswertung fuer die optische Abstands- und Dickenmessung, Signa |
| 7 | TI | Ein neues kapazitives Sensorsystem mit ueberlegenen Eigenschaften und |
| 8 | TI | Berührungslose Messung von Wasserschichtdicke und Salzgehalt auf Str |
| 9 | TI | Berührungsloses Messen von Dimensionen, Profilverfolgung, Contactles |
| 10 | TI | Optische Signalverstaerkung fuer Faserdickenmessung, Optical signal a |
| 11 | TI | Zylindrische Drehteile berührungslos vermessen. |
| 12 | TI | Optoelektrisches Messgeraet zur Bestimmung von Drahtdicken, Optoelect |
| 13 | TI | Qualitaetsicherung mit Laserlicht und Mikroprozessoren an bewegten W |
| 14 | TI | Stichproben genuegen nicht, radioemetrisches Messverfahren mindert Aus |
| 15 | TI | Berührungslose Bestimmung der Dicke von Oberflächenbeschichtungen d |
| 16 | TI | Berührungsloses Messen dimensioneller Groessen. |
| 17 | TI | Berührungsloser Laengenmesser. |
| 18 | TI | Digitaltechnik bei Nuklear-Dickenmessgeraeten in Walzwerken. |
| 19 | TI | Optoelektronik in der Messtechnik, Optoelectronics in the measuring t |
| 20 | TI | Berührungsloses Messen mechanischer Groessen. |

Bewegen [4][↑] Kurzinfo [F2] Order [F4] Auswählen [F9] weiter [F10]

Simple and Clear Information

By pressing a function key the information selected by you can be displayed in detail

Important information can be used to change or expand the Search Cards or add additional search steps

A U S G A B E: Auswahlliste

1 TI Beruehrungslose Ueberwachungssysteme, kontinuierliche Qualitätskontr
 2 TI Kapazitive Wegmessung, beruehrungslos und hochgenau, Capacitive odome
 3 TI Container sicher positionieren, Safe positioning of containers.
 4 TI Banddickenmessung mit Laser, Band thickness measurement with the lase
 5 TI Dickenmessung transparenter Schichten, Measuring the thickness of tra

DB ZDEE, FIZ Technik Frankfurt: ZDE, Copyright FIZ Technik.
 AN E89071549130.
 MJ beruehrungsloses-Messen; Abstand; Dicke.
 TI Signalauswertung fuer die optische Abstands- und Dickenmessung.
 Signal conditioning for digital distance and thickness measurement.
 LG DE German.
 ED 8309.
 YR 1939.
 PT J Journal.
 CC MPFA Messen geometrischer Groessen.
 MW BERUEHRUNGSLOSES-MESSVERFAHREN; OPTISCHES-MESSVERFAHREN;
 MESSAUFNEHMER; DIODENANORDNUNG; DIGITALMESSVERFAHREN;
 AUFLÖSUNGSVERMÖGEN; GESCHWINDIGKEIT; INTERPOLATION;
 ENTFERNUNGMESSUNG; DICKENMESSUNG; UMWELTEINFLUSS;
 TRIANGULATIONSVERFAHREN.

Drücken Sie bitte eine beliebige Taste, um die Auswahl fortzusetzen.

Simple and Clear Information

If output on screen is selected, the information will be displayed one screen page at a time

If output to a file is selected, all information will be transferred and written to the disk drive

The same will occur when output to a connected line printer

```

A U S G A B E
15 DB = ZDEE PAGE = 1 OF 1
CB ZDEE, FIZ Technik Frankfurt; ZDE, Copyright: FIZ Technik.
AN EG2121688174.
WJ Schichtdicke; beruehrungslose-Messung.
TI Beruehrungslose Bestimmung der Dicke von Oberflaechenbeschichtungen
durch thermische Messverfahren.
Contactless evaluation of the thickness of surface coatings with
thermal effects.
LG DE German.
AB Es wird ein Messverfahren zur beruehrungslosen Dickenmessung duenner,
unverfestigter Schichten vorgestellt. Unterschiedliche thermische
Eigenschaften von Grundwerkstoff und Beschichtungsstoff gestatten bei
Aufheizen durch Waermeabstrahlung aus dem zeitlichen Verlauf der
transmittierten oder reflektierten Waermeabstrahlung auf die
Schichtdicke zu schliessen.
AU Linhart-C; Wackemann-A.
IN Hochschule der Bundeswehr, Hamburg, D.
SO Technisches Messen, 49 (1962) 11, S:391-398, 95/78/17/17Q.
END OF DOCUMENT

Bewegen [+][ ][BILG-][BILDy] Zurück zur Auswahlliste [F10]

```

Why you can immediately
and successfully use databases
with SHERLOCK

4.

SHERLOCK

Updates Itself

SHERLOCK Updates Itself

You would expect the most current and up-to-date information available

You would expect to search new databases in the same method you are accustomed to

You'll get it!

- SHERLOCK checks all databases when it makes recommendations – including new data bases
- But you get even more:
- The Search Cards are also provided immediately for new databases
- SHERLOCK communicates with our host computer in the background
- Files required for search support will be transferred from our mainframe computer to your PC automatically.
- Before you have entered your first query SHERLOCK will have updated itself

Why you can immediately
and successfully use databases
with SHERLOCK

5. **SHERLOCK**
saves your
Online
Expenses by
using the
..PARK and ..GO
Feature
Automatically!

SHERLOCK — Technology

- SHERLOCK can be installed on any IBM or compatible AT-PC with the DOS 3.0 and upwards operating systems
- A minimum of 640 kb main memory and a hard disk are required
- The communication elements required for data transmission are included
- Modems and a number of self-dialing modems are supported
- Speed: 300 up to 9,600 bits/sec
- Hercules, VGA and EGA graphics cards are supported in monochrome and color modes
- An informative handbook explains program installation and provides examples that demonstrate how databases may be queried
- The price for SHERLOCK is DM 225.00 plus sales tax and shipping including the fees for accessing the FIZ Technik Online Service and the Online Mail Service

**The Fachinformationszentrum Karlsruhe and
STN International**

K. Lankeau

Fachinformationszentrum Karlsruhe GmbH, Karlsruhe

Klaus Lankeau

Fachinformationszentrum Karlsruhe

Gesellschaft für Wissenschaftlich-Technisch Information mbH

THE FACHINFORMATIONSZENTRUM KARLSRUHE AND STN INTERNATIONAL

1. Introduction

The Fachinformationszentrum Karlsruhe, Gesellschaft für wissenschaftlich-technische Information mbH, was founded under the first program of the German Federal Government supporting information and documentation (I&D Program, 1974-77). That program had served to combine in central institutions previously uncoordinated activities in the fields of information and documentation. The specialized technical and scientific competence of the Fachinformationszentrum Karlsruhe lies in physics and astronomy, mathematics and computer science, and energy and technology. Databases are produced and offered through the STN International Host in these areas.

The original name of the Fachinformationszentrum Karlsruhe had been Fachinformationszentrum Energie, Physik, Mathematik GmbH. It had incorporated five earlier organizations managing information and documentation in those fields, in order to create one powerful scientific infrastructure. The statutes of the organization consequently read as follows: "The company has been created to render scientific and technical information services in the fields of astronomy and astrophysics, energy, nuclear re-

search and nuclear technology, aerospace technology, space research, mathematics and physics, or make such information available, and carry out all activities necessary for this purpose. The company runs a computerized special information center (host), which is active also in other areas of science and technology in addition to those listed above. The company discharges its duties in cooperation with other institutions and organizations in the information management sector within and outside the Federal Republic of Germany."

The partners in the Fachinformationszentrum Karlsruhe are the German Federal Government and the German Federal States as of October 3, 1990, plus the Deutsche Physikalische Gesellschaft (DPG), the Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung (FHG), the Max-Planck-Gesellschaft zur Förderung der Wissenschaften (MPG), the Verein Deutscher Ingenieure (VDI), the Gesellschaft für Informatik (GI), and the Deutsche Mathematiker Vereinigung (DMV). The new German Federal states will become partners in the Fachinformationszentrum Karlsruhe effective 1992.

The Fachinformationszentrum Karlsruhe has a staff of approx. 330 persons. As an organization of scientific infrastructure, it is funded by the German Federal Government and the Baden-Württemberg State Government on an 85:15 ratio; in 1990, it had funds of DM 56.3 million to carry out its activities, which were made up of DM 18.0 million of income, DM 10.6 million of project funds, and DM 27.7 million of grants-in-aid.

2. Program and Organization of the Fachinformationszentrum Karlsruhe

The program of the Fachinformationszentrum Karlsruhe covers the following range of activities: establishing databases and operating a host for on-line access to these databases and those held by other producers; collecting and lending original literature; publishing and distributing printed information bulletins and other publications; magnetic tape service; execution of on-line searches; establishment and execution of profile services.

2.1 Production of Databases

2.1.1 Energy and Technology Department

This department covers the sectors of energy research and energy technology, nuclear research and nuclear technology, aerospace technology, space research, and other related technological areas. The national input into the INIS (International Nuclear Information System) and ENERGY international databases is compiled by this department. In addition to these activities, the department manages the Bürger-Information Neue Energietechnik (BINE) "Public Information on New Energy Technologies" project funded by the German Federal Ministry for Research and Technology.

2.1.2 Physics and Astronomy Department

The activities of this department concentrate on establishing the PHYS database jointly with the American Institute of Physics. The printed version of PHYS, "Physics Briefs/Physikalische Berichte," is published jointly with the Deutsche Physikalische Gesellschaft.

2.1.3 Mathematics and Computer Science Department

This department produces databases on mathematics and computer science and publishes the Zentralblatt für Mathematik/Mathematics Abstracts (ZfM) and Zentralblatt für Didaktik der Mathematik (ZDM) abstract journals. The MATH database is the most extensive bibliographic database worldwide in the field of mathematics and its areas of application; the MATHDI database is the only database available in the fields of mathematics and computer science instruction. The COMPUSCIENCE database, which has been available since 1989, covers basic literature in computer science.

2.2 Interdisciplinary Activities

2.2.1 Bibliographic Service

The bibliographic service of the Fachinformationszentrum Karlsruhe procures literature for documentation purposes, collects grey literature in the special areas of competence of the Fachinformationszentrum Karlsruhe, provides bibliographic information and is responsible for lending literature and supplying original references. Here are some figures to illustrate the scope of these activities: In 1990, approx. 125,000 documents were processed; the total volume of documents stored exceeds 2 million. In 1990, in addition, more than 40,000 orders for literature were processed, and some 2500 bibliographic queries were answered. The bibliographic service also sells information services, such as the National Technical Information Service (NTIS), USA, and the BMFT reports.

2.2.2 Information Technology and Systems Development

Here are the main areas of activity of this department:

- Operating a host and making available bibliographic, numerical, and factual databases of STN International and INKADAT.
- On-line service providing access for internal and external users to databases of the STN service centers in Karlsruhe, Columbus, Ohio, and Tokyo.
- Providing services with respect to the databases offered by other specialized information institutions.
- Technical treatment for the production of databases and their further processing into printed services.
- Programming databases.

- Application programming and software development.

2.2.3 Information Services

This department is responsible for user relations and all associated activities, such as the operation of a help desk, the establishment and management of user rights, advertising, public relations, and marketing.

2.2.4 Development and New Services Staff Department

Providing specialized information requires in-house development activities. This department is charged with the implementation, i.e. the design, programming and documentation, of factual databases. Examples to be mentioned are the BEILSTEIN and GMELIN databases. Another area of activity is the conceptual design and development of new front end software products for personal computers and workstations.

2.3 International and National Cooperation

In addition to the international cooperation within the framework of STN International, which will be described below, the Fachinformationszentrum cooperates with the organizations listed below, among others, in producing databases:

- The International Atomic Energy Agency (IAEA) in Vienna. The Fachinformationszentrum also participates in establishing the INIS (International Nuclear Information System) and ENSDF (Evaluated Nuclear Structure Data) databases; also the collection of energy data is a joint effort. In addition, the Fachinformationszentrum Karlsruhe is the national INIS center.

- International Energy Agency (IEA). The Fachinformationszentrum Karlsruhe cooperates with IEA in building up the ENERGY database.
- American Institute of Physics (AIP). Cooperation has been organized in establishing the PHYS database and the Physikalische Berichte/Physics Briefs.
- National Technical Information Service (NTIS), USA. The Fachinformationszentrum Karlsruhe supplies the input by the Federal Republic of Germany to the NTIS database.
- European Association for Grey Literature Exploitation (EAGLE). This cooperation covers the establishment of the SIGLE database, in which non-conventional literature is referenced.

The cooperative ventures pursued by the Fachinformationszentrum Karlsruhe on a national level are as varied as its areas of competence. In building up databases, close cooperation has been established with other specialized information centers, federal agencies, state ministries, libraries, universities, national research centers, industries, and documentation centers.

3. STN International - The Scientific & Technical Information Network

From 1978 on, the Fachinformationszentrum Karlsruhe has operated the INKADAT (formerly INKA) host, through which more than forty databases were offered in 1983. Already in the early eighties, the question arose whether INKADAT should not be expanded into a comprehensive host for the natural sciences and technology as, ultimately, only large hosts are able to provide optimum service. Users are not interested in searching in various hosts, each with a different retrieval language. A corresponding addition to the databases available would have required the establishment of a sizable number of databases under license and, consequently, would have been rather costly. The establishment of STN International with partners sharing the same interests, namely the expansion of available databases, was the optimum solution among

the options available. In the STN concept, the host computers of suppliers whose products are complementary are interconnected by telecommunication systems in such a way that the resultant system can be used like one single central host. In this way, STN International has become an integrated system composed of a network and mainframes. This, of course, also required a standardized query language and a standardized database design. For this reason, most of the INKADAT databases were integrated in STN by late 1988.

STN International was founded in 1983 by the Fachinformationszentrum Karlsruhe with strong support by the Fachinformationszentrum Chemie, and the Chemical Abstracts Service (CAS) of the American Chemical Society (ACS). Since 1986, the Japan Information Center of Science and Technology (JICST) has been the third STN partner.

The Chemical Abstracts Service is a department of the American Chemical Society charged with documenting the world literature in the field of chemistry and chemical engineering; it publishes a number of services for this purpose, among them the CAS on-line databases through STN International. As the operator of the STN service center in Columbus, Ohio, CAS offers additional scientific databases.

JICST was founded in 1957 as a central organization in Japan charged with collecting, documenting, and distributing scientific and technical information. It operates the JOIS (JICST On-line Information System) on-line service and has been partner in the operation of STN International since 1986.

The STN network is made up of geographically distributed service centers whose computers are interconnected by satellites. The three centers are equipped with standardized technical systems and standardized software for communication and retrieval. All STN databases are installed only once. Consequently, it is irrelevant to users whether an STN database is located physically in Europe, the USA, or Japan; the user has on-line access to this database via his nearest STN service center and, as each center makes available the whole range of databases, must pay telecommunication charges only up to this center. Off-line services, such as the compilation and sen-

ding of search results, are organized through the same center through which the user had accessed STN. If, for instance, an STN user searches, via the Karlsruhe service center, in a database physically located in the USA or in Japan, and the user orders off-line prints, these prints will be printed automatically in Karlsruhe and dispatched from there.

The activities of the STN service centers comprise the management of database operations, i.e., loading, updating and maintaining databases, operating the computer network, monitoring the network, collecting the accounting data, printing out and dispatching to the users the results of literature searches, operating a help desk to support users, billing, compiling manuals and user documents, running training courses, advertising, marketing, etc.

Here are some of the main principles of STN:

DECENTRALIZATION, i.e., each database is physically available within STN only once.

INTEGRATION, i.e., all databases are of a uniform design and can be searched with the same query language.

In summary, the STN concept offers these advantages:

- Despite the decentralized structure, STN is seen by users as one central host.
- The comprehensive range of databases offered is available as if it were contained in one host.
- The distribution of the cost of implementing databases over various nodes and service centers, respectively, reduces the cost.

- Database producers offering their databases through STN automatically gain access to the European, American, and Japanese on-line markets.
- As the STN network is operated by the STN partners on a non-profit basis, users suffer no disadvantage from the decentralized structure, for instance, in the form of additional telecommunication costs.

4. The STN Databases

The databases offered by STN International at present comprise about 130 databases, and some 15-20 databases are added every year. As far as contents go, the STN databases constitute various subject clusters. As many databases are not restricted to one clearly defined subject area, they can be assigned to more than one cluster. Here are the clusters:

Architecture, Building Construction, Urban Planning

The core databases of this cluster are the ICONDA and RSWB databases. ICONDA (International Construction Database) is a bibliographic database covering the literature in building construction and architecture worldwide. References are written in English, most of them containing abstracts. ICONDA is the database of the International Council for Building Research, Studies and Documentation (CIB). The database is produced by the Informationszentrum Raum und Bau (IRB).

RSWB (Raumordnung, Städtebau, Wohnungswesen, Bauwesen, i.e. Regional Development, Urban Construction, Housing, Building Construction) is a bibliographic database referencing the international literature in this field; it is also produced by IRB. References are in German; titles in languages other than German are indicated in the original language and in the German translation. As ICONDA, also RSWB puts special emphasis on grey literature.

Chemistry

This cluster contains all CAS on-line databases as well as databases of the Fachinformationszentrum Chemie and other sources, of which especially the Beilstein and the Gmelin Institut with the BEILSTEIN and GMELIN databases should be mentioned.

Energy, Technology, Environment

The core databases of this area are the energy databases produced by the Fachinformationszentrum Karlsruhe either individually or in cooperation with other sources, which also include the environmental aspect. In addition, the German Federal Environmental Agency offers its databases through STN. The sector of technology is represented by databases focusing on "Electrical Engineering," "Engineering Sciences," and "Process Engineering."

Mathematics and Computer Science

Mathematics is covered in the MATH database, an electronic version of the "Zentralblatt für Mathematik" and the world's most comprehensive database in the field of mathematics. Other databases available are MATHDI, which covers the didactic aspects of mathematics, and COMPUSCIENCE in the field of computer science.

Life Sciences and Medicine

Central files in this cluster are the BIOSIS database, which contains references to the worldwide literature published in all areas of the life sciences, and MEDLINE, the database of the National Library of Medicine (NLM), USA. Other medical databases will follow.

Patent Information

In principle, patent information is included also in other databases. This cluster includes only those databases which contain nothing but patent information. In addition to some specialized patent databases, PATDPA and INPADOC constitute the main sources under this heading. INPADOC, the database of the Internationales Patentdokumentationszentrum GmbH, Vienna, is the most comprehensive patent database in the world. It contains the bibliographic data and patent family data of all printed patent specifications and utility model specifications of 55 patent organizations, including the European Patent Office and the World Intellectual Property Organization (WIPO). In addition, it contains the legal patent status data of ten patent organizations. The database corresponds to the INPADOC Patent Gazette and the INPADOC Rechtsstandsdienst. The INPAMONITOR database contains the topical six-week inventory of bibliographic data originating from the same sources as the documents of INPADOC. PATDPA, the Deutsche Patentdatenbank, contains the bibliography published by the German Patent Office in the "Patentblatt" of published patent applications, patent specifications, and utility model specifications from the Federal Republic of Germany as well as all applications with the European Patent Office and the World Intellectual Property Organization (WIPO) earmarked for the Federal Republic of Germany. PATGRAPH is a supplement to PATDPA containing patent drawings, chemical structures, and complex mathematical formulae of patents referenced in PATDPA.

Physics and Materials Sciences

Next to the PHYS database, the on-line version of the Physikalische Berichte/Physics Briefs, INIS, the database on nuclear research and nuclear technology, and C13-NMR/IR, the numerical database, are among the most important physics databases. Some databases dealing with materials sciences also belong in this category. They include databases holding numerical data about materials properties.

The Social Sciences

STN holds two databases of the Informationszentrum Sozialwissenschaften in the field of the social sciences. FORIS (Forschungsinformationssystem Sozialwissenschaften) is a so-called research database, which will be mentioned in greater detail below. SOLIS (Sozialwissenschaftliches Literaturinformationssystem) contains references to German-language literature in the social sciences and their applications; this database is updated monthly.

Multidisciplinary Databases

Examples of multidisciplinary databases are BIBLIODATA and JICST-E. BIBLIODATA contains references to books, journals (but not essays published in journals), congress proceedings, university treatises, etc. published in the German-language area, which are collected by the Deutsche Bibliothek in Frankfurt am Main as the national bibliographic center for the Federal Republic of Germany, where they are also recorded bibliographically; in addition, the database contains the current-publications search service; the database is updated weekly.

JICST-E (the English-language JICST file on science, technology and medicine in Japan) is a bibliographic database of abstracts documenting the literature published in Japan since 1985 in all areas of science, technology, and medicine.

Research Databases

Research databases are databases containing information about research institutions and research personnel, research projects, and bibliographic information about publications of findings originating from research projects.

The importance of research databases must be seen in connection with the tremendous increase in research funding and research activities over the past ten or fifteen

years. According to the German Federal Ministry for Research and Technology, expenditures into research and development rose by 31% to DM 50 billion per year between 1981 and 1985; this corresponds to a total growth in real terms, i.e. corrected for inflation, of 17%, or 4% annually. Information about research thus is becoming more and more important to scientists and research managers. At present, eleven research databases are offered through STN or are about to be launched; other databases will follow, and the existing ones will be continuously updated and expanded.

Learning Databases

Learning databases are scaled-down versions of existing databases allowing users to rehearse, at low cost, conducting on-line searches. A total of five learning databases are offered.

5. The Supply Policy of STN International

STN International offers databases produced by the STN partners themselves, licensed by other producers, and databases coming from other vendors. Pursuing a common policy in what is being offered is a precondition of the success of STN International. The STN partners have agreed to focus their products on the natural sciences and technology, and to cover the different subjects under these general headings by databases as comprehensively as possible, not only by bibliographic databases but also, as far as possible, by numerical, full-text, and factual databases. Users should be enabled to satisfy their needs for information comprehensively and in depth.

The partners in STN have agreed to concentrate specific groups of databases in Columbus, Ohio, Tokyo, or Karlsruhe. As a consequence of the complexity of the market for specialized information, exceptions to this rule may be made by the partners.

Numerical and factual databases have become increasingly more important in recent years among the products offered by STN International. This product policy also recognizes the fact that science, research and development have a growing need for infor-

mation which can be directly employed in the research process. This tendency is accompanied by a clear trend showing scientists to satisfy their need for information no longer through information brokerage agencies, but by conducting database searches on their own. The range of numerical and factual databases available at STN will be continued and expanded; almost half of the databases to be added at the Karlsruhe STN service center next year will be numerical or factual databases.

Databases are produced in a continuous process. This applies not only to the constant updating and expansion of databases, but also to the need to improve them permanently and adapt them to developments in the query languages. This permanent improvement of existing databases, next to the production of new ones, is an integral part of the products offered by STN International.

6. Conclusions

The Fachinformationszentrum Karlsruhe is an integral part of the specialized information policy of the German Federal Government and its programs in this field. It is one out of fifteen centralized specialized information institutions. Four of these operate a host, and the Fachinformationszentrum Karlsruhe is the only center to run an international host together with STN. In line with the programs of the German Federal Government, the Fachinformationszentrum Karlsruhe contributes to these objectives of specialized information policy:

- It helps to make available specialized information in the Federal Republic by producing databases.
- It ensures access to international specialized information through international cooperation in database production.
- It ensures access to foreign and international specialized information and to German specialized information abroad through the operation of a host.

The general concept of STN International has proved to work satisfactorily, and the partners in STN will further develop their cooperation in order to present an even more attractive range of databases in science and technology.

**M.I.S.T. and the STI Activities
of C.E.A.**

P. Löhner

Mission Information Scientifique et
Technique (MIST), Saclay

M.I.S.T. AND THE STI ACTIVITIES OF C.E.A.

The "Commissariat à l'Energie Atomique" (CEA), the french Atomic Energy Commission, created in 1945, is one of the main public-sector research organisation in France.

Composed of a civilian and a defense part (20 000 employees), CEA leads also an industrial group of international stature (37 800 employees).

The civilian part is divided in 6 main operational divisions dealing with fundamental and applied research in nuclear and non nuclear sciences :

- science of matter,
- life sciences,
- advanced technologies (like robotics, optronics semiconductors, ...),
- nuclear reactors,
- nuclear fuel cycle,
- nuclear safety.

These divisions are split on five principal sites around Paris for Saclay and Fontenay-aux-Roses, or in the south-east of France, for Cadarache, Grenoble and Valrho.

The operational structures also comprises the French Radioactive Waste Management Agency (ANDRA) and the National Institute for Nuclear Science and Technology (INSTN) which hosts the STI mission, MIST.

A functional structure with a General Secretariat and 6 divisions offer their services to the operational structures and the research centres.

These operational and functional structures employ about 14 000 persons and the total budget of the civilian part is 10 billions french francs, provided by :

- the Ministry of Research and Technology,
- the Ministry of Industry,
- and through particular contracts with private industries.

1 - Objectives of CEA - MIST

MIST is the abbreviated form of "Mission Information Scientifique et Technique", devoted to STI activities. It has been restructured at the beginning of this year and gathers now the functions of the previous "Documentation center" and a more general function of coordination of all the STI activities within CEA.

Its overall objectives are :

- to modernize the whole STI approach of the different centers of CEA in order to give better access to all kinds of information needed by searchers.

- to allow CEA to contribute efficiently to the development of the national STI system supported by the Delegation of Scientific and Technical Information of the Ministry of Research and Technology.

- to help developping technology transfer of CEA towards little and medium enterprises through an information service on the expertise and activities of CEA laboratories.

- to participate in R & D in the field of STI computation and training and to give advice for the implementation of all new STI technologies.

2 - Organization and structures

More than 350 persons are involved in scientific and technical information or documentation within CEA. 110 of them belong to MIST, which is located in Saclay, the most important research center of CEA, 25 kms south of Paris.

MIST is mainly composed of two sectors, one devoted to the library and multimedia edition, the other one being more oriented towards databases production and all related computer activities.

The library

It is the biggest specialized library in France for the energy and physics fields.

It holds about 3 000 titles of journals, 50 000 books and monographies, 30 000 congress proceedings and a huge collection of international reports (more than 600 000 reports and theses).

It belongs to the French union catalogue and provides all the usual services of a library with a reading room, collections in free access, interlending and document delivery services.

The library holdings are offered on-line and in videotex mode on the french minitel kiosk system.

Editing activities

Most of editing activities of CEA units are managed by the edition section.

With its desktop, offset, photo and reprography facilities it processes each year several types of publications, as well as reports, theses, posters, journals and a collection of scientific books.

Audiovisual activities are also developed within the video production group which holds very specialized devices and offers to CEA or external organisation its expertises and services.

Databases production

Bibliographical activities developed within MIST are concentrated in a section responsible at the national level for the input of French literature in the international INIS and ETDE networks.

This section produces also a database on congresses and exhibitions, the MEETING database, assumes on-line searching on several hosts and coordonnates scientific translations for CEA searchers or engineers.

An Information Center on scientific and technical resources is one of the new feature developed within MIST. This center is in charge of the development of a huge database gathering all informations on CEA research and activities : expertise, publications, patents, prestations, are some of the informations which will be available.

The last important activity in which MIST is involved is the field of computer applications and networks. A section is entirely devoted to the development of gateways, workstations and softwares for STI purposes as well as for the testing of new devices or technics in the field of OCR, automatic translations, CD ROM and all related optical technologies.



general organization ...

- **SIX OPERATIONAL DIRECTORATES**

- MILITARY APPLICATIONS DIRECTORATE
 - FUEL CYCLE DIRECTORATE
 - NUCLEAR REACTOR DIRECTORATE
 - LIFE SCIENCES DIRECTORATE
 - PHYSICAL SCIENCES DIRECTORATE
 - ADVANCED TECHNOLOGIES DIRECTORATE

- **INSTITUTE FOR RADIATION PROTECTION AND NUCLEAR SAFETY**

- **NATIONAL AGENCY FOR RADIOACTIVE WASTE MANAGEMENT**

- **NATIONAL INSTITUTE FOR NUCLEAR SCIENCE AND TECHNOLOGY**

- **RESEARCH CENTERS**

- **FUNCTIONAL DIRECTORATES**

WE WORK FOR THE FUTURE



radiation protection and nuclear safety

AN ABSOLUTE PRIORITY

ACTIVITIES



**STUDIES AND RESEARCH ON RISK PREVENTION
ADVICE TO GOVERNMENT AND OTHER AUTHORITIES
MANAGEMENT OF ACCIDENT SITUATIONS**

FIELDS



PROTECTION OF MAN AND THE ENVIRONMENT
effects of radiations, metrology,
dosimetry, radioecology



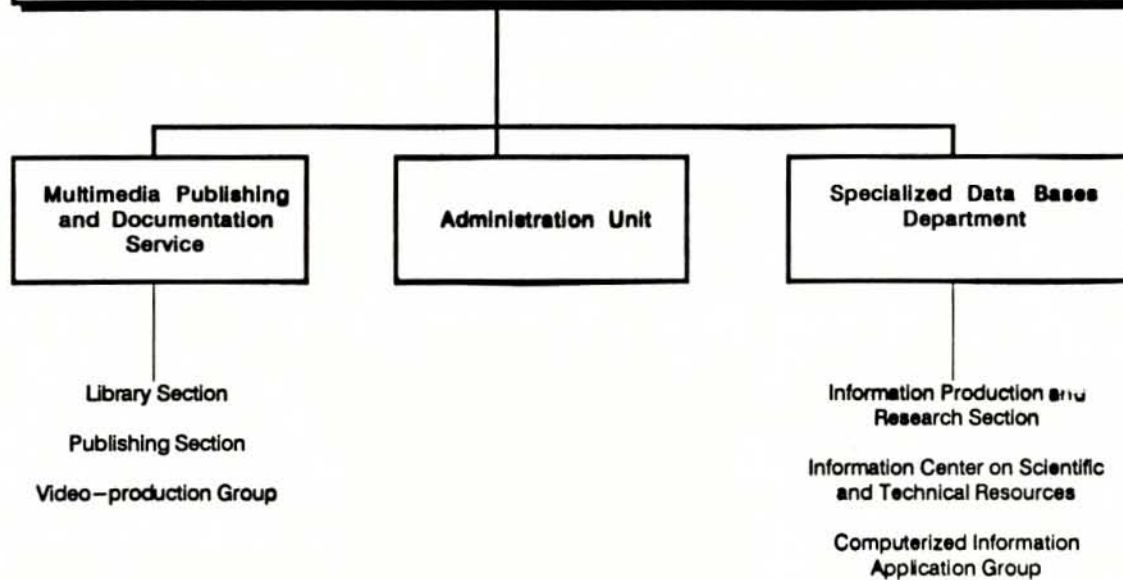
SAFETY OF INSTALLATIONS
assessment of risks, prevention and studies of accidents,
human factor studies, nuclear materials physical security



INTERVENTION
diagnostic assistance in case of radiation accidents,
soil rehabilitation, operational robots

WE WORK FOR THE FUTURE

Mission for Scientific and Technical Information



Specialized Data Bases Department

42 p

Information Production and Research Section 21 p.

Input for INIS-ETDE databases

Bibliographic searches

Translation and Terminology

Production of the Meeting data base on international conferences

Information Center on Scientific and Technical Resources 9 p

Production of a data base for CEA activities and competences

SVP on technology

Computerized Information Application Group 9 p

Systan system Development of work-stations

Development of in-house softwares

Electronic archiving computational linguistics networking

Multimedia Publishing and Documentation Service

(65p)

6 p.

Management

Publication Charges and Orders for reprints

Memberships in learned societies

Library

28 p.

Document Acquisition
and Supply(books, serials, reports,
CD-ROM)

Management

(catalogues, lending,
documents, equip-
ments...)

Publishing

22 p.

layout, graphic
design, DTPPhotography and
Photoengraving

Offset

Photocopy

Video-Production

9 p.

**Changing on-line Intermediary Services
in Hungary in a changing economical
Environment**

R. Roboz

National Technical Library, Budapest

CHANGING ONLINE INTERMEDIARY SERVICES IN HUNGARY IN A
CHANGING ECONOMICAL ENVIRONMENT

Peter Roboz
National Technical Library
Budapest, Hungary

In Hungary, more than ten years ago have online searching and online intermediary services started. It was the first country in the so-called socialist camp which established an electronic link to the West. At that time the political environment did not favour such links to Western online hosts. Suspicion and worries accompanied our efforts to introduce online search services on a commercial basis to any information user in Hungary.

Perhaps as a miracle, National Technical Information Centre and Library, OMIKK, was finally able to offer public database search services from the majority of scientific and technical databases supplied by the big hosts Dialog, Orbit, Data-Star etc. The necessary conditions, terminal equipment, telecommunications, online search expertise and, first of all, the availability of hard currency have gradually developed so that by the mid-eighties a flourishing information broker business was operated by OMIKK. Our search services run by three professional intermediaries did not only recover all costs involved but produced even a small profit that had been used to extension and development of our services as well as to finance our national INIS centre working within the same department of OMIKK, to provide Hungarian input to the INIS database. We had several hundred customers annually with a wide variety of queries covering various subjects in chemistry, engineering, biotechnology, physics, geosciences, electronics, management etc. Based on OMIKK's experiences and its availability of hard currency, other online search services were established in various universities, research institutes, industrial companies throughout the country. Unlike the political environment, the economical environment was favourable for scientific and technical research so that technical information was regarded a valuable tool.

Environmental science and technology

Turning our attention from political and economical environment to our natural environment and its protection as a scientific and technical discipline, OMIKK's online

services had been quite busy with searching information on various subject fields in pollution control and environmental impacts.

As being the national INIS centre as well, we had many queries concerning environmental safety of nuclear installations. The last decade saw the completion of and starting one by one the four units of the Paks Nuclear Power Plant in Hungary, supplying now about one quarter of the country's electric power. OMIKK received a number of contracts to supply background materials (literature and patent searches, reports, studies etc.) for the power plant's management on the environmental impacts and safety of PNPP, many of them through online searches of the INIS and of other databases.

Also, the second half of the 1980s kept us fairly busy in a much unhappier subject, information on the environmental impacts of the Chernobyl disaster. Since most information sources were restricted to access by the professional public, regarding the reasons and effects of the Chernobyl reactor accident, a substantial flow of queries were to process and to answer by our online service concerning mostly the environmental pathway of radioactive fallout, since we were one of the most reliable information sources of non-readily available documents. The majority of requests were concerned with the traces of radioactive isotopes in food, like milk, meat, fishes, vegetables etc., even in beer produced in Hungary.

To make a decent search of information on radioactive contamination and on other pollution and environmental issues, we have developed a special methodology for these searches, based on the categorization of databases.

The subject field of environment in the broad sense is obviously a multidisciplinary science and technology, i.e. it is part of almost any discipline in science and technology. Therefore, environment and pollution related queries should be answered by a multidatabase search. Three categories of databases should and can be searched for any particular query:

- 1) Environmental bibliographic databases, like Enviroline, Pollution Abstracts, ULIT, UFOR, parts of NTIS and Compendex etc.

- 2) Subject-oriented bibliographic databases concerning the particular subject field or fields of the query, and searching for their environment-oriented records. This category includes INIS, Chemical Abstracts, Metadex, INSPEC, Aqualine, CAB Abstracts, ICONDA etc.

3) Some factual databases existing in various areas of chemistry, pharmaceutical industry etc. - several of them in CD-ROM form - like DETEQ, Medical Toxicology and Environmental Health, OHM-TADS, CHRIS, Acid Rains etc.

This approach means that, receiving a query say on some pollution effects of a metallurgical plant, in addition to searching one or more databases in category 1, also Metadex (principal subject-oriented database of metallurgy) will be searched, and duplicates will possibly be eliminated. If relevant, also a factual database (e.g., RTECS) will be searched from category 3 (RTECS is available on CD-ROM). This way the recall of our search can be improved and, if duplicate elimination is applied, the costs will not be much higher.

Recent changes

Things have been changing. As the political environment has improved substantially in this country, the economical environment has become more serious, influencing unfavourably research and development in general, and information needs in particular. Heavy cuts have been made on budgets, companies have gone bankrupt, human minds have become preoccupied with instantaneous problems, and heavy losses of professionals in many fields should be reckoned with. Usage of information as a long-term investment has fallen rapidly. Environmental R&D and pollution control projects have been postponed. New nuclear power construction projects are beyond our view. Fortunately, no serious nuclear accidents occurred recently.

These changes have their effects on our little information brokerage at OMIKK. Bibliographic literature and patent searches, including those for topics in nuclear and environmental fields, have been reduced substantially. Customers from universities, research institutes, big state-owned corporations have almost disappeared, and new small and medium enterprises usually do not start long-term projects and, in addition, they find online searching to be too expensive for them. Government support of OMIKK has been cut so that any information service should earn all expenses or cease to exist. Our online service operations and those of the Hungarian INIS inputting center have got into a dangerous situation.

In order to survive, we switched our scope from scientific and technical information to business information, as far as preferences are concerned. In addition to online searching, CD-ROM database services were also introduced.

Three main groups of business information is offered, based on online database searching:

- Company information in Europe and North America from a number of databases
- Trade statistical tables and export/import price information from the TRADSTAT database
- Business, production and market news from Predicasts databases and from full-text business newsletter databases.

These services have an ever growing customer population now. Several competitor services in Hungary start similar operations. However, the strong demand for actual market and trade information - where to sell products, what to sell on specific markets, prices of goods and services at particular markets, joint venture offering and demands - cannot be satisfied properly and reliably. Another problem is the difficult availability of up-to-date, reliable and detailed information on European companies, especially those in East Europe.

Business information services, whatever deficient they are, seem to be well marketable for Hungarian customers. Another new service offered to the public by the National Technical Library within OMIKK is the cheap searches of various CD-ROM products. We have now several of them, including NTIS, INIS, Compendex Plus, CHEM-BANK and others for environmental topics, and a few others. We plan to add some more products to the list containing business information.

Through these strategies we are trying hardly to survive until better economical conditions allow full-scale utilization of our facilities and expertise for the development of the country. In the meantime we attempt to preserve and even to improve modestly the knowledge and the collection of valuable printed aids compiled through a decade of front-line online activities in OMIKK.

Further reading on online database utilization in Hungary in the 1980s:

Maria-Anna Courage, Peter Roboz:
 Analyse der Online-Datenbank-Nutzung in Ungarn
 Nachrichten_für_Dokumentation, 41, No. 6, p. 365-374 (1990)

Analyse der Online-Datenbank-Nutzung in Ungarn

von Maria-Anna Courage, Sankt Augustin und Peter Roboz, Budapest

Datenbanken, online; Ungarn; OMIKK; Nutzung

Zusammenfassung

In diesem Beitrag wird dargestellt, wie groß das Marktvolumen für Online-Datenbanken in Ungarn ist, wer die Nutzer sind und welche Datenbanken sie nutzen. Die Untersuchung ist auf den Markt für allgemein zugängliche Datenbanken eingeschränkt. Die Nutzung dieses Mediums ist in RGW-Ländern noch nicht in der Weise verbreitet, wie es im Interesse der Wettbewerbsfähigkeit der Unternehmen wünschenswert wäre. Ungarn war eines der ersten Ostblock-Länder, das die Bedeutung der elektronischen Informationsdienste erkannt und auch die Nutzung dieser Medien ermöglicht hat. Die Informationsindustrie in diesem Land ist noch relativ jung und die Strukturen des elektronischen Informationsmarktes sind noch wenig ausgeprägt. Daher ist es schwierig, ein vollständiges Bild des Untersuchungsgegenstandes zu zeichnen. Auf dem Gebiet der Datenbanknutzung wurde hier erstmalig der Markt in Ungarn in dieser Breite ermittelt und der Öffentlichkeit vorgestellt.

Summary

Investigation of Online Database Utilization in Hungary

The paper investigates the market volume for online databases in Hungary, the database users and the used databases. The investigation is restricted to the market of generally accessible databases. In COMECON countries, the use of those media is not yet such widespread as desirable for competitiveness of enterprises. Hungary was one of the first COMECON countries to realize the importance of electronic information services and to enable their use. The information industry in this country is relatively young and the structures of the electronic information market still need some further development. Therefore, it is difficult to present a comprehensive and complete description of this market. In the field of database utilization, this paper is the first publication to investigate the market in Hungary such comprehensively and to present it to the public.

1 Weltweite Entwicklung des Online-Angebotes

Die Entwicklung und Nutzung von Datenbanken hat in den letzten Jahren in industriell hochentwickelten Ländern einen enormen Aufschwung genommen. Inzwischen gibt es für nahezu jedes Fachgebiet eine oder mehrere Datenbanken unterschiedlicher Größe, Erschließungstiefe und -breite, mit unterschiedlicher Benutzerfreundlichkeit und Qualität.

Einer der weltweit anerkannten Datenbankführer, das *Directory of Online Databases* von Cuadra/Elsevier verzeichnet in seiner neuesten Ausgabe 4465 Datenbanken, die von 1950 Datenbankproduzenten hergestellt und von 645 Datenbank-Anbietern angeboten werden.

Online-Datenbankdienste haben sich in den letzten Jahren, besonders in den USA, zu einem Wirtschaftsfaktor mit beträchtlichen Wachstumsraten entwickelt.

Der Umsatz auf dem Gesamtmarkt für elektronische Informationsdienste ist seit 1985 von knapp 3,4 Mrd. \$ um durchschnittlich 24% pro Jahr auf rund 8 Mrd. \$ im Jahre 1989 gestiegen. Regional teilen sich die am Weltmarkt erzielten Umsätze etwa wie folgt auf:

57% für US-Anbieter, 31% für europäische und 12% für japanische Datenbankanbieter.

Von den Umsätzen der Anbieter des gesamten elektronischen Fachinformationsmarktes entfallen ca. 67% auf die USA, knapp 30% auf Europa und knapp 3% auf Japan.

Den größten Marktanteil in Europa hat mit 15% Großbritannien. Auf die Anbieter in der Schweiz entfallen 3,5%, in der Bundesrepublik Deutschland und in Frankreich jeweils ca. 3% der Umsätze. In Italien 2%. Mit ca. 3,5% Anteil an den Gesamtumsätzen ist die Position der sonstigen europäischen Länder vergleichsweise sehr schwach [1].

2 Datenbanknutzung in RGW-Ländern

Über den Marktanteil der RGW-Länder liegen keine genauen Zahlen vor. Man schätzt den Anteil von den Umsätzen der Anbieter hier auf knapp 1 Mio. DM insgesamt. Als größte Datenlieferanten mit etwa 50% werden die USA, gefolgt von der Schweiz mit 30% und der Bundesrepublik Deutschland mit 20% genannt.

Bei der Datenkommunikation mit den westlichen Ländern verhalten sich Ungarn, die Tschechoslowakei und die UdSSR

am dynamischsten. In der DDR sind auf dem Gebiet der Datenkommunikation und Datenbanknutzung in den letzten Jahren Fortschritte erzielt worden. Gegenüber dem internationalen Stand, auch dem in anderen sozialistischen Ländern, besteht jedoch noch ein erheblicher Rückstand. In Polen, Rumänien und Albanien kommt die Datenbanknutzung so gut wie gar nicht vor. Die meisten Datenbankanbieter stehen einem Ausbau ihrer Online-Kontakte mit Ost-Europa positiv gegenüber. Da die öffentlichen Datenbankanbieter in der Bundesrepublik einem zunehmenden Privatisierungsdruck unterworfen sind, richten auch sie ihr ökonomisches Interesse zwangsläufig auf Ost-Europa.

Obwohl die Datenbanknutzung in den RGW-Ländern bisher keine nennenswerte volkswirtschaftliche Bedeutung hat, kann sie für einige Datenbankanbieter in Zukunft eine betriebswirtschaftlich wichtige Funktion einnehmen. Im Sinne einer Nischenstrategie mit langsamen Wachstumskurven haben einige Hosts dies schon erkannt und sehen auch einen Bedarf beim Ausbau dieser Online-Kommunikation.

3 Stand der Entwicklung des Datenbank- und Datenkommunikationsnetzes der Länder des RGW

Ein wesentlicher Teil des Datenbankzugriffs zwischen Ost und West erfolgt über Österreich. Eine Transitrolle spielt bei West-Ost-Datenflüssen die „Radio Austria AG“ (RADAUS). Seit die in Wien ansässige RADAUS, eine Tochterfirma der österreichischen Post, im Jahre 1978 den Anschluß an internationale Datenetze hergestellt hat, ist auch ein Online-Zugriff auf Datenbanken möglich. Vorher mußten hierfür teure Auslands-Ferngesprächsleitungen benutzt werden.

Über diesen Knoten können sowohl westeuropäische Datenbanken als auch Datenbanken in Übersee angewählt werden.

Eine weitere Clearingstelle der internationalen Datenübertragung ist das *International Institute for Applied Systems Analysis* (IIASA) in Laxenburg bei Wien. IIASA wurde als gemeinsames Forschungsinstitut über die politischen Systemgrenzen hinweg gegründet. Das Institut hat über ein eigenes Netz Zugriff auf die Datenbanken von Data-Star, DIALOG, ESA in Frascati/Italien, VINITI in Moskau. Der Datenfluß geht hier in beide Richtungen. Von den USA wurde die HASA ein „wissenschaftliches Spionagezentrum der Sowjetunion“ genannt.

Die Datenübertragung für Osteuropa geschieht größtenteils mit analogen Netzen, wobei diese nicht multifunktional sind. Daß Paketvermittlungsnetze eine Voraussetzung für die Benutzung der Online-Systeme sind, wurde auch in den RGW-Ländern mittlerweile erkannt. Gegenüber der Leitungsvermittlung gestattet die Paketvermittlung eine bedeutend bessere Auslastung der Datenübertragungswege (Kanäle), da mehrere Nutzer über einen Kanal gleichzeitig angeschlossen, die Pakete zwischengespeichert und im Netz auf verschiedenen Wegen zu ihrem Bestimmungsort gelangen können.

Zu dem im „Komplexprogramm“ des wissenschaftlich-technischen Fortschritts der Mitgliedsländer des RGW bis zum Jahre 2000 enthaltenen Aufgaben gehört auch der in einem mehrseitigen Abkommen beschlossene Aufbau eines internationalen Systems für den automatisierten Informationsaustausch (ISA). Dieses beinhaltet u.a. im Rahmen des ISA1 zu entwickelnde paketvermittelte Datenetze der RGW-Länder.

Das von den RGW-Ländern gemeinsam in Angeritz gemeinsame Datenbank- und Datenbankkommunikationsnetz soll 1995 in den ständigen Dauerbetrieb überführt werden. Dazu wird sein Leistungsumfang laufend weiterentwickelt. Dieser wächst mit den aufeinander abgestimmten Anteilen, die von den einzelnen Ländern in das Netz eingebracht werden.

4 Die Entwicklung der Datenbanknutzung in Ungarn

Unter den Nutzern gilt Ungarn mit 50% als größter „Importeur“ der RGW-Ländern. Von den RGW-Ländern ist Ungarn das Land, in dem die Bedeutung der elektronischen Informationsdienste erkannt und wo auch die Möglichkeiten für die Nutzung von Online-Datenbanken geschaffen wurden.

Den ersten Anstoß für die Nutzung von elektronischen Fachinformationsdiensten in Ungarn gab im Jahre 1978 die *International Atomic Energy Agency* (IAEA). Im *Forschungsinstitut für Rechenstechnik und Automatisierung der Ungarischen Akademie der Wissenschaften* (SZTAKI) wurde über das Telefonnetz die Verbindung zu IAEA hergestellt und die ersten experimentellen Recherchen in den Datenbanken ENIS und AGRIS durchgeführt. ENIS (*International Nuclear Information System*) ist eine bibliographische Datenbank, in der Literaturhinweise aus den Bereichen Kernforschung und Kerntechnik enthalten sind. AGRIS (*International Information System for the Agricultural Sciences and Technology*) ist ein weltweites Informationssystem für Agrarwissenschaften und Agrartechnologie. Erst 1979 wurde, über eine Mietleitung zu IIASA, die Verbindung zu DIALOG- und ESA-Datenbanken hergestellt. Damit hatte eine zweijährige Testphase der Datenbanknutzung in Ungarn begonnen. Einige Einrichtungen konnten diese Datenbanken nutzen. Die Gesamtkosten wurden vom Staatskomitee für Technische Entwicklung (OMFB) und von SZTAKI übernommen, wobei die Nutzung dieser Datenbanken damals im wesentlichen Testcharakter hatte.

Für diese langsame Entwicklung der Datenbanknutzung in Ungarn gab es verschiedene Gründe.

Hemmende Faktoren waren insbesondere die schwache Telekommunikations-Infrastruktur und die verspätete Öffnung für den Anschluß an internationale Netze. Die Datenübertragung lief entweder über normale Telefonleitungen mit allen Schwächen und Beschränkungen, oder zuverlässiger, aber sehr teuer, über Mietleitungen. Das traditionelle Fernmeldenetz konnte für die Datenfernübertragung nicht die Anforderungen der Anwender erfüllen. Die Übertragung war zu langsam und die Fehlerrate relativ hoch, ebenso die Telefonkosten.

Das Telefonnetz in Ungarn ist ein leitungsvermittelltes Wählnetz. Wird ein Hostrechner über Modem oder Akustikkoppler angewählt, wird eine Telefonverbindung aufgebaut und bleibt so lange belegt, bis ein Partner die Leitung wieder freigibt. Die Leitung ist also auch blockiert, wenn gar keine Daten übertragen werden und kann somit nicht optimal ausgelastet werden. Darüber hinaus gab es in Ungarn damals nur wenige potentielle Nutzer von elektronischen Fachinformationsdiensten, für die sich die Kosten eines Netzes von Mietleitungen lohnten. Des weiteren hatte es der Staat versäumt, Anstöße für die Entwicklung eines elektronischen Informationsmarktes zu geben und günstige Rahmenbedingungen zu schaffen.

Aus diesem Grund wurde von der Ungarischen Post im Jahre 1982 für die Belange der Datenkommunikation das Leitungsvermittlungsnetz NEDIX, ein Produkt der japanischen Firma Nippon Electronic, konzipiert. Im Prinzip funktioniert die Leitungsvermittlung genauso wie im Telefonnetz. Der Unter-

schied liegt in modernster elektronischer Vermittlungstechnik mit digitaler Übertragung. Dadurch sind wesentlich höhere Übertragungsgeschwindigkeiten möglich. Allerdings bietet die Ungarische Post bisher für die Datenerübertragung nur 300 Baud Geschwindigkeit.

Datenwählverbindungen mit Leitungsvermittlung sind nur zwischen Teilnehmern mit gleicher Übertragungsgeschwindigkeit (gleiche Benutzerklasse) möglich. Die Gebühren sind, wie beim Telefon, von der Verbindungsdauer, der Entfernung, der Tageszeit und zusätzlich von der Übertragungsgeschwindigkeit abhängig. Dies bedeutet, daß solch ein Anschluß für Abfragen von Online-Datenbanken nur wenig sinnvoll ist, da die Grundgebühr relativ hoch ist, und nur einige Hosts den Zugang über Leitungsvermittlung anbieten. Das Datenwählnetz NEDIX bietet über den RADAUS-Netzknoten die Verbindung zu westeuropäischen und amerikanischen Hosts mit 300 Baud Übertragungsgeschwindigkeit. Die Nutzer realisierten den Fernzugriff zu den internationalen Hosts über diesen nationalen Netzknoten mit Hilfe folgender Grundausstattung:

Bildschirmterminal (ungarische Herstellung) mit ASCII-Standard, ein NEDIX-Modem als Datenübertragungseinrichtung, ein Anschluß an eine von der Ungarischen Post überlassene Datenübertragungsleitung.

Die Datenanschlüsse sind entsprechend den geltenden gesetzlichen Bestimmungen bei der Ungarischen Post zu beantragen, die nach Bewilligung (die meist sehr lange dauert) auch die Installation vornimmt.

Somit waren die ökonomischen, kommerziellen und technisch-organisatorischen Bedingungen geregelt und die Datenbanknutzung in Ungarn hat im Jahre 1982 begonnen. Der zweijährige Experimentalbetrieb der DIALOG- und ESA-Datenbanknutzung war eine gute Grundlage, die beiden Retrievalsysteme kennenzulernen und Erfahrungen mit der Datenbanknutzung zu sammeln.

5 Datenbanknutzung in Ungarn

Das Nationale Informationszentrum und Bibliothek für Technik, Abteilung Technoinform, OMIKK/Technoinform in Budapest ist das zentrale Verwaltungsorgan mit Außenhandelsrecht für die elektronische Informationsversorgung in Ungarn. Diese Einrichtung schließt die Verträge mit den Datenbank-Anbietern für alle Datenbanknutzer ab und verwaltet den vom Ministerium des Außenhandels für Fachinformationsnutzung eingeräumten Devisenetat. Die Datenbanknutzer, überwiegend staatliche Einrichtungen, zahlen die Datenbank-Nutzungsgebühren in ungarischer Währung dem OMIKK/Technoinform. Bislang hat es keine Devisen- oder andere Zahlungsprobleme gegeben.

Der Initiative des OMIKK/Technoinform ist es zu verdanken, daß ab 1982 öffentlich zugängliche und innerbetriebliche Informationsvermittlungsstellen (IVS) mit Geräte- und Budgetmitteln eingerichtet worden sind. Von diesem Zeitpunkt an wuchs die Anzahl der Online-Nutzer in Ungarn kontinuierlich an.

Die ersten öffentlich zugänglichen Informationsvermittlungsstellen waren u.a. das Nationale Informationszentrum und Bibliothek für Technik (OMIKK) in Budapest und die Bibliothek der Universität der Chemischen Industrie in Veszprem. Die ersten innerbetrieblichen Informationsvermittlungsstellen entstanden in den Zentralbibliotheken der chemisch-pharmazeutischen Industrie, wo die Bedeutung der Datenbanknutzung bereits sehr früh erkannt worden ist.

In Ungarn existierten zur Zeit 46 öffentliche und innerbetriebliche Informationsvermittlungsstellen, die zu insgesamt 15 Hosts Verbindungen haben. Darunter sind „Datenbank-Supermärkte“ wie DIALOG, DATA-STAR und ORBIT, die Datenbanken aus allen Bereichen (Wirtschaft, Patente, Wissenschaft, Technik, Medizin) anbieten sowie andere Anbieter, die sich auf die Bereiche der Medizin und Biowissenschaften (DIMDI) oder Wissenschaft, Technik und Chemie (STN) spezialisiert haben. Nicht vertreten sind die Real-Time-Systeme wie Reuters, Telerate oder Telekurse. Die folgende Tabelle gibt eine Übersicht über die von den Hosts an Benutzer vergebenen Nutzungsrechte (Paßwörter) in Ungarn:

| Host-Verbindung | Paßwörter |
|----------------------------------|------------|
| Dialog | 40 |
| STN | 18 |
| ORBIT | 19 |
| Data-Star | 16 |
| Telesystemes-Questel | 9 |
| DIMDI | 7 |
| Radio Austria (Mailbox) | 5 |
| IAEA | 3 |
| Pergamon Financial Data Services | 3 |
| ESA-IRS | 2 |
| ECHO | 2 |
| BRS | 1 |
| Bertelsmann | 1 |
| DRI | 1 |
| MCGRAW-HILL-INC. | 1 |
| Insgesamt | 128 |

An einigen Hochschulen und wissenschaftlichen Einrichtungen ist in den letzten Jahren ein Nutzerzuwachs durch zunehmende Endnutzerrecherchen entstanden, der in dieser Tabelle nicht berücksichtigt worden ist.

Wenn auch die Rangfolge der Nutzung keinen eindeutigen Schluß auf den Umfang der Nutzung ergibt, so enthalten doch die folgenden Zahlen die ersten Hinweise auf die Intensität der Datenbanknutzung in Ungarn.

| Zahl der IVS | Host-Anschlüsse |
|--------------|-----------------|
| 17 | 1 |
| 9 | 2 |
| 10 | 3 |
| 2 | 4 |
| 4 | 5 |
| 1 | 6 |
| 2 | 7 |
| 1 | 8 |
| 46 | 121 |

Wie die Tabelle zeigt, nutzen mehr als 1/3 der Einrichtungen Datenbanken bei nur einem Host, in den meisten Fällen bei DIALOG. Etwa 20 Einrichtungen haben 3 oder mehr Host-Anschlüsse und einige sogar mehrere Paßwörter beim gleichen Host. Das OMIKK hat eine führende Position mit 8 Host-Verbindungen.

Die Zahl der „echten“ Datenbanknutzer in Ungarn ist noch immer sehr gering. Unter „echten“ Datenbanknutzern versteht man Organisationen, die nicht nur Paßwörter bei den Anbietern belegen, sondern zum tatsächlichen Datenbank-

umsatz beitragen. Der Abschluß eines Nutzungsvertrages allein ist noch kein Marketing-Erfolg. Aus einem Passwort-Inhaber einen intensiven Nutzer zu machen erfordert beträchtliche Zeit. Etwa 15 Einrichtungen nutzen intensiv die Online-Fachinformationsdienste in Ungarn. Klassifiziert man die Datenbanknutzer nach Art der jeweiligen Organisation, so ergibt sich folgendes Bild:

| Art der Organisation | Host-Anschlüsse |
|------------------------------------|-----------------|
| Forschungseinrichtungen | 12 |
| Hochschule, Fachhochschule | 10 |
| Industrie und Handel | 9 |
| Chemisch-pharmazeutische Industrie | 5 |
| Fachinformationszentrum | 5 |
| Regierungsstelle | 3 |
| Medizinische Einrichtung | 1 |
| Nationales Informationszentrum | 1 |
| Insgesamt | 46 |

Überwiegender Teil der Nutzer sind Bibliotheken von Forschungseinrichtungen, der Ungarischen Akademie der Wissenschaften, der chemisch-pharmazeutischen Industrie, von Hochschulbibliotheken, Fachinformationszentren und des Nationalen Informationszentrums (OMIKK).

Allgemein bleibt festzustellen, daß die Datenbanknutzung in Ungarn weniger am tatsächlichen Bedarf ist, als sich vielmehr an den jeweiligen Finanzierungsmöglichkeiten orientiert.

Der Umfang der Datenbanknutzung ist beim OMIKK in den letzten Jahren stark gestiegen. Diese Tatsache wird auch durch die Analyse der Host-Anschlüsse bestätigt. Durch das vielfältige Angebot an Service-Leistungen spielt das Nationale Informationszentrum eine zentrale Rolle in der Fachinformationsversorgung Ungarns. Professionelle Informationsvermittler führen Auftragsrecherchen als Dienstleistung für Kunden aller Fachbereiche durch. Seit einigen Jahren wird das in der Informationsvermittlung angesammelte Know-how im Rahmen von Intensivkursen an Einsteiger weitergegeben. Vorträge, Diskussionen und praktische Übungen bieten Entscheidungshilfen für die Einführung bestimmter Informationssysteme im eigenen Hause an. Auch einige Datenbankanbieter und -hersteller, u.a. DIALOG, ORBIT, STN, DERWENT, INSPEC, führen englisch- und deutschsprachige Seminare im OMIKK durch. Für Kunden, die keine technische Ausrüstung, aber Zugangsberechtigungen zu bestimmten Hosts haben, werden Räume und Geräte für die Durchführung der Recherchen zur Verfügung gestellt.

Die Auftraggeber des Nationalen Informationszentrums sind solche Institutionen der Forschungs- und Entwicklungsbereiche, bei denen Informationsvermittlung als Dienstleistung noch nicht möglich ist, oder nicht in ausreichendem Umfang angeboten wird. Im Jahre 1989 wurden 240 externe Aufträge in dieser Einrichtung bearbeitet. Die folgende Tabelle zeigt, aus welchen Bereichen die Aufträge stammen. Für diesen Zweck wurden die Aufträge nach ihren inhaltlichen Schwerpunkten 12 Kategorien zugeordnet und die jeweiligen prozentualen Anteile verrechnet.

Die meisten Recherchen werden im OMIKK bei DIALOG, Data-Star, ORBIT und STN durchgeführt.

Relativ hoch ist der Anteil der Aufträge der chemisch-pharmazeutischen Industrie, insbesondere für Forschungs-

| Nutzerstruktur | Anzahl d. Aufträge | n _{av} |
|--|--------------------|-----------------|
| Chemie/Pharma | 55 | 22,92 |
| Handel | 28 | 11,06 |
| Kunststoff/Gummi/Polymeren | 27 | 11,25 |
| Sonstiges | 23 | 9,58 |
| Firmen- und Produkt-Informationen | 21 | 8,75 |
| Umwelt/Abfallwirtschaft Energiewirtschaft | 20 | 8,33 |
| Elektronik/Elektrotechnik Vermessungswesen | 19 | 7,92 |
| Biologie/Biotechnologie | 15 | 6,25 |
| Bauwesen | 9 | 3,75 |
| Mathematik/Informatik Management | 9 | 3,75 |
| Olindustrie | 7 | 2,92 |
| Maschinenbau | 7 | 2,92 |
| Gesamt | 240 | 100,00 |

und Entwicklungszwecke. Im FuE-Bereich liegt nach Angebot und Interesse der Schwerpunkt bei bibliographischen Datenbanken, obwohl auch die Nutzung der Patentinformationen eine steigende Tendenz aufweist.

Der Bedarf an Wirtschaftsinformationen ist hoch. Mehr als 60% der Fragestellungen wurden aus den verschiedenen Bereichen der Wirtschaftsdatenbanken beantwortet, wobei ein relativ hoher Bedarf an Wirtschafts-, Firmen- und Produktinformationen über die europäischen Länder besteht. 20% der Gesamtaufträge beziehen sich auf Firmen-, Markt- und Produktinformationen, die wegen fehlender Quellen nicht immer bearbeitet werden können.

Art der Fragestellungen:

- Wie kann schnell und zuverlässig ein Bild der europäischen Wettbewerbssituation, von Firmen und ihrer Wirtschaftskraft gewonnen werden?
- Wer sind die Konkurrenten?
- Wie können schnell und qualitativ hochwertig Adressen von potentiellen industriellen Abnehmern im Binnenmarkt gewonnen werden?

Gerade in diesem Bereich werden auch in den Ostblock-Ländern elektronische Firmeninformationsdienste einen immer größeren Stellenwert in der unternehmerischen Informationsbeschaffung gewinnen. In den vergangenen Jahren wurde bereits ein Großteil länderspezifisch verfügbarer Firmendirektbücher, Lieferantenverzeichnisse, Branchenführer und firmenkundliche Handbücher Online zur Verfügung gestellt. Oft sind diese Datenbanken die erste und einzige Quelle, um etwa über ein bestimmtes Unternehmen erste Informationen zu erhalten. Ob die Datenbankangebote in Ergänzung zu konventionellen Auskunftsstellen genutzt werden, hängt in starkem Maße vom Wissen um diese Möglichkeiten ab. Hierzu ist in den Ostblock-Ländern noch viel Marketing und Öffentlichkeitsarbeit der Datenbankproduzenten und Hosts notwendig.

Die breite Streuung der Datenbanknutzung über die verschiedenen Sachgebiete spiegelt eine positive Tendenz und die wachsende Bereitschaft zum Ausbau der Datenbanknutzung wieder.

Die Zahl der Aufträge im OMIKK ist von 1982 bis 1987 um 200% gestiegen. Zwischen 1988 und 1990 ist die Anzahl der Recherchen jährlich allerdings um ca. 10% zurückgegangen.

| Anzahl der Online-Recherchen im Nationalen Informationszentrum und Bibliothek für Technik in Budapest | | | |
|---|------|------|-----------------|
| 1987 | 1988 | 1989 | 1990 |
| 563 | 511 | 424 | 400 (geschätzt) |

Diese Rückentwicklung hat unterschiedliche Ursachen. Eine Reihe potentieller Abnehmer hat mit der Zeit eigene Informationsvermittlungsstellen eingerichtet. Die allgemeine Reformpolitik, die ökonomische Situation des Landes, die zunehmende Rationalisierung und die fehlende Konvertierbarkeit der ungarischen Währung haben auch Auswirkungen auf die Online-Fachinformationsnutzung.

Durch die zentrale Verwaltung der Datenbanknutzung in Ungarn war es möglich, eine ziemlich genaue Übersicht über die Anschaltstunden bei den einzelnen Hosts zu ermitteln.

15 Hosts hatten 1989 insgesamt 1500 Anschaltstunden zu verzeichnen. Diese Anschaltzeit verteilt sich überwiegend auf die folgenden fünf Hosts:

| Online-Umsätze in Ungarn im Jahre 1989 | |
|--|----------------------|
| DIALOG | 641 |
| STN | 330 |
| DATA-STAR | 100 |
| DIMDI | 55 |
| ORBIT | 50 |
| Insgesamt | 1176 Anschaltstunden |

Auf diese fünf Anbieter entfallen somit rund 80% der Gesamtanschaltstunden. Die Datenbanken der anderen 10 Anbieter wurden folglich nur mit 324 Anschaltstunden genutzt. Wie der Übersicht zu entnehmen ist, konzentriert sich die Nutzung schwerpunktmäßig auf die Hosts DIALOG und STN und hier auf die Chemie-Datenbanken.

Bei DIMDI resultiert die mit weitem Abstand größte Anschaltzeit aus der Nutzung der medizinischen Datenbanken MEDLARS/MEDLINE, EMBASE und der agrarwissenschaftlichen Datenbanken CAB und AGRIS.

Auch bei DATA-STAR werden die chemischen und medizinischen Datenbanken in relativ großem Umfang genutzt.

Wichtig sind hier auch die Umweltdatenbanken UFOR, ULIT und die Datenbank VWWW der Volkswagen AG.

Im Bereich der Wirtschaftsdatenbanken liegt der Schwerpunkt der Nutzung bei den Predicasts-, Creditreform- und Hoppenstedt-Datenbanken.

Der überwiegende Teil der Anschaltstunden bei ORBIT entfällt auf die Datenbanken RAPRA (Nachweise von Handelsnamen und Warenzeichen für die Bereiche Kunststoffe, Kautschuk und verwandte Materialien) und INPADO (Patentdokumente mit Angaben über Patent-Familien, die ca. von 50 nationalen und regionalen Patentämtern veröffentlicht werden).

Die höchsten Anschaltstunden in Ungarn hatten die Datenbanken des amerikanischen Datenbankanbieters DIALOG im Jahre 1989. Dieser Host hat weltweit das größte Angebot an wissenschaftlichen und technischen Datenbanken und bietet darüber hinaus auch Wirtschaftsdatenbanken an. Insgesamt stehen bei diesem Host Informationen aus 350 Datenbanken zur Verfügung. Von den 213, in sehr unterschiedlichem

| | | |
|---|---|---|
| Medizin EMBASE OCCUPATIONAL SAFETY AND HEALTH | Metallurgie METADEX | Nahrungsmittelwissenschaft FOOD SCIENCE AND TECHNOLOGY ABSTRACTS |
| Patentliteratur CLAIMS/U.S. PATENT ABSTRACTS | Pharmazie DRUG INFORMATION FULLTEXT INT. PHARMACEUTICAL ABSTRACTS PHARMACEUTICAL NEWS INDEX | Wirtschaftsdatenbanken BUSINESS SOFTWARE DATABASE CHEMICAL BUSINESS NEWBASE CHEMICAL INDUSTRY NOTES DUN'S FINANCIAL RECORDS PLUS ECONOMIC LITERATURE RECORDS INDEX FOREIGN TRADE & ECON. ABSTRACTS INVESTEXT INT. DUN'S MARKET IDENTIFIERS KOMPASS EUROPE MCGRAW-HILL PUBLICATIONS MENU-INT. SOFTWARE DATABASE MICROCOMPUTER SOFTWARE GUIDE PTS FOREIGN TRADE AND ECONOMIC ABSTRACTS PTS NEW PRODUCT ANNOUNCEMENTS/ PLUS PTS NEWSLETTER DATABASE PTS PROMT TRADE AND INDUSTRY ASAP TRADE AND INDUSTRY INDEX TRADEMARKSCAN |
| Dissertationen Dissertation Abstracts Intern. | Bücher- u. Zeitschriften-Kataloge BOOKS IN PRINT LCHARC | |
| Biologie BIOSIS PREVIEWS BIOTECHNOLOGY ABSTRACTS CURRENT BIOTECHNOLOGICAL ABSTR. AGRICOLA AGRIS | Chemie ANALYTICAL ABSTRACTS CHEMNAME CHEMSIS HEILBRON ANALYTICAL ABSTRACTS CHEMICAL ENGINEERING ABSTRACTS CHEMICAL INDUSTRY NOTES | |
| Elektronik, Elektrotechnik, Informatik, Informationstechnik, Informationswissenschaften, Mathematik | Sozialwissenschaften, Psychologie ERIC PSYCINFO SOCIOLOGICAL ABSTRACTS SOCIAL SCISEARCH | Linguistik LINGUISTIC AND LANGUAGE BEHAVIOR ABSTRACTS MLA BIBLIOGRAPHY |
| ABI/INFORM COMPENDEX PLUS COMPUTER DATABASE ENERGYLINE ISNEC LISA MANAGEMENT CONTENTS MATHSCI NWIS SCISEARCH | | |

Tab. 1.

Umfänge, die nutzen DIADOG-Datenbanken wurde 1989 mit nur 5 Produkten eine nennenswerte Anschaltzeit, nämlich 60% der Gesamtanschaltzeit, erreicht. Hierzu gehören die Datenbestände des *Chemical Abstracts Services (CAS)*, die medizinischen Datenbanken *MEDLARS/MEDLINE* und an dritter Stelle steht die Patentdatenbank *World Patent Index* der englischen Firma DERWENT. Danach folgt die Datenbank *INSPEC* (Elektronik, Elektrotechnik, Informatik) und *CAB Abstracts* mit weltweiter Fachliteratur aus allen Bereichen der Agrarwissenschaften.

Die restlichen 40% entfallen überwiegend auf die in Tabelle 1 aufgeführten Datenbanken:

Über die Nutzung der einzelnen Datenbanken anderer Hosts wurden von der zentralen Verwaltungsstelle keine Angaben gemacht und irgendwelche Sekundärliteratur hierüber existiert nicht. Da die Gebühren bei den meisten Datenbank Anbietern auf der Basis von Anschaltzeiten berechnet werden, kann man den Gesamtumsatz in Ungarn anhand der Gesamtanschaltzeit wie folgt abschätzen:

Die Preise für die Nutzung der Online-Datenbankdienste setzen sich aus folgenden Elementen zusammen:

- Anschaltzeitgebühren (der Zugriff auf den Rechner der Datenbankanbieter)
- Datenbanknutzungsgebühren (der Zugriff auf die einzelnen Datenbanken)
- Dokumentgebühren (Ausgabe der Dokumente)
- Telekommunikationskosten

Unter Berücksichtigung dieser Komponenten liegen die Kosten der Datenbanknutzung im Mittel bei knapp 300 DM/Std. Dies bedeutet bei 1.500 Anstaltstunden einen Gesamtumsatz von gut 400.000 DM im Jahre 1989 in Ungarn.

Von einem Informationsspezialisten wurde die Bedeutung der Informationsindustrie in Ungarn folgendermaßen eingeschätzt:

„Gegenwärtig bildet der Umfang und die Komplexität des Telekommunikationssystems eines Landes den Maßstab für sein industrielles und politisches Potential. Während vor einigen Jahren noch die Stahlproduktion oder der Ausbau des Verkehrsnetzes derartige Kriterien waren, so ist es jetzt die Dichte des Kommunikationsnetzes oder der Wert der Informationsübertragung. Die Telekommunikationsökonomie ist das wichtigste Merkmal der Informationsökonomie. Es ist diese Kapazität, die in großem Maße den Reichtum oder die Armut eines Landes bestimmt und sie wird den wichtigsten Faktor für Veränderungen in der Gesellschaft bilden.“ [2]

Bei aller Ungewißheit über die zukünftige ökonomische Grundlage des Ost-West-Handels kann davon ausgegangen werden, daß es auch in Ungarn einen steigenden Bedarf an Datenbankkommunikation geben wird und daß dieser Bedarf in Ansätzen auch finanziert werden kann.

6 Perspektiven der Datenbanknutzung in Ungarn

Für die Nutzung von Online-Datenbanken und Telekommunikationsdiensten in Ungarn und auch in anderen RGW-Ländern müssen in nächster Zeit stabile Arbeitsbedingungen geschaffen werden, damit die neuen Möglichkeiten zur schnellen und arbeitsplatznahen Informationsversorgung genutzt werden können.

Durch die bedingte Datenbanknutzung wurde eine Reihe technischer, organisatorischer und ökonomischer Probleme erkannt, deren Lösung verstärkte Anstrengungen aller Beteiligten erfordert:

Dies betrifft insbesondere:

- die Bereitstellung der erforderlichen Hard- und Software, der Modemtechnik und der Datenanschlüsse,
- die Erhöhung der Stabilität des Datennetzes,
- die Verbesserung der Datenfernverarbeitungstechnologie durch zunehmende Automatisierung der Recherchen durch den Einsatz intelligenter Terminals und die verstärkte Verwendung von Kommunikationssoftware,
- die weitere Erhöhung der Nutzerfreundlichkeit der Datenbankrecherchen und deren Zuverlässigkeit sowie die schnellere Bereitstellung der bei den Datenbank Anbietern und Herstellern angeforderten Kopien der Dokumentennachweise bzw. Original-Dokumente,
- die Bereitstellung weiterer Datenknoten mit größerer Kapazität zwischen Vermittlungskosten und Hostrechnern bei Nutzung der Paketvermittlungstechnologie (X.25),
- die bessere Koordinierung der Datenbank- und Seminarangebote in der Landessprache sowie kostengünstigerer Rabattierung für zahlungsschwache Länder.

7 Schlussfolgerungen

Die Funktionalität der politischen, ökonomischen und wissenschaftlichen Organe eines Staates sowie seine internationalen Beziehungen sind immer stärker davon abhängig, mit welcher Vollständigkeit, Zuverlässigkeit und Aktualität vorhandenes Wissen verfügbar gemacht, genutzt und erweitert werden kann.

Die neuen Technologien ermöglichen neue Informations- und Kommunikationsformen, sind auf Grund ihrer Effektivität und Vorzüge in hohem Maße selbst ein Faktor zur Beschleunigung des wissenschaftlich-technischen Fortschritts und erfahren deshalb eine hohe Akzeptanz durch die wissenschaftliche Öffentlichkeit.

Die Einführung dieser Technologien und ihre Überleitung in umfassende Nutzungsprozesse durch den Vertrieb vielfältiger Informationsleistungen befindet sich in Ungarn trotz des bereits erreichten Niveaus gegenwärtig noch in der Anfangsphase.

Literatur

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- [2] *Vinken, P.*: Information economy, government and society. - In: ASLIB Proceedings 34 (1982) Nr. 8, S. 325-349.

Anschrift der Autoren:

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**Dissemination of Information at
the Karlsruhe Nuclear Research Center**

A. Miller

Kernforschungszentrum Karlsruhe GmbH, Karlsruhe

**2nd Workshop on Information Management
in Nuclear Safety, Radiation Protection, and Environmental Protection
- Status and Perspectives -
GRS, Garching, October 30-31, 1991**

**Dissemination of Information at the Karlsruhe Nuclear
Research Center**

Information intermediaries, information brokers, information dissemination - how are these activities organized at the Karlsruhe Nuclear Research Center (KfK)?

Since 1975, all staff members of the Karlsruhe Nuclear Research Center requesting information can use the Fachinformationszentrum Karlsruhe for comprehensive information services. Dissemination of information, i.e. supplying the staff of the Nuclear Research Center with electronic scientific and technical information, is a service provided largely by the Fachinformationszentrum Karlsruhe (FIZ) and, between 1975 and 1978, one of its predecessors, the Zentralstelle für Atomkernenergie-Dokumentation (ZAED). The former Literature Department (LA) of the Nuclear Research Center, which is now named Main Department for Library and Communication Services, discontinued nearly all its information and documentation activities in 1975 and has since been concerned mainly with literature supply services.

Around 1984, the staff of the Nuclear Research Center developed the need for online access to the databases of the Fachinformationszentrum Karlsruhe (FIZ Karlsruhe) and those of the Scientific Technical Network International (STNI), respectively. This possibility was opened up at that time. Currently, approximately 300 staff members of the Nuclear Research Center, including those users who access these systems without individual user identifications, have access to the databases of STN online through the local information and communication network (IaC network) of the Nuclear Research Center from their workstations or through information and communication user stations (IaC stations) in the Central Library.

Since 1985, also the LASSO catalog database of the Central Library of the Main Department for Library and Communication Services (HBK) has been made available through STN as a private file. All staff members of the Nuclear Research Center requiring information and able to manage STN MESSENGER have since the

possibility to use *one search language* for the LASSO catalog database of the Central Library and for more than 100 databases of FIZ Karlsruhe or STN International. After a rather long startup period, this service is now utilized very effectively, but as yet only by the information professionals or information specialists.

In order to familiarize prospective users with the proper way of conducting searches in LASSO via STN MESSENGER, we regularly run half-day courses at the Center for Advanced Technological and Environmental Research (overhead 1). In these courses, we also explain the structure, the possibilities and the limitations of the LASSO catalog database. Some 60 staff members of the Nuclear Research Center annually participate in these courses. At these half-day courses, we also draw attention to the benefits to be derived from the much more extensive courses run by the Fachinformationszentrum Karlsruhe, and to the absolute need to attend those courses for anybody wanting to conduct searches successfully and economically in the multitude of databases of the Fachinformationszentrum Karlsruhe.

Roughly since 1984, all information supply services of the Nuclear Research Center have been coordinated by the Central Library of the Nuclear Research Center. The staff of the Nuclear Research Center are informed of the possibilities and needs associated with the use of electronic scientific and technical information in line with current requirements. In cooperation with the Fachinformationszentrum Karlsruhe, they are also made aware of special programs, such as the academic programs. Within the framework of this coordination of information and communication at the Nuclear Research Center reference is also made, of course, to services offered by other hosts, such as DIALOG, FIZ Technik/DATASTAR, and GENIOS, and recommendations are expressed with respect to the use of those services.

At present, assistance of special information intermediaries is necessary because the hosts don't offer real helps to the users for information retrieval. The user is obliged to learn languages in order to search in the host databases. These languages tend to be forgotten surprisingly fast when not used. In order to remedy this deficiency in information supply at least to some extent, we offer to searchers using the information and communication user stations in the Central Library METALOG by SOFTCONTROL with the appropriate search modules, e.g. for STN, FIZ Technik/DATASTAR, and JURIS, and recommend this search software also to the staff of the Nuclear Research Center for their personal computers to be used in searches from their respective workstations. For the main users of FIZ Tech-

nik/DATASTAR, we recommend the SHERLOCK user guidance system for search purposes.

Following the request of library users, we have now made available our LASSO catalog database also through the mainframes of the Central Data and Information Processing Department (HDI) of the Nuclear Research Center by way of a largely self-explanatory user guidance system. This allows those library users who come to the library only occasionally to conduct searches in the catalog quite effectively. Examples of this user guidance are shown on the next few overheads.

The information and communication user stations installed in the Central Library and, if desired, also the workstations in the Institutes and Departments of the Nuclear Research Center offer access to electronic scientific and technical information by way of this access menu (overhead 2):

After having dialed "1" the user, through an auto logon, can directly access our LASSO catalog database at the Fachinformationszentrum Karlsruhe. He must be able to use MESSENGER in order to conduct searches. Dialing "2" provides access to the Central Data and Information Processing Department (HDI) of the Nuclear Research Center, which offers the "INFORMATION" access menu (overhead 3). From here, after dialing "13," one reaches the "Literature Search" menu (overhead 4). In this submenu, there is a choice among "LASSO library catalog, publications, and periodicals." LASSO, the catalog database of the Central Library, comprises the whole inventory of books, pamphlets, and a choice of other documents, such as reports, totally approx. 100,000 items of documents are in LASSO, including the title cards processed before 1970, which originally had not been present in a machine-readable format. "Publications" means the complete list of all publications by the staff of the Nuclear Research Center, again including those publications which originally had not been present in a machine-readable form. "Periodicals" contains the inventory list of all journals kept by the Central Library and the approximately 40 Institute or Department Libraries. Dialing "1" in this submenu takes one to the "TEXT RETRIEVAL PROGRAM" menu (overhead 5). Upon entering a question mark, a brief description of this guided search system is given in five display windows, and entering "S" takes one to the "Search Program to the Catalog of the Central Library" menu (overhead 6). This menu contains brief explanations of the most important search aids. In each field, a specific explanation can be requested by means of a question mark, and upon entry of an "E" for expand or expansion, a word list for the given search term will be delivered (overheads 7-8, example: E. Mueller).

Access to the LASSO catalog database is possible from more than 1500 IBM terminals, personal computers or workstations through the local information and communication network of the Nuclear Research Center. The services offered by the LASSO catalog database, with its self-explanatory user guidance or guided search system, have already led to an extremely high acceptance among users. We have learned from this that we are able to address a large number of new users, not reached previously, for information dissemination at the Karlsruhe Nuclear Research Center. An important reason for the high level of acceptance of this user-friendly system surely is the possibility of online-ordering of the documents. The way in which this possibility to order documents is offered can be seen from the next overhead (overhead 9). Under "order book at CL (Y/N)?" the "N" for "No" is given in this case.

Despite the high current level of acceptance, brief courses have been planned for the near future in which introductions into this search technique will be run through the Center for Advanced Technological and Environmental Training of the Nuclear Research Center (overhead 10). In this way, especially those user groups are to be approached whom we have not been able to reach so far, and some advertising is to be made for this search possibility.

In a library able to supply these services, information dissemination is more than just using, or allowing to use, the electronic specialized information offered by hosts; it also includes supplies of the new electronic media, i.e. the compact disk and floppy disk information services through stand-alone solutions or, if technically feasible, service computers or servers in local information and communication networks.

We first tested this development in stand-alone solutions. Specific plans for network solutions took shape roughly two years ago. On the basis of these plans, we have been able since 1991 to offer these compact disk and floppy disk information services through the local information and communication network of the Nuclear Research Center for test purposes.

The following floppy disk information services are offered at present:

VDI-Wärmeatlas; Current Contents Physical, Chemical & Earth Sciences; Current Contents Engineering, Technology & Applied Sciences; and Current Contents Life Sciences,

and the the following compact disk information services are offered at present:

Verzeichnis lieferbarer Bücher (VLB, List of the German Books in Print), PER-INORM, Hanover Fairs (Industrial Fair and CeBit), Wer liefert was (Who Supplies What), and ABC der deutschen Wirtschaft (ABC of German Industry).

The compact disk information services can be accessed in the basic menu of the information and communication user stations by entering "4" (overhead 11). The submenu then following allows a choice to be made among the CD information services listed above (overhead 12).

The floppy disk information services of Current Contents can be dialed directly from the basic user menu by numbers "5-7."

More implementations are being prepared both for compact disk and for floppy disk information services. At present, e.g. the AUGÉ date file of hazardous materials of the Nuclear Research Center is being planned. The same will be done with SIGEDA, a date file of hazardous materials processed by the Siemens company.

With the centralized offer of the new electronic media we would like to avoid multiple subscriptions of compact disk and floppy disk information services, we would like to avoid stand-alone solutions and, in particular, we are obliged to offer to the users standardized solutions and structures for conducting searches and, in addition, we are very interested to reduce the number of multiple subscriptions of the printed services also available.

Brief introductions have been planned also for the new electronic media. We think they are necessary because of the different search techniques unfortunately required by these services, and also to explain the contents of these new information services. In this way, we also want to remove obstacles to use, and switch the users of the Central Library of the Nuclear Research Center over to these modern techniques of information supply, again chiefly to the self-service mode.

The next overhead (overhead 13), "CD and floppy disk information services of HBK," briefly describes the technical side of these information services offered by the Library and Communication Services Department of the Nuclear Research Center. Anybody interested in the details, especially the local networking for information and communication of the Nuclear Research Center, can read this up in a publication by G. Rudolph and E. Schlindwein in DATACOM, July 1991, under the title of "LAN eines Großforschungszentrums."

Our intention to offer users in the self-service mode nearly all the information available on very different channels or systems requires an extensive range of training for information and communication techniques.

The course (overhead 14) titled "Hints and Tricks for Conducting Data Base Searches in Hosts," which we are running with the Center for Advanced Technological and Environmental Training of the Nuclear Research Center for users experienced in conducting searches, is offered to achieve economy in performing search operations.

We think that especially such courses are indispensable whenever information is offered in the self-service mode.

IK 22 : Einführung ins Recherchieren in der Katalogdatenbank LASSO der ZB

| | |
|----------------------|---|
| Kursleitung : | Dr. A. Miller |
| Referentin: | Frau Dr. U. Klemm |
| Ziel : | Erlernen der Recherchersprache MESSENGER des STN (FIZ) Karlsruhe für Recherchen in den Katalogen der Zentralbibliothek (ZB) bzw. in LASSO (LA Such-System Online), mit Bezug zu den Datenbanken des Host STN. |
| Teilnehmer : | Alle Mitarbeiter des KfK, die die Zentralbibliothek (ZB) der Hauptabteilung Bibliotheks- und Kommunikationsdienste (HBK) regelmäßig nutzen, d.h. die ausreichend Bedarf für Katalogrecherchen haben, für Autoren- sowie Sachrecherchen und/oder für Bestellungen von Dokumenten aus der Katalogdatenbank LASSO, sowie Mitarbeiter, die zusätzlichen Bedarf an elektronischer Fachinformation haben. |
| Kursdauer : | Jeweils 4 Stunden, 8.30 - 12.30 Uhr |
| Termin : | Nach Bedarf, voraussichtlich jeweils mittwochs. Die Termine werden rechtzeitig bekanntgegeben. |
| Ort: | HBK/Zentralbibliothek (Bau 303) |
| Anmeldung : | Tel. 3632, vormittags (Frau Rittirsch) |



HBK / Zentralbibliothek

- 1 LASSO bei STN / FIZ Karlsruhe
- 2 KfK/HDI:
LASSO
Veröffentlichungsverzeichnis
Zeitschriftenverzeichnis
- 3 GENESYS
- 4 CD-ROM-Informationendienste
- 5 Current Contents: Physics, Chemistry, Geology
- 6 Current Contents: Engineering
- 7 Current Contents: Life Sciences
- 8
- 9
- 0 METALOG



1.10.91

INFORMATION**OPTION = = = >**

| | | |
|----------|---|--------|
| USERID | - | LTA010 |
| TIME | - | 19:07 |
| TERMINAL | - | 3278 |
| PF KEYS | - | 24 |

- 0** - Systemuebersicht
- 1** - HDI - Handbuecher
- 2** - IBM-Literatur
- 3** - **Neues und HDI-Produktinformation**
- 4** - Software-Boerse (fuer HDI-Grossrechner)
- 5** - LIS (Subroutine-Libraries Information System)
- 6** - Geraete-Kataster der KFK
- 7** - Kleinanzeigen-Boerse
- 8** - Beratungsliste
- 9** - Benutzerverzeichnis
- 10** - CPC Programmbibliothek Programmindex
- 11** - KFK-Telefonverzeichnis
- 12** - Betriebsbeauftragte fuer Gebaeude
- 13** - **Literaturrecherche**
- X** - EXIT

Enter **END** command to terminate application



1.10.91

----- Literaturrecherche -----

OPTION ==>

USERID - LTA010
TIME - 19:08
TERMINAL - 3278
PF KEYS - 24

- 1 - Bibliothekskatalog LASSO
- 2 - Veroeffentlichungen
- 3 - Zeitschriften
- X - EXIT

Enter END command to return.

TEXT RETRIEVAL PROGRAM

Bitte waehlen Sie aus!

- (S) Volltextsuche im ZB-Katalog (alle Kat.-Karten)
- (B) Bestellte Buecher listen
- (A) Statistik
- (?) Benutzeranleitung

- (X) Dialog beenden

- ? Auswahl

Weiter mit: ENTER

PF3/PF15 beendet den Dialog an
einer beliebigen Stelle

Suchprogramm zum Katalog der Zentralbibliothek

Volltextsuchfelder Maskierung: durch '*' vorne, hinten oder in der Mitte

Formatierte Felder Maskierung: durch '*' nur am Ende moeglich

Expansion: z.B. E Mueller ==> alle Werte ab Mueller

----- Felder fuer Volltextsuche -----

Titel/Autor:

.....

Klassifikation (Schlagworte):

.....

Konferenzort:

----- Formatierte Felder Eingabe jeweils nur 1 Wert moeglich -----

Autor:

Aufnahmenummer: Signatur:

Fuer weitere Hilfe koennen Sie in jedem Feld ein ? angeben.

Weiter mit: ENTER

Dialog beenden: PF3/PF15

Anfangsmenue: Titel = X

```

Suchprogramm zum +-----+
| Sie koennen einen Suchwert mit X markieren
Volltextsuchfelder Maskierung: du | um ihn fuer die Suche zu uebernehmen.
Formatierte Felder Maskierung: du | Weitere Ausgabe (J/N): J
Expansion: z.B. E Mueller ==> a |
| Ausw ----- Suchwerte ----- Anzahl
----- Felder fue | == =====
Titel/Autor: | . MUELLER 654
E MUELLER..... | . MUELLER-#
Klassifikation (Schlagworte): | . MUELLER-ALBRECHTS 1
..... | . MUELLER-ARMACK 1
| . MUELLER-BOELING 2
Konferenzort: ..... | . MUELLER-BRANDECK 1
| . MUELLER-BROMLEY 1
----- Formatierte Felder (E | . MUELLER-DAEHN 2
| . MUELLER-DIETSCH 1
Autor: ..... | . MUELLER-DIETZ 1
| . MUELLER-ETTRICH 1
Aufnahmenummer: ..... Signat | . MUELLER-FRANK 1
| . MUELLER-GINDULLIS 1
Fuer weitere Hilfe koennen Sie in | . MUELLER-GROTE 1
----- | . MUELLER-HARTMANN 2
Weiter mit: ENTER Dialog +-----+

```

```

Suchprogramm zum +-----+
                  | Sie koennen einen Suchwert mit X markieren
Volltextsuchfelder Maskierung: du | um ihn fuer die Suche zu uebernehmen.
Formatierte Felder Maskierung: du | Weitere Ausgabe (J/N): J
Expansion: z.B. E Mueller ==> a |
                  | Ausw ----- Suchwerte ----- Anzahl
----- Felder fue | === =====
Titel/Autor:        | | . MUELLER-BOELING, DETLEF
                   | | . MUELLER-BRANDECK, GISELA
Klassifikation (Schlagworte): | | . MUELLER-BROMLEY, NICOLAI
                   | | . MUELLER-DAEHN, CLAUS
                   | | . MUELLER-DIETSCH, W.
Konferenzort:      | | . MUELLER-DIETZ, HEINZ
                   | | . MUELLER-FRANK, ULRICH
----- Formatierte Felder (E | | . MUELLER-HARTMANN, E. HRSG.
Autor: E MUELLER..... | | . MUELLER-HARTMANN, ERWIN HRSG.
Aufnahmenummer: ..... Signat | | . MUELLER-HEINZERLING, THOMAS
                   | | . MUELLER-HENNEBERG, HANS HRSG.
Fuer weitere Hilfe koennen Sie in | | . MUELLER-JENTSCH, WALTER
----- | | . MUELLER-JENTSCH, WALTHER
Weiter mit: ENTER      Dialog +----- | | . MUELLER-KIRSTEN, HARALD J.
                  | | . MUELLER-KURZWELLY, MANFRED HRS

```

Aufnahmenummer: 114756

Signatur: R Gre 24

Autor:

Greis, Klaus P.

Titel:

WORD 5.5 : Einsteigen leichtgemacht / Klaus P. Greis
Braunschweig : Vieweg, 1991. - XII, 224 S.
(Buecher fuer Einsteiger)

ISBN

ISBN 3-528-05168-X

Inventarnummer:

Inv.-Nr. 145533

DM 49,--

Klassifikation:

R8 Textverarbeitung/Word

R8 Lehrbuecher

weitere Ausgabe erwuenscht (J/N)? J Buch in ZB bestellen (J/N)? N

**IK 23: Recherchieren in der Katalogdatenbank
LASSO, im Zeitschriften- und im KfK-
Veröffentlichungsverzeichnis von HBK/
ZB über SPF-I-Benutzerführung der HDI**

- Kursleitung :** Dr. A. Miller
- Referenten:** Dipl.-Math. R. Kupsch
Dr. A. Spiegl
Frau Math.-techn.-Ass. E. Schnepf
- Ziel :** Einführung ins Recherchieren über Benutzerführung.
- Teilnehmer :** Alle Mitarbeiter des KfK, die die Zentralbibliothek
(ZB) der Hauptabteilung Bibliotheks- und
Kommunikationsdienste (HBK) des KfK nutzen.
- Kursdauer :** Jeweils 2 Stunden, 9.00 - 11.00 Uhr
- Termin :** Nach Bedarf, voraussichtlich jeweils dienstags oder
donnerstags zu einer der oben aufgeführten
Fragestellungen. Die Termine werden rechtzeitig
bekanntgegeben.
- Ort:** HBK/Zentralbibliothek (Bau 303)
- Anmeldung :** Tel. 3632, vormittags (Frau Rittirsch)



1.10.91

HBK / Zentralbibliothek

- 1 LASSO bei STN / FIZ Karlsruhe
- 2 KfK/HDI:
LASSO
Veröffentlichungsverzeichnis
Zeitschriftenverzeichnis
- 3 GENESYS
- 4 CD-ROM-Informationendienste
- 5 Current Contents: Physics, Chemistry, Geology
- 6 Current Contents: Engineering
- 7 Current Contents: Life Sciences
- 8
- 9
- 0 METALOG



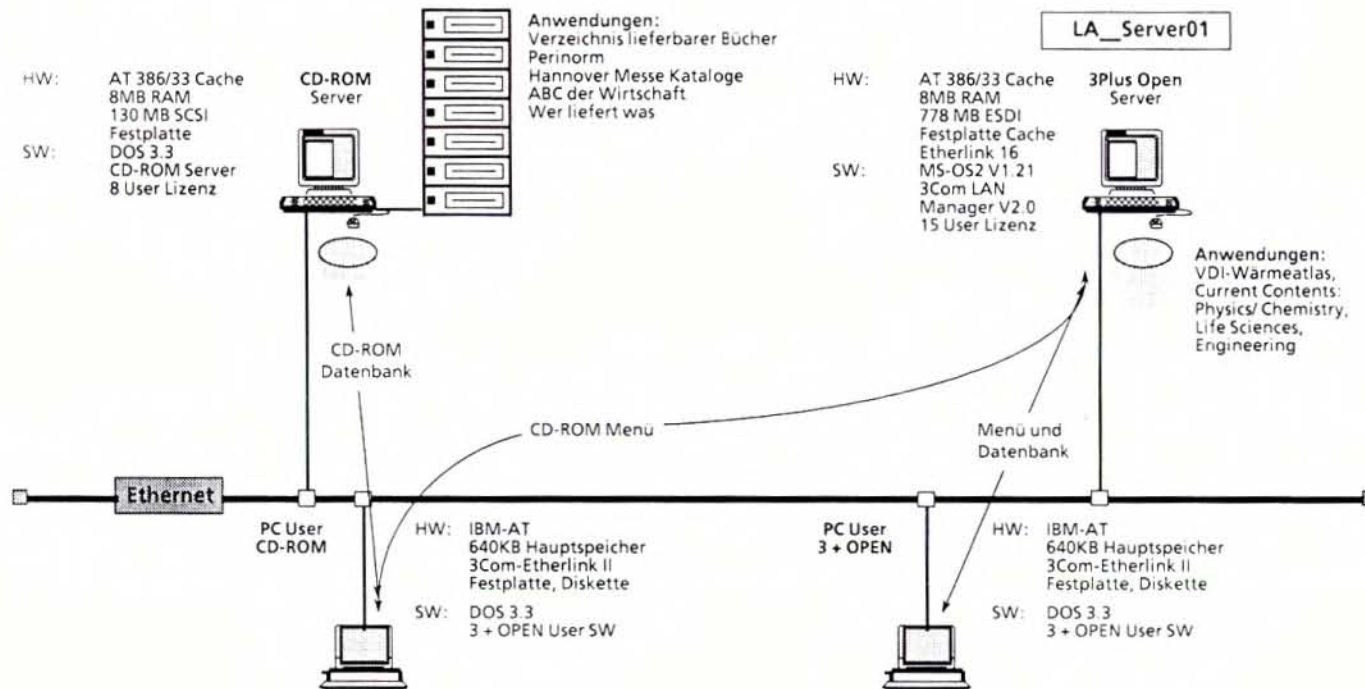
HBK / Zentralbibliothek

CD-ROM-Informationendienste

- CD-ROM-Betrieb: Hilfen, Neuigkeiten
- VLB Verzeichnis lieferbarer Bücher
- LIBRI Bücher
- SBZ Schweizer Buchzentrum
- PERINORM
- Hannover Messen: CeBIT, Industriemesse
- Wer liefert was?
- ABC der deutschen Wirtschaft



1.10.91



**IK 24 : Tips und Tricks für das Recherchieren
in Datenbanken von Hosts**

- Kursleitung :** Dr. A. Miller
- Referentin:** Frau Dr. U. Klemm
- Ziel :** Erlernen von Regeln und Techniken, die ein
ökonomischeres Recherchieren ermöglichen.
- Teilnehmer :** Mitarbeiter des KfK, die bereits größere Erfahrung
im Recherchieren haben, insbesondere im
Recherchieren in den Datenbanken des Scientific
Technical Network International, die über das
Fachinformationszentrum Karlsruhe genutzt
werden können.
- Kursdauer :** Jeweils 2 Stunden, 9.00 - 11.00 Uhr
- Termin :** Nach Bedarf, voraussichtlich jeweils mittwochs. Die
Termine werden rechtzeitig bekanntgegeben.
- Ort:** HBK/Zentralbibliothek (Bau 303)
- Anmeldung :** Tel. 3632, vormittags (Frau Rittirsch)



1.10.91

**The Central Library of the GSF Research
Centre - not only a Database Supplier**

M. Reich

GSF Forschungszentrum für Umwelt und
Gesundheit GmbH, Neuherberg

**The Central Library of the GSF Research Centre - not only a
Database Supplier**

Martina Reich

GSF Forschungszentrum für Umwelt und Gesundheit GmbH, Neuherberg

In this lecture the electronic data processing application in the Central Library of the GSF Research Centre and in addition the services provided for its users will be presented.

These days a modern and efficient library has to make use of the wide range of modern information technology tools in order to provide an optimal service.

Not only is it necessary to use automated systems for the library administration, e.g. acquisition or cataloguing; ideally information technology tools should be provided to the user to enable optimal handling of bibliographic data.

This is even more essential for a special library.

GSF - Research Centre for Environment and Health Care

The GSF, which is a National Centre for Environmental Sciences, carries out an extensive range of research and development programmes in the field of environment and health care. The activities concentrate on the protection of man and his environment from hazardous effects, and using scientific and technical knowledge to improve health provision.

Information technology services of the Central Library

The Central Library of the GSF Research Centre is a special library supporting its users with the necessary basic literature and providing an online information service.

Establishing information technology services the requirements of our users have been the determining factor: literature information should be available at their workplace, without time spending training of complex retrieval systems.

Using a modern database system called LARS (=Efficient Storage and Retrieval System), compatible with the Local Area Network (LAN) installed at the research centre, several inhouse databases are created by the library. Using the menu-driven retrieval feature of LARS the required information can easily be found, even for non-professional end-users.

Inhouse databases

* *Library Catalogue (1989 seqq.)*

This database contains about 6.000 entries about monographic publications, reports, proceedings and special issues, collected by the library since 1989.

* *Serials Catalogue (current)*

This database contains the complete periodicals collection of the Central Library, including the holdings statements of the institute libraries.

* *Publications (1990 seqq.)*

This database contains bibliographic data of the publications of the GSF and those of its scientists.

* *Modern Knowledge (current)*

This database contains the tables of content of popular scientific journals, e.g. Spektrum der Wissenschaft (1978 - 1988) and Biologie in unserer Zeit (1970-1990).

Current Contents on Diskette^R

Three issues of the Current Contents are offered by the library:

- * Life Sciences
- * Agriculture, Biological and Environmental Sciences
- * Physical, Chemical and Earth Sciences

This selection is related to the scientific research in the GSF.

Private files for scientific use

The literature management system LARS is not only used by the library. The system is also offered to scientists of the Research Centre to enable creation of personal literature databases.

The library supports the user in consultancy, software training, and regular user meetings. It also offers help in the creation of database definition, in the development of individual output formats, and provides a hotline support.

One of the most required services is the support in data conversion, that is the adaptation of records retrieved from external databases, e.g. from Current Contents, in order to feed them into private bibliographic files.

Technical Application

The database system LARS (version 5.05) with a 16-place limited network version is used via the LAN under Banyan Vines network software. Access to software and databases is possible from all PC's (about 450) via the LAN.

Fig. 1 demonstrates the technical installation and possible access via the LAN:

Software and data are provided on a server. Read and write access is allowed to selected databases for authorized library staff,

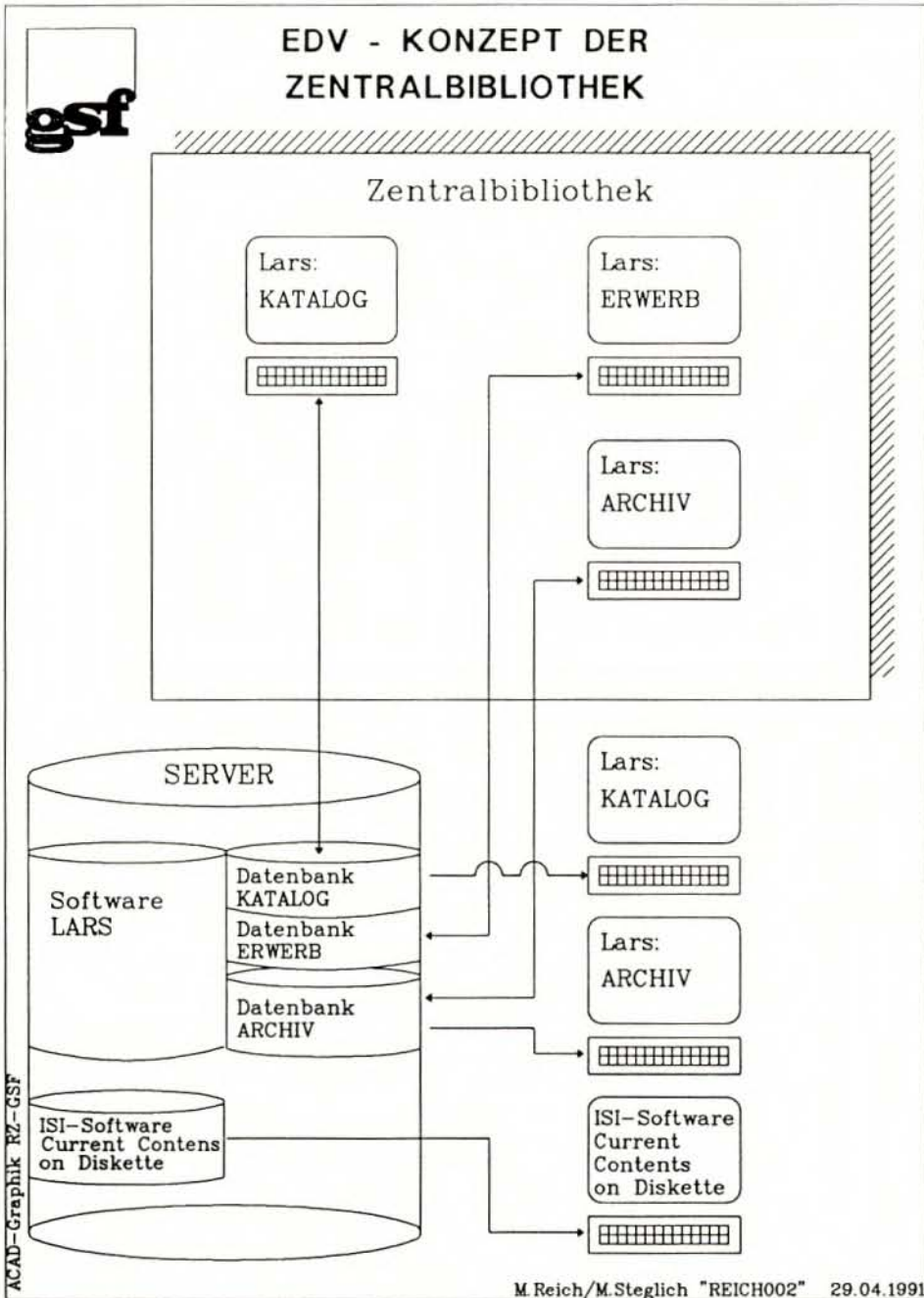
while users outside the library have 'read only' access (in the figure shown by the arrows).

Access rights are controlled by a highly specialised password protection, either by the network software or the application software.

Status and Perspectives

Because of its high engagement in professional information handling the Library of the GSF Research Centre plays a central role in all questions related to literature and information technology applications. That is an ideal position to encourage and facilitate information handling throughout the campus. Additionally we are able to help our users to create information technology solutions that really work. Thus the services of the library, not only related to information technology, are highly demanded by both our users and the board of directors.

In the near future we intend to install CD-ROM applications into the LAN, e.g. databases like MEDLINE or BIOSIS, in order to support the scientific research at the GSF with even more comprehensive information sources.



**Task and main Areas of Work of the GRS
Information and Documentation Service (IuD)**

V. Watermeyer

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TASKS AND MAIN AREAS OF WORK OF THE GRS INFORMATION AND DOCUMENTATION SERVICE (IuD)

V. Watermeyer

1 THE TASKS OF GRS IuD

GRS decided as early as in 1980 to build up an information and documentation service (IuD).

Its tasks were defined as follows:

- establishment of an information supply service (IVS) with access to external data bases,
- establishment of an internal data base to give the scientists of the company quick and comprehensive access to the literature available within GRS, and
- documentation of scientific knowledge gained from work within GRS and published there.

In the course of the last few years the technological progress has made it easier to tackle these tasks in an efficient way.

GRS-IuD today has at its disposal an informational infrastructure (illustration 1) that allows on-line access to more than twenty national and international information suppliers. With the help of GRS computers it uses the internally developed information systems and makes its own systems available to all GRS staff who may want to use it.

2 MAIN AREAS OF WORK

There are now three main areas of work for GRS-luD (Illustration 2) that have been singled out over the years from information needs of GRS staff and GRS customers:

- information service
- documentation
- information management

2.1 Information service

This area mainly comprises the supply of information to GRS staff to give them quick and efficient support in their work. Here, it is mainly on-line data bases that are employed, but other conventional sources are also in use. Illustration 3 shows that this GRS service has been accepted and is used more and more frequently.

GRS-luD subdivides the information services into Quick References, Deeper Investigations and Profile Services.

2.1.1 Quick References

Here, urgent queries requiring less than an hour's work are dealt with.

2.1.2 Deeper Investigations

Information services which require more than one hour of work are termed Deeper Investigations. Here, the amount of time calculated includes preparation (interview), the investigation as such with the help of on-line data bases, and an extensive review (pre-selection) of the results gathered.

There is a differentiation of three types of Deeper Investigation:

- Deeper Investigation of facts
(e.g. material or numeric data corresponding to certain materials or chemical amalgamations)
- Deeper Investigations of literature
(e.g. bibliographical references to reports or other publications)
- Deeper Investigation of complete texts
(e.g. complete texts of articles from newspapers and journals).

2.1.3 Profile Services

GRS-IuD offers the subscription to periodic profile services, i.e. a kind of subscription to information concerning one particular topic area. If for instance a GRS staff member wishes to be informed on a constant basis about the latest developments of a specialist area, then he/she can receive - usually on a monthly basis - the current information that was fed into the relevant on-line data bases.

At present, four different kinds of profile services may be used:

- Literature information: newly published literature in a certain topic area
- Events information: information on conferences, meetings and trade fairs on selected topic areas
- Press review: a daily compilation of reports from various international newspapers and news agencies, giving the full text of the article (published at 10.00 am every morning)
- "Reuters Textline" another press review, but tailored according to the needs of the subscriber; published weekly and covers up to 2000 international journals and newspapers, giving the full text of the article.

2.1.4 Information Consultation

At present, there are more than 5000 data bases worldwide offering their services commercially. A considerable part of the work done in GRS-luD is formed by the constant survey and selection of the information available on the market. The knowledge of the existence of new online data bases and the know-how of where exactly which information is available is the basis for an efficient use of external information sources and for the consultation given to GRS-luD customers during the process of information acquisition.

2.2 Dokumentation

The area of work of documentation includes the constant development and re-evaluation of the internally used information systems. It has the following particular tasks:

2.2.1 Description

The GRS library data base (BISS), devised by the literature supply and GRS-luD, presently has data of over 50 000 documents available. This data base comprises all the literature available in the libraries of Cologne and Garching. Content information of newly-received literature is extricated by GRS-luD with the help of the so-called GRS Thesaurus and can thus be found in the library system under criteria of its content.

2.2.2 Update of the Thesaurus

The Thesaurus "Reaktorsicherheit und Strahlenschutz (Reactor Safety and Radiation Protection)", developed and used by GRS, is now available in its fourth edition (June 1991) and contains about 1200 officially defined key-words that enable the user to make full use of the potential of the literature available within GRS. Since in the fields of work of GRS the scientific terminology undergoes constant change, a thorough review of the Thesaurus vocabulary is necessary. For this purpose computer programmes which can perform most of the formal work automatically have been developed within the company.

2.2.3 Data base GLIS

GLIS is the "Graue Literatur-Informationssystem (Grey Literature Information System)" of GRS which was developed specially by the communication department for the documentation of so-called "grey literature". There are various internal sources that provide the input for this data base. Consequently, it contains about 8000 documents such as brochures, company publications, lecture scripts of GRS staff, and references to lecture slides made in the GRS graphic design office.

2.2.4 Illustration processing

The data base GLIS contains, as mentioned above, about 3000 references to slides. These slides have been scanned by GRS-luD and can be shown on monitors with graphic display ability during the information search.

The illustration archive of the editing section is currently being fed into an illustration administration programme with the help of a video scanner. This Windows application makes a comfortable recording possible and offers quick access in the search for particular illustrations, e.g. for GRS publications and lectures.

2.3 Information management

Approximately two years ago GRS-luD set itself another main area of work by taking over the task of information management (IM). Within this field, it offers various services.

2.3.1 IM Systems

GRS-luD develops and installs IM systems for external customers and internal users. This is to be understood in the first place as the establishment of PC information work stations that combine word processing, data base systems, and graphics applications under comfortable and user-friendly surfaces. These are mainly used as documentation systems for project controlling and also as fast information supply systems, e.g. for the documentation of incidents or data from nuclear installations.

The role of the above-mentioned illustrated information also becomes more important with these systems. Illustrations of whole plants or components of a plant can submit valuable information for the user and thus are already integrated during the development of such information systems.

The transformation of such "small info systems" happens in close consultation with the customers in order to be able to transform quickly and effectively the specific information needs.

2.3.2 Adaptation of Software

Alongside its own developments, GRS-luD also uses a range of commercial software packages for the establishment and up-keep of its information systems. The varying PC work station configurations often demand an individual adaptation of these systems, which is carried out on-site if requested by the customer.

2.3.3 Training

GRS-luD also provides the corresponding training for the systems it has installed. Here, individual training produces good learning results. Our concept is as follows:

- one learner
- one instructor, and
- one PC work station.

These training courses generally last for one day at the least and are in most cases held on GRS premises.

2.3.4 Know-How Transfer

GRS-luD keeps in permanent contact with national and international information suppliers by taking part in workshops and conferences as well as by organising its own events.

Such personal contacts mainly serve the transfer of knowledge and form valuable help in the exploitation of new sources of information.

SUMMARY AND FURTHER OUTLOOK

The acceptance and frequent use of the GRS-luD services indicates that the need for this service surely is bound to grow continually through the widening use of electronic data processing in offices and because of the mounting need for information from the users' side.

In future, GRS-luD will face new challenges like:

1. User surfaces

The possibilities for the user to carry out independently deeper investigations in online or in-house data bases demand a stronger use of targeted user guidance.

2. Helpdesk

Training and support of users in the techniques of investigation and system applications will grow more important for GRS-luD.

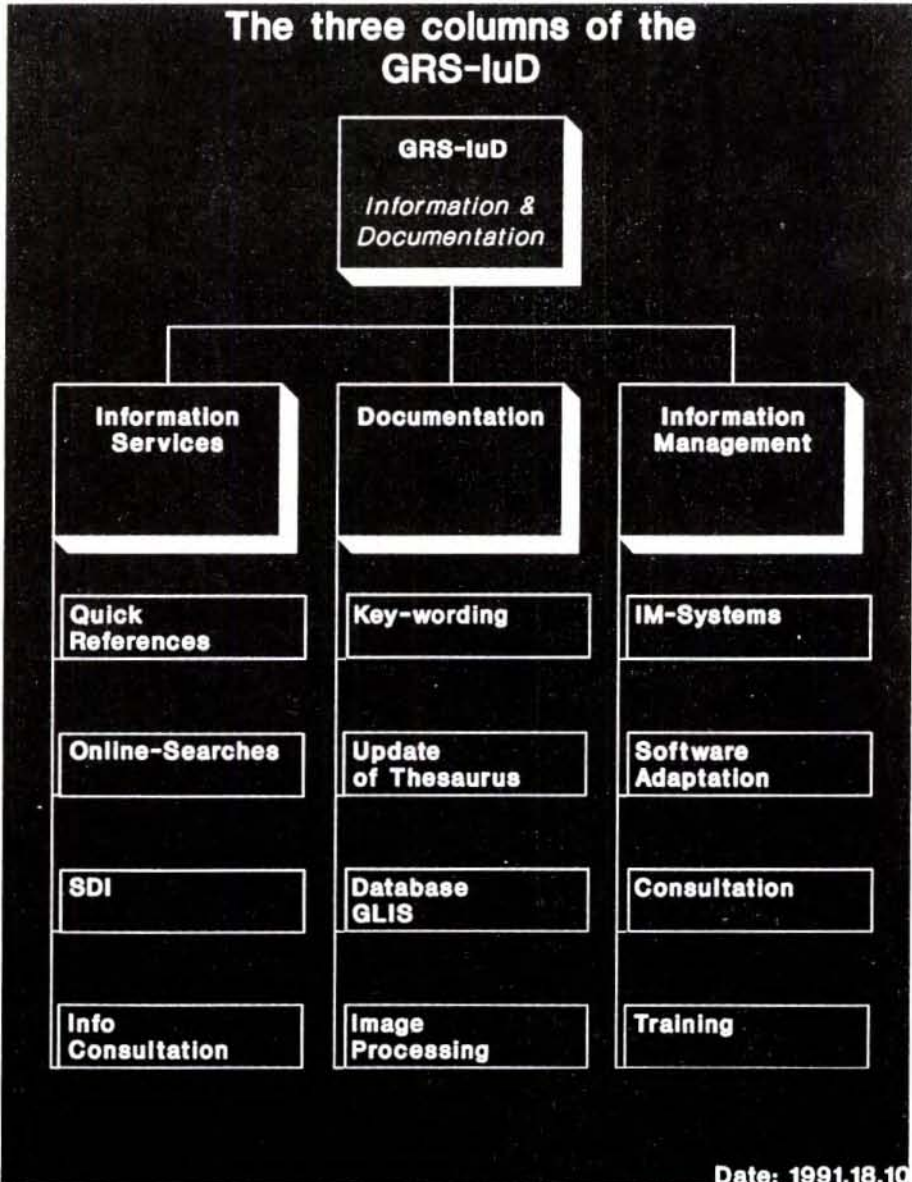
3. Value Added Services

The improvement of the current quality of investigation through an intensive re-appraisal of the investigation results as well as quicker access to the original sources are tasks that GRS-luD is committed to resolve.

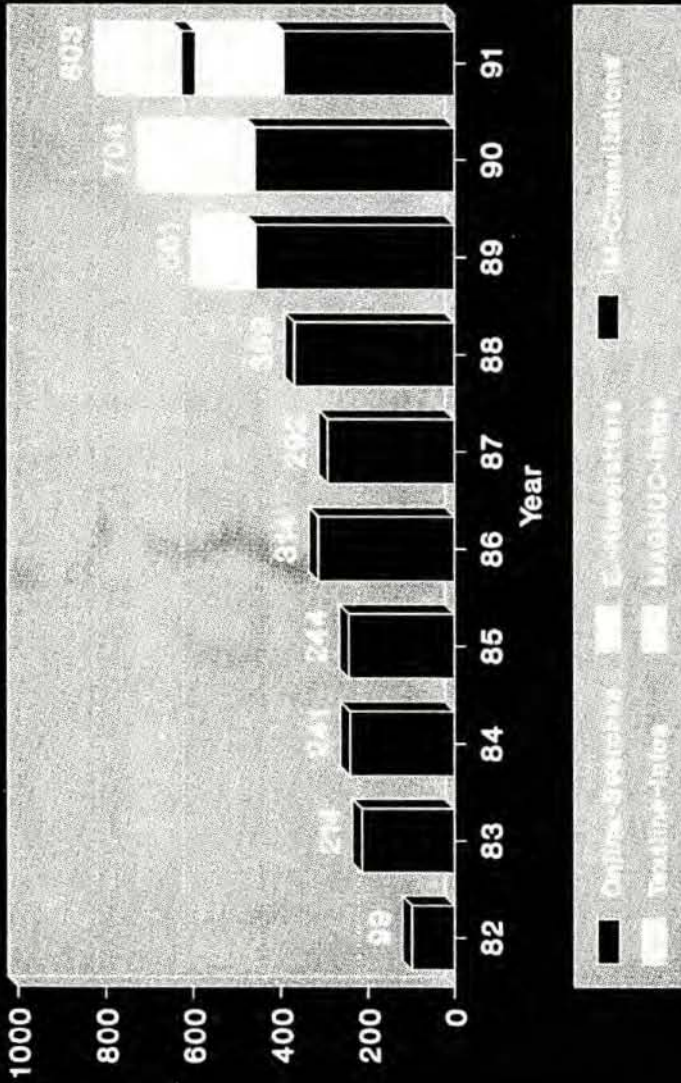
4. Token Ring

One of the main aims of GRS-luD is the establishment of further information systems and an improved access for all GRS staff through more efficient exploitation of the existing electronic data processing infrastructure.

The three columns of the GRS-IuD

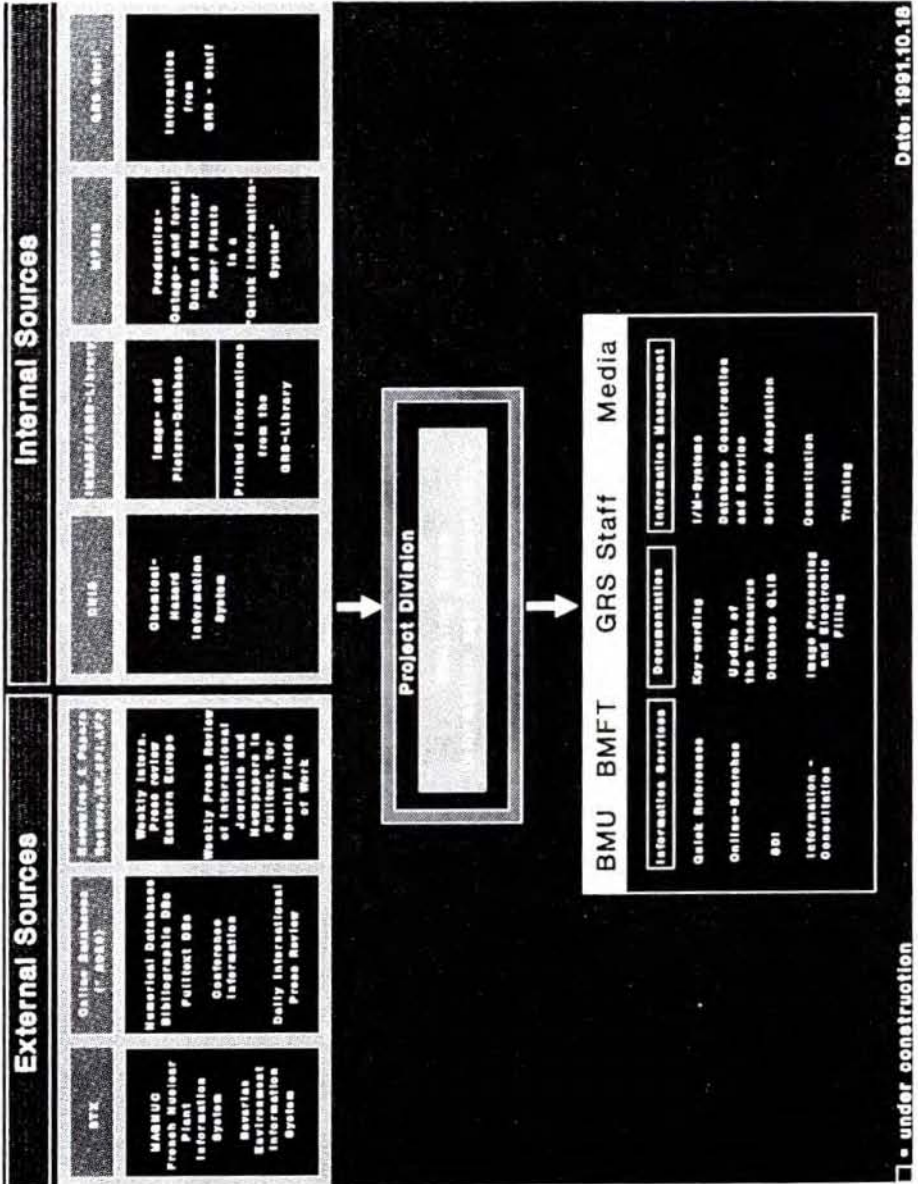


IUD Information Services



Date: 1991.10.18

Illustration 3



Date: 1991.10.18

Illustration 1

Nuclear Safety Documentation in the IPSN

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NUCLEAR SAFETY DOCUMENTATION IN THE IPSN

THE IPSN

The institute for nuclear safety and protection (IPSN) was formed in 1976 within the French atomic energy commission (CEA).

The IPSN embodies the knowledge and experience of the CEA in the field of nuclear safety and radiation protection. As such, it provides expert advice to the government authorities responsible for nuclear safety.

Its capability is based on research and development work carried out in the fields of safety and radiation protection: knowledge of the affect of radiation on man and living organisms, the development of means of protecting man and the environment, the study of accidents in nuclear facilities, the development of methods for preventing accidents, as well as means of taking emergency action in accident situations.

Its many skills enable the IPSN to address the needs of the government authorities: the ministry of industry, the ministry of health, the ministry of the environment, the ministry of research, the ministry of the interior, the ministry of agriculture and the ministry of defense. More specifically, it assists the government authorities in charge of licensing procedures, regulations, inspection of facilities, emergency plans and informing the public.

Organisation and Budget

The director of the IPSN is assisted by three executive directors respectively responsible for nuclear research, protection and safety. The IPSN itself is divided into five departments corresponding to

activities relating to protection of man, protection of the environment, the safety of facilities, the safety of nuclear materials and research and development work on the safety of reactors and other nuclear facilities.

The IPSN has a staff of some 1300 and a budget of about 1200 million Francs, of which part (250 million Francs) is provided by the ministry of industry. This budget finances the technical assistance provided by the IPSN to government authorities.

The Nuclear Safety Documentation Bureau (BDSN)

The BDSN consists of around 15 staff and is part of the safety assessment division (DES). Its task is to collect and to provide the documentation necessary for the work of the IPSN in the field of safety.

The DES includes departments specialized in the analysis of different types of facilities (pressurized water reactors, fast reactors, experimental reactors, naval propulsion reactors and fuel cycle installations) as well as departments specialized in subjects important to safety: equipment, fire hazards, the human factor, probabilistic studies and the assessment and avoidance of risks. Safety assessment itself is backed up by a major experimental research program essentially carried out within the safety research division, frequently in collaboration with partners in other countries. To conduct these studies of which the scope is vast, the engineers need a reliable source of information and documentation.

Internal organisation and operation of the BDSN

Like any other documentation centre, the BDSN centres around a library. The BDSN library contains some 6000 works to which around 400 are added every year. The fields covered by this hoard of knowledge are extremely numerous, from the fundamental disciplines of mathematics, physics, chemistry, mechanics, geology, data processing and psychology to more applied and multi-disciplinary sectors such as nuclear safety, radiation protection, environment sciences, the study of nuclear waste, the safety of transport, different forms of energy and different energy policies, economics, legislation, studies of nuclear risks and industrial risks in general etc.

The library also includes some 350 French and foreign periodicals, ranging from magazines containing general information to scientific reviews specialized in the nuclear field.

As matters relating to public opinion and the supply of information have now become highly important in the nuclear field, the BDSN also makes available a wide selection of the everyday press and circulates a daily press review within the IPSN which contains all articles which have anything to do with nuclear energy.

The BDSN also keeps complete and up-to-date sets of the general and specialized regulatory documentation: the official gazette of the French Republic, the official gazette of the European Community, standards, basic safety rules, as well as the design and construction rules jointly drawn up by EDF and the constructor Framatome. Foreign regulatory documents (mainly American and German) are also stocked, although keeping them up-to-date is a more difficult matter.

This documentation is managed using a computer program in which 14,000 items are listed: books, dictionaries, reference works, articles of reviews, symposium papers, reports etc. The

software, which is specially designed for documentation, makes interrogation extremely simple. It is currently being ported to the network of the department which will enable remote interrogation of the bibliographic files by DES staff. The lists available on-line ensure that the users are kept up-to-date as regards recent editions, analyses of reviews and symposia, reviews of official gazettes, lists of reports published by the department and lists of reports received by the BDSN, symposium calendars etc. Whenever the BDSN cannot itself meet the requests of the users, it calls upon other organizations such as the central documentation unit of the CEA at Saclay, the CNRS, the EDF documentation services, and many other libraries in France and other countries (particularly university libraries), the first three of which can be interrogated on-line via data servers. Bibliographic searches are of course frequently supplemented by the interrogation of computer databases (generally INIS, Pascal or EDB). Interrogation is carried out either locally or via the department of the MIST specialized in this field.

Documentation produced by the IPSN and supporting action

Apart from its conventional documentation tasks, the BDSN is responsible for keeping and circulating the reports produced by the DES (around 120 per year). Those of these reports which are public are widely circulated outside the IPSN, both in France and in other countries. The documentation centre includes a print shop for the design, printing and distribution of the DES publications, as well as a graphics unit which produces transparencies, slides, posters for conferences, organisation charts, brochures and illustrations. In the audio-visual field, the BDSN can also supply the IPSN with assistance. It has supervised the production of a video

illustrating how the IPSN is organized to deal with nuclear accidents. The audio-visual resources of MIST-Saclay made a major contribution in the making of this video.

In the field of international relations, the BDSN is a source of logistical support for the IPSN. Since 1986, nuclear safety has been becoming more and more international and the IPSN cooperates with many organizations in other countries such as the USA, USSR, Central Europe, China, Korea, Spain, United Kingdom and of course Germany with which common CRS-IPSN operations have been highly fruitful. The cooperation agreements are frequently associated with exchanges of documents in the fields involved (thermal hydraulics and accident studies). The BDSN manages the flow of information: supply of IPSN publications to foreign organizations and distribution of documentation received from correspondents of the CEA.

The BDSN also offers translation services, in collaboration with the MIST-Saclay translation department and independent translators, and has the interpreters required for meetings, visits and missions. The BDSN subcontracts work which it cannot itself carry out either due to its particular nature or due to the workload involved (typing, printing, producing publications etc.).

In the field of radiation protection, there is a specialized documentation unit within the dosimetry and health physics division (DPHAD) *Public Information* to supply the public with information, the IPSN includes a public relations department which organizes nuclear safety exhibitions throughout France. It even participated in an exhibition in Moscow in October 1990. In addition, it includes a documentation centre devoted to educating the public. This centre regularly issues bibliographic bulletins and data sheets on topical matters relating to nuclear safety.

Within the ministry of industry, the nuclear facility safety directorate

(DSIN), which the BDSN also assists, has developed facilities for the supply of data on nuclear matters.

The most important and innovative of these is the Magnuc viewdata server which can be accessed by Minitel terminal 24 hours a day. This facility, which was created in 1987, makes available to all the information concerning health originating from the central service protection against ionizing radiation (SCPRI) and monthly readings concerning radioactivity in the environment furnished by the nuclear operators and the IPSN. The SCPRI, for its part, has recently inaugurated another viewdata server intended for the general public. This service, which is named Teleray, is accessible via Minitel terminal and gives the ambient radioactivity in the different regions of France.

The DSIN also publishes a nuclear safety bulletin (SN bulletin) intended for informing the public, government authorities and organisations interested in the operation of nuclear installations.

Lastly, it is also the task of the BDSN to both address the need for scientific and technical data of the experts and analysts of the IPSN, and to collaborate in initiatives to supply the public with information, with the result that it has to work in an extremely wide documentary field.

Progress remains to be made in the field of international exchanges of information. For, although international cooperation may have greatly increased in the last few years, the existing documentation systems concerning nuclear information in other countries remain difficult to utilize. An international database easily accessible (for interrogation and uploading) should make it possible to rapidly obtain information on nuclear installations in different countries and facilitate the work of experts, who frequently have an urgent need for technical data.

Public Information and Acceptability

S. Latek

National Atomic Energy Agency (NAEA), Warsaw

PUBLIC INFORMATION AND ACCEPTABILITY

Remarks on the Activity
of the NAEA Department of Training and Public Information

"The Chernobyl lesson" has been an impulse for the whole European Continent to improve the efficiency of national structures and services responsible for taking action to cope with the hazardous situation.

What is especially important is teaching the public to behave rationally. This can be achieved by explaining the nature of radiation and the related hazards, the ways of minimizing possible effects of contamination, etc.

The National Atomic Energy Agency in Poland is well aware of its responsibility for educating the public to behave appropriately in the event of a radiation-related hazard as well as for providing the public opinion with objective information in order to win its acceptance for medical, agricultural, and industrial uses of atomic energy.

The Energy Policy Guidelines do provide for nuclear power development in the country in the first decade of the next century, however it can only be successful on condition that atomic energy is economically competitive and publicly acceptable.

With such a legal framework, when the advanced construction of the Zarnowiec nuclear power plant has just been given up and the post-Chernobyl neurosis aggravated on the fifth anniversary of the accident, it is not easy to implement a policy with is to persuade the public into accepting nuclear energy.

In spite of that, the National Atomic Energy Agency has initiated certain activities, which, when consistently carried out, should bring about a change in the public attitude towards nuclear power. The essential characteristic of that policy is openness and sincerity.

Information and educational activities focus on three major areas: radiation protection, environmental and health effects of power generation (including nuclear power), and uses of atom in medicine, agriculture, industry and environmental protection.

It is important to win back public confidence towards official State agencies which generate or transfer information. That is why certain NAEA activities are first of all aimed at improving relations between the Agency and the mass media, and changing the public image of the Agency to become free of the political element and authentic.

Below there are examples of recent information activities of the NAEA. Some of them may seem slightly "exotic", but their show the peculiarity of the Polish situation after the socio-political changes.

On the occasion of the fifth anniversary of the accident in the Ukraine, the NAEA announced a statement in which it admitted that in 1986 and later on there had been certain mistakes and cases of negligence and, in particular, that the censorship authorities had postponed the announcement of the accident, which had had some serious consequences (among others, as a result, the action of giving Lugol's solution to children had been delayed).

The detailed information on the course of events in Poland following the Chernobyl disaster and the consequences of the accident for Poland will be included in a special report prepared by a team of independent experts appointed by the President of the NAEA. The team has formerly prepared a report on the Zarnowiec nuclear power plant. The activity of the team, headed by dr A. Wierusz, has aroused broad interest among journalists, though statements presented by the team are not always in accordance with the opinion of the President of the NAEA. In such cases beside the views of dr Wierusz's team a separate position of the NAEA is presented.

Lately the NAEA, has, on its own initiative, appointed a commission to check for ionizing radiation the bunkers and other premises left by the Soviet Army. The results have been widely disseminated through the mass media.

Other activities, like medical examinations of former uranium miners carried out jointly with the Ministry of Health and the Ministry of Environmental Protection, or an initiative to prepare an atlas of cesium concentrations in mushrooms and forest vegetation in Poland have resulted in a slight change in the tone of publications on radiation protection, atomic energy and the role of the NAEA itself.

Journalists unfavourably biased against nuclear energy have been invited to co-operate in information activities. The NAEA has organized for them visits to nuclear power plants in Finland and the USSR. Those experts who in the past years excessively praised the advantages of reactors operating in Eastern and Central Europe are no longer favoured.

(The situation in Kozloduj and its echo in mass media again aroused some anxiety and fear of another nuclear accident. The dissemination of the MAEA experts' opinion on the condition of that plant, followed by the statements of the Western governments recognizing the necessity of providing Bulgaria with assistance, had, in turn, a soothing effect.)

Recently the NAEA has started to work on a project called *Development of a National Decision Support System for Nuclear Emergency*. The purpose of the project is to set up a national nuclear energy action support system that would be compatible with the system currently being developed in the CEC. It would help

- decision-makers by ensuring, following a nuclear accident, a rapid access to reliable information on the actual radiological situation, predicting its progression and providing ranking for different countermeasures in relation to the weather conditions and the resources and time available;
- to develop and improve emergency plans;
- to examine emergency preparedness of local authorities and organizations responsible for radiation protection on the national level;
- to make studies of emergency preparedness strategies compliant with the wholistic approach to the environment and health area risk management procedures.

As it has already been mentioned at the beginning in the event of a radiological hazard it is important how people behave. The information and educational activities should effect rationality of such behaviour.

What should also be noted is efforts aimed at establishing closer co-operation with environmentalist circles and with the Ministry of Environmental Protection, Natural Resources and Forestry. After the Vienna Conference on the Health Effects of the Chernobyl Accident, the NAEA Department of Training and Public Information organized a series of meetings to which journalists and ecologists were invited. In general, the press appreciated that initiative.

The mass media have taken a considerable interest in a pilot installation using electron beam technology for flue gases treatment. The process, using an electron beam for gas molecules excitation removes simultaneously both SO₂ and NO_x with high efficiency reaching 95% and 80% respectively.

This technology is especially interesting for Poland because our country is one of the leading emitters of sulphur dioxide and nitrogen oxides in Europe.

The above example of nuclear technology application to purify gases from coal fired boilers is used by us to prove that atoms or electrons may not necessarily be associated with destruction and danger or arouse fear but can serve both nature and man.

All those activities, though not directly related to nuclear energy, have a positive impact on its perception.

Another objective of the information and educational policy which has just been started is to make the general public aware, through possibly wide and systematic education, what the benefits and risks are involved in various forms of power generation. The educational programme is addressed both to the general public and to elites which mould the public opinion. The educational activities will take on different forms depending on their audiences.

In Poland doctors, priests, and, to a lesser extent, teachers enjoy high prestige in the society. And those professions will be invited to co-operate.

Poland has increasing political and economic contacts with the Commission of European Communities as well as with other organizations (or countries) in Europe and in the world. It may be expected that collaboration between Poland and its neighbours (including the newly re-born states in Eastern Europe) will also develop.

All this might provide good opportunities of benefiting from different national experiences and of co-ordinating different national educational and information programmes, thus reducing the costs of their implementation, which for Poland, under the current circumstances, is especially important. '

**Innovation Data Bases on Environmental
Protection in Atomic Power and Industry
of the USSR**

A. N. Pavlov
Atominform, Moscow

INNOVATION DATA BASES ON ENVIRONMENTAL PROTECTION IN ATOMIC
POWER AND INDUSTRY OF THE USSR

A.N. Pavlov, PhD (engineering), division head;
V.S. Romanov, PhD (physics and mathematics), deputy director
Central Research Institute of Management, Economics and
Information under the USSR Ministry of Atomic Power and
Industry (ATOMINFORM)

Availability of an efficient information system on innovations in the field of environmental protection is an important condition for solving many ecological problems.

Objectives of such a system are as follows:

- processing and storage of information on R/D, technologies, and equipment related to environmental protection;
- distribution of information on the most efficient innovations through a system of special publications;
- innovation data retrieval upon requests of organizations, firms and governmental bodies concerned.

One of the main lines of Atominform activities is a wide distribution in the Soviet Union and abroad of information on innovations: advanced ideas, R/D, technologies, materials produced by the enterprises of the USSR Ministry of Atomic Power and Industry. In the course of a wide-scale conversion of war production many developments and technologies are adopted to the application in civil branches of national economy. A high scientific and technological potential of nuclear industry is involved in the solution of problems within the framework of a spectrum of conversion programs, including issues of environmental protection.

Innovations generated within the scope of these programs in scientific centres and enterprises of the nuclear industry of the USSR are of direct interest to many firms and organizations in our country and abroad. Thus, such interest at the domestic market is warranted by ecological standards which the governmental and local authorities make more and more rigid, and by a wide public movement for environmental protection. Innovation data bases contain information on a wide range of developments, technologies, and special equipment used for solving ecological problems.

A number of sewage water purification technologies may be used as an illustration of the above-mentioned:

- photometric technique of AS and P assay in natural and sewage waters;
 - method of industrial sewage water purification from beryllium and their demineralization;
 - method of sewage water disposal;
- and developments related to the disposal of air contaminants, such as:

- fiber-optical filter for purifying flue gases produced in the process of incineration of organic coolant water-wet waste;
- equipment for purifying ventilation organic effluents;
- eddy cyclone for purifying process gases.

These developments are widely introduced at the Soviet enterprises.

Atominform processes tens of requests of different enterprises and renders services related to copying of scientific and technical reports and documentation; arrangement of expert consultations; and assistance in the introduction of innovations.

The innovation data bases contain information on the in-progress and completed R/D, proven technologies, materials and commercially manufactured products; they are continuously updated. The data bases are formed in the Russian and English languages and are proposed for exchange with organizations concerned in INIS and DBASE-3+ formats. At present, the volume of the data bases is about 10,000 records, including approximately 1000 records directly related to innovations in the field of environmental protection. Record structure includes the following main fields: name of innovation; short abstract with performance description; name of organization-author of innovation; availability of engineering specifications (scientific and technical report); availability of finished products for selling.

Atominform exchanges data bases (or their fragments) with interested foreign and Soviet partners, executes retrieval upon user's request, performs intermediary functions related to the establishment of contacts with innovation developer.

Maintenance and updating of innovation data bases allow to solve information problems and to coordinate and supervise the progress in R/D in a given field:

- to define the subject of similar 'allied' research;
- to prepare proposals on cooperation of enterprises and scientific establishments;
- to advertise and promote the most efficient adopted and mastered developments.

One of the channels for advertising innovations is a new Atominform's periodical 'Collection of Abstracts on Innovations within the scope of Conversion Programs of the USSR Minatomenergoprom', the first two issues of which will be published this year. The publications are prepared in Russian and English and are distributed on subscription which is executed by Atominform in the USSR and FAXON (USA) company abroad.

In addition, Atominform renders marketing services in view of promoting the introduction of innovations at the domestic market in the USSR which comprise:

- prompt direct mail advertising of innovations (DIRECT MAIL);
- analysis of potential markets using address data bases.

The address data bases of Atominform contain about 140,000 records of addresses, names, lines of activity and administration of enterprises, firms, joint ventures, cooperatives, and other organizations in the USSR.

The address data bases allow to render services related to the determination of potential innovation markets, establishment of 'user-supplier' contacts, preparation of proposals on the organization of cooperation and joint activities of enterprises.

The availability of innovation data bases, specialized periodicals, various marketing services enable Atominform to carry out a wide-scale dissemination of information on state-of-the-art developments, technologies, equipment which can ensure an efficient solution of many problems of environmental protection.

Power Reactor Information System (PRIS)

R. Spiegelberg

International Atomic Energy Agency (IAEA), Vienna

POWER REACTOR INFORMATION SYSTEM (PRIS)

1. WHAT IS PRIS

Since the very beginning of commercial operation of nuclear power plants, the nuclear power industry world-wide has accumulated more than 5,622 reactor years of experience. As of December 1990, 423 nuclear power plants were operating in 24 countries, with a total electricity generating capacity of 325,873 MW(e). A further 83 reactors were being built in 18 countries.

The IAEA has been collecting Operating Experience data for Nuclear Power Plants of the IAEA Member States since 1970. In order to facilitate an analysis of nuclear power plant performance as well as to produce relevant publications, all previously collected data supplied from the questionnaires were computerized in 1980 and the Power Reactor Information System was implemented.

Various analyses are carried out within the IAEA and also on request by Member States.

The PRIS data is made available to the Agency by circulating questionnaires to the Member States through designated national correspondents and the Statistical Office of the Commission of the European Communities(CEC) on an annual basis. Two different questionnaires are used: one for basic information, i.e., general and design information on a particular reactor, and the other is an annual questionnaire covering the operating experience with a particular power reactor during that year.

PRIS currently contains production records for the years up to and including 1990 and about 98% of the reactors-years operating experience in the world is contained in PRIS.

In principle, PRIS covers:

- general and basic design information on nuclear power reactors,
- operating experience data with nuclear power plants.

The three main parts of PRIS are:

a) File PRIS-REACTOR

This file contains the following information on nuclear power plants:

- Identification of the reactor
- Type and category
- Status (in operation, under construction or shutdown)
- Dates in the life of the reactor (start of construction, criticality date, connection to grid, start of commercial operation, shutdown)
- Power output of the reactor
- Contractors, suppliers, operators and owners
- Core characteristics and plant system
- Location of the reactor

b) File PRIS-PRODUCTION

This file contains about 4,500 records - several records for one particular reactor and one record for each year in which the reactor produced energy or at least, has been connected to the grid. The

information comes from the IAEA Annual Operating Experience Questionnaire. Within the records there are data items for each month of the year and the whole year. The following information is contained in the records:

- Identification of the reactor, reactor category
- Year and reactor age
- Energy production data (total net energy produced during the year, energy lost during the year due to plant unavailability, further subdivided into energy loss due to planned and unplanned unavailability, total number of hours during which the reactor operated with breakers closed to the station bus, etc.). Along with the yearly values, also monthly values are recorded for these performance data
- Performance factors as the ratios. Currently, seven of these factors are used (operating factor, load factor, four unavailability factors and availability factor)
- Summary of operation with relevant information.

c) File PRIS-OUTAGES

At present this file contains more than 36,000 records of full and partial unavailabilities. By definition, a significant outage is a power reduction resulting in a loss of energy corresponding to at least 10 hours continuous operation at maximum reactor capacity. The following individual fields are recorded:

- Identification of the reactor, reactor category
- Years and reactor age
- Identification of reactor outages. The user can easily find out the number of outages of a particular reactor in a given year.
- Classification and description of outages from point of view of planned or unplanned outages and causes of the outages.
- Basic data on outages (number, class, hours of duration, energy loss).

Each unavailability is codified as to the cause and systems involved and whether it was planned or unplanned, full or partial. There is also a brief description in the record.

2. PRIS PUBLICATIONS

Operating experience data collecting by the IAEA are used to produce annually the following publications:

- Operating Experience with Nuclear Power Stations in Member States (since 1971).
- Nuclear Power Reactors in the World (Reference Data Series No. 2) (since 1981).

3. PRIS SERVICES

A. PRIS ON-LINE

In 1989 the PRIS database was made available on-line for direct access via the international public data networks or public switched telephone system. Up to now, PRIS was kept operating free of charge. Currently, 55 users in 25 Member States and 3 international organizations (WANO, WISE and OECD) have on-line access.

More information on PRIS on-line is given in Attachment 1.

B. MicroPRIS

In parallel with the on-line access system, the Agency has offered the MicroPRIS to the Member States, free of charge, since January 1991. This is a personal computer (PC) version of PRIS data available on diskette in a form readily accessible by standard, commercially available PC packages.

MicroPRIS contains a subset of the full PRIS database. Calculated fields, monthly production data and some of the design parameters of nuclear power plants are not contained in MicroPRIS.

The product is a result of a project that started in the middle of 1989 on the basis of a research contract between the Agency and the Nuclear Information Centre of the Czechoslovak Atomic Energy Commission. Currently, 96 subscribers in 38 Member States and 3 international organizations (WANO, WISE and OECD) have the MicroPRIS package.

More information on MicroPRIS is provided in Attachment 2.

C. AD-HOC REQUESTS

In-house: PRIS is extensively used in the IAEA. It provides input for various IAEA publications and papers.

IAEA Member States: Up to now we have been satisfying requests from Member States ranging from simple query to complicated analysis. These requests were answered by sending data sets as computers printouts on magnetic tape or diskettes.

4. HOW TO ORDER PRIS SERVICES

A. PRIS On-line

IAEA PRIS on-line access has been granted to the Member States free of charge until further notice. To get the PRIS on-line access a Subscription form must be completed and send to the IAEA. The access authorization is accomplished through the issuance of a password by the IAEA to its Member States and International Member Organizations.

B. MicroPRIS

MicroPRIS is granted to any Member States or International Member Organization free of charge until further notice.

To order the MicroPRIS product a Subscription and License Agreement must be completed and returned to the IAEA.

5. Responsibility for the Databank

The PRIS databank is maintained by the

Nuclear Power Engineering Section
Division of Nuclear Power
IAEA.

Further queries regarding the databank should be addressed to Ms. R. Spiegelberg, Telephone:(1) 2360-2788 or (1) 2360-2789, Fax: 43 1 234564, Telex: 1-12645.

RT : D
AC : WRENDA
NA : World Request List for Nuclear Data
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. J.J. Schmidt, Head, Nuclear Data Section
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
EM : EARN/BITNET, NMAILAEA1
STA : Operational
SY : 1970
PR : WRENDA, 1987/1988
AV : UN system organizations; external users
CT : FISSIONABLE MATERIALS; NUCLEAR MATERIALS MANAGEMENT;
NUCLEAR REACTORS; SAFEGUARDS; THERMONUCLEAR REACTORS
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Bibliographic; referral
LOC : IAEA
TS : 1970 - present
TOT : 1,200
FR : Every 4 years
AY : 100 - 200
LA : English
DM : Magnetic tape; printout
OP : Nuclear Data Section

RT : D
AC : EXFOR
NA : International Data Base of Numerical Nuclear Reaction
Data
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. H.D. Lemmel, Nuclear Data Section
AD : IAEA
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
STA : Operational
SY : 1970
AV : UN system organizations; external users
CT : CHARGED PARTICLES; HEAVY ION REACTIONS; NEUTRONS;
PHOTONUCLEAR REACTIONS
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Bibliographic; numeric
LOC : IAEA
TS : 1935 - present
TOT : 4.3 million records
FR : Continuously
AY : 200,000
LA : English
DM : Magnetic tape; printout
OP : Nuclear Data Section

RT : D
AC : ENSDF
NA : Evaluated Nuclear Structure Data File
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. H.D. Lemmel, Nuclear Data Section
AD : IAEA
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
STA : Operational
SY : 1977
PR : Nuclear data sheets journal
AV : UN system organizations; external users
CT : NUCLEAR DECAY; NUCLEAR STRUCTURE
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Numeric
LOC : IAEA
TS : 1950 - present
TOT : 631,400
FR : Quarterly
AY : 40,000 data records
LA : English
DM : Magnetic tape; printout
OP : Nuclear Data Section

RT : D
NA : Collection of International Nuclear Data Files
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. H.D. Lemmel, Nuclear Data Section
AD : IAEA
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
STA : Operational
SY : 1965
PR : Reports
AV : UN system organizations; external users
CT : NUCLEAR REACTIONS
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Bibliographic; numeric
LOC : IAEA
TS : 1950 - present
TOT : 5 million records
FR : Irregularly
AY : 300,000
LA : English
OP : Nuclear Data Section

RT : D
NA : Bibliographic Data Base for Atomic and Molecular Data
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. R. Janev, Nuclear Data Section
AD : IAEA
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
STA : Operational
SY : 1977
PR : CIAMDA: index to the literature on atomic and molecular
collision data;
International bulletin on atomic and molecular data for
fusion
AV : UN system organizations; external users
CT : ATOMIC COLLISIONS; ATOMIC STRUCTURE
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Bibliographic; referral
LOC : IAEA
TS : 1950 - present
TOT : 23,000
FR : Quarterly
AY : 2,000 data records
LA : English
DM : Magnetic tape; printout
OP : Nuclear Data Section

RT : D
NA : Isotope Hydrology Database
ORG : IAEA
DEP : Department of Research and Isotopes, Division of Physical
and Chemical Sciences
CP : Mr. Y. Yurtsever, First Officer, Section of Isotopes
AD : Division of Physical and Chemical Sciences
IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM GENEVA
TX : 1 12645
TE : + 43 222/2360 1232
TF : + 43 222/23 45 64
STA : Operational
SY : 1960
PR : Environmental isotope data - world survey of isotope
concentration in precipitation (Technical Report Series)
AV : UN system organizations; external users
CT : GEOCHEMISTRY; HYDROLOGY; ISOTOPES; OCEANOGRAPHY
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Numeric
LOC : IAEA
TS : 1953 - present
TOT : 2 million
FR : Biannually
AY : 16,000
LA : English
DM : Diskette; magnetic tape; printout
OP : Nuclear Data Section

RT : D
AC : RRDB
NA : Nuclear Research Reactors Data Base
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences. Physics Section
CP : Mr. R. Muranaka, Physics Section
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
EM : EARN/BITNET, RIMAEA1
STA : Operational
SY : 1985
PR : IAEA data base system for nuclear research reactors
(RRDB);
Nuclear research reactors in the world (Reference Data
Series No. 3);
Research reactor directory, status and trend
AV : UN system organizations; external users
CT : NUCLEAR REACTORS; RESEARCH
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Numeric
LOC : IAEA
TS : 1971 - present
TOT : 532 reactors; 600 address records
FR : Continuously
AY : 600 reactor records
LA : English
DM : COM; diskette; magnetic tape; printout
OP : International Nuclear Information System

RT : D
 AC : IAEA-IRS
 NA : Incident Reporting System Data Base
 ORG : IAEA
 DEP : Department of Nuclear Energy and Safety. Division of
 Nuclear Safety
 DAC : NENS
 CP : Mr. V. Tolstykh, Senior Officer, Safety Assessment
 Section
 AD : Department of Nuclear Energy and Safety
 IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645
 TE : + 43 222/23600
 TF : + 43 222/23 45 64
 STA : Operational
 SY : 1989
 IT : In-house (list of preferred terms and special coding
 scheme)
 PR : International reviews and analysis reports;
 original reports on unusual events
 AV : UN system organizations;
 external users with restrictions: nuclear community
 through national co-ordinators
 CT : NUCLEAR ACCIDENTS; NUCLEAR POWER PLANTS; NUCLEAR SAFETY
 GC : Worldwide
 BIS : 16 SCIENCE AND TECHNOLOGY
 TY : Factual; full text; special coding scheme
 LOC : IAEA/Department of Nuclear Energy and Safety
 TS : 1982 - present
 TOT : 800
 FR : Continuously
 AY : 150
 LA : English
 DM : Diskette; printout
 OP : Incident Reporting System

RT : D
AC : EEDB
NA : Energy and Economic Data Bank
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Nuclear Power
DAC : NENP
CP : Mr. Ivo Novak, Economic Data Analysis, Planning and
Economic Studies Section
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2795
TF : + 43 222/23 45 64
STA : Operational
SY : 1978
AV : Agency staff
CT : ELECTRICITY; ENERGY DEMAND; ENERGY ECONOMICS;
NUCLEAR ENERGY
BIS : 03 NATURAL RESOURCES AND THE ENVIRONMENT
TY : Numeric
LOC : IAEA
TS : 1950 - present
TOT : 36,854
FR : Annually
AY : 500
LA : English
OP : Quantitative Restrictions Inventory System

RT : D
NA : ENEC - Summary
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Nuclear Power
DAC : NENP
CP : Mr. Ivo Novak, Economic Data Analysis, Planning and
Economic Studies Section
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2795
TF : + 43 222/23 45 64
STA : Operational
PR : Energy, electricity and nuclear power estimates for the
period up to 2005 (Reference Data Series No. 1);
Country tables
AV : UN system organizations; external users
CT : ELECTRICITY; ENERGY CONSUMPTION; NUCLEAR ENERGY
GC : Worldwide
BIS : 03 NATURAL RESOURCES AND THE ENVIRONMENT
TY : Numeric
LOC : IAEA
TS : 1950 - present
TOT : 38,000
FR : Annually
AY : 500
LA : English
DM : Diskette; magnetic tape; printout
OP : Quantitative Restrictions Inventory System

RT : S
AC : IAEA-IRS
NA : Incident Reporting System
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Nuclear Safety
DAC : NENS
CP : Mr. V. Tolstykh, Senior Officer, Safety Assessment
Section
AD : Department of Nuclear Energy and Safety
IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/23 45 64
STA : Operational
SY : 1985
IT : In-house (list of preferred terms and special coding
scheme)
PR : International reviews and analysis reports;
original reports on unusual events; reports on meetings;
reports of national co-ordinators
AV : UN system organizations;
external users with restrictions: nuclear community
through national co-ordinators
CT : NUCLEAR ACCIDENTS; NUCLEAR POWER PLANTS; NUCLEAR SAFETY;
WASTE MANAGEMENT
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
IST : Database producer; information centre; information
network; information system
STF : 3
SE : Analysis of unusual events by international experts;
data collection and analysis; document delivery;
letters, phone calls in answer to requests;
provision of data in machine-readable form;
searching of internal and external databases;
selective dissemination of information
DBM : Incident Reporting System Data Base

RT : S
 AC : NFCIS
 NA : Nuclear Fuel Cycle Information System
 ORG : IAEA
 DEP : Department of Nuclear Energy and Safety. Division of
 Nuclear Fuel Cycle
 CP : Mr. Maksimilijan Pecnik, Technical Officer, Division of
 Nuclear Fuel Cycle
 AD : IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645
 TE : + 43 222/2360 2758
 TF : + 43 222/23 45 64
 STA : Operational
 SY : 1986
 PR : The nuclear fuel cycle information system
 (IAEA-TECDOC-408);
 The nuclear fuel cycle information system: a directory
 of nuclear fuel cycle facilities, 1988
 AV : UN system organizations
 CT : NUCLEAR FUEL CYCLE; NUCLEAR FUELS
 GC : Worldwide
 BIS : 03 NATURAL RESOURCES AND THE ENVIRONMENT
 IST : Information system
 SE : Data collection and analysis;
 letters, phone calls in answer to requests;
 searching of databases;
 selective dissemination of information
 DBM : Nuclear Fuel Cycle Information System (Database)

RT : S
NA : Vienna International Centre Library
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Scientific and Technical Information
DAC : NE
CP : Dr. Harriet Zais Gabbert, Head, VIC Library
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2630
TF : + 43 222/23 45 64
STA : Operational
SY : 1979
IT : Library of Congress Subject Headings; UNBIS Thesaurus
PR : Current awareness bulletin; Film catalogue;
Library accession list; VIC library;
VIC library serial titles
AV : UN system organizations; external users with restrictions
CT : AGRICULTURE; COMPUTER SCIENCE; ECONOMICS; ENGINEERING;
ENVIRONMENT; INFORMATION SCIENCES; LAW; LIFE SCIENCES;
MANAGEMENT; NATURAL SCIENCES; NUCLEAR ENGINEERING;
SOCIAL SCIENCES; TECHNOLOGY; TRADE
GC : Worldwide
BIS : 00 GENERAL
IST : Library
STF : 30
SE : Document delivery;
letters, phone calls in answer to requests;
loans to UN agencies; loans within agency;
preparation of bibliographies;
searching of internal and external databases;
selective dissemination of information; training
DBM : Library Conferences Database;
Library Information On Line; Library Serials Database

RT : S
 AC : INIS
 NA : International Nuclear Information System
 ORG : IAEA
 DEP : Department of Nuclear Energy and Safety. Division of
 Scientific and Technical Information
 DAC : NE
 CP : Mr. A.V. Filippov, Head, INIS Section
 AD : Division of Scientific and Technical Information
 IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645 atom a
 TE : + 43 222/23600
 TF : + 43 222/23 45 64
 EM : EARN/BITNET, NIUWIIAE21; NIUAEA1
 STA : Operational
 SY : 1970
 IT : INIS Reference Series including: INIS Manual for
 Indexing; INIS Subject Categories and Scope Descriptions;
 INIS Thesaurus
 PR : Cumulative indexes to INIS ATOMINDEX;
 INIS ATOMINDEX, (English with abstracts in French,
 Russian and Spanish); INIS input training kit;
 INIS newsletter;
 INIS non-conventional literature on microfiche
 (including technical reports, patents, conference
 reports); INIS reference series; INIS services;
 Presenting INIS
 AV : UN system organizations; external users
 CT : ISOTOPES; LIFE SCIENCES; NUCLEAR ENERGY;
 NUCLEAR ENGINEERING; NUCLEAR LAW; NUCLEAR PHYSICS;
 NUCLEAR REACTORS; PHYSICS; RADIOACTIVE MATERIALS;
 RADIOACTIVE POLLUTION; RADIOBIOLOGY; RADIOCHEMISTRY;
 SAFEGUARDS
 GC : Worldwide
 BIS : 16 SCIENCE AND TECHNOLOGY
 IST : Abstracting/indexing service; documentation centre
 STF : More than 10
 SE : Document delivery; online ordering of microfiche;
 provision of data in machine-readable form since 1970;
 provision of online services since 1976
 DBM : INIS Database

RT : S
AC : ICTP
NA : International Centre for Theoretical Physics Library
ORG : IAEA
DEP : Department of Research and Isotopes. International Centre
for Theoretical Physics
DAC : IAEA/ICTP
CP : Ms. M. Zingarelli, Head, Library
AD : International Centre for Theoretical Physics
Strada Costiera 11
PO Box 586
34100 TRIESTE
CY : Italy
CA : CENTRATOM
TX : 460392 ictp i
TE : + 39 40/22401
TF : + 39 40/224163
STA : Operational
SY : 1964
IT : Universal Decimal Classification (UDC)
PR : Monthly acquisition list; Periodicals list
AV : UN system organizations
CT : ASTRONOMY; BIOPHYSICS; CHEMISTRY; ENERGY; ENVIRONMENT;
GEOPHYSICS; MATHEMATICS; NUCLEAR ENERGY; PHYSICS;
TECHNOLOGY
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
IST : Clearing-house/referral centre; library
STF : 1-4
SE : Document delivery; loans to UN agencies;
loans within agency

RT : D
NA : Database of Measurements Made after the Chernobyl
Accident
ORG : IAEA
DEP : Department of Nuclear Energy and Safety
CP : Ms. Mona Dreicer, Department of Nuclear Energy and
Safety
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2710
TF : + 43 222/23 45 64
STA : Development stage
AV : UN system organizations; external users
CT : ENVIRONMENT; ENVIRONMENTAL EFFECTS; NUCLEAR ACCIDENTS;
RADIOACTIVE MATERIALS
GC : Worldwide
BIS : 03 NATURAL RESOURCES AND THE ENVIRONMENT
TY : Numeric
LOC : IAEA
DM : Diskette; magnetic tape; printout
OP : Incident Reporting System

RT : D
 NA : INIS Database
 ORG : IAEA
 DEP : Department of Nuclear Energy and Safety. Division of
 Scientific and Technical Information
 DAC : NE
 CP : Mr. A.V. Filippov, Head, INIS Section
 AD : Division of Scientific and Technical Information
 IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645 atom a
 TE : + 43 222/23600
 TF : + 43 222/23 45 64
 EM : EARN/BITNET, NIUWIIAE21; NIUAEA1
 STA : Operational
 SY : 1970
 IT : INIS Reference Series including: INIS Manual for
 Indexing; INIS Subject Categories and Scope Description;
 INIS Thesaurus
 PR : INIS ATOMINDEX
 AV : UN system organizations;
 external users (for CD-ROM, external users via national
 INIS liaison officers)
 CT : ISOTOPES; LIFE SCIENCES; NUCLEAR ENERGY;
 NUCLEAR ENGINEERING; NUCLEAR LAW; NUCLEAR PHYSICS;
 NUCLEAR REACTORS; RADIOACTIVE MATERIALS;
 RADIOACTIVE POLLUTION; RADIOBIOLOGY; RADIOCHEMISTRY;
 SAFEGUARDS
 GC : Worldwide
 BIS : 16 SCIENCE AND TECHNOLOGY
 TY : Bibliographic
 LOC : IAEA
 TS : 1970 - present; 1976 - present for CD-ROM and online
 versions
 TOT : More than 1.3 million items; more than 1 million for
 CD-ROM and online versions
 FR : Bimonthly; quarterly for CD-ROM
 AY : 90,000
 LA : English;
 (French, Russian, Spanish abstracts, where provided)
 DM : CD-ROM; COM; magnetic tape; online; printout
 HOST : ANSTO-INIS; BELINDIS; CAN/OLE; IAEA; ICSTI; JICST;
 STN International; DIALOG (file: DOE ENERGY)
 OP : International Nuclear Information System

RT : D
AC : LISA
NA : Library Serials Database
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Scientific and Technical Information
DAC : NE
CP : Ms. Khin Thet Htar, Head, Technical Services Unit
AD : Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2624
TF : + 43 222/23 45 64
STA : Operational
SY : 1979
IT : Library of Congress Subject Headings; UNBIS Thesaurus
PR : VIC library serial titles
AV : UN system organizations; external users with restrictions
CT : AGRICULTURE; COMPUTER SCIENCE; ECONOMICS; ENGINEERING;
ENVIRONMENT; INFORMATION SCIENCES; LAW; LIFE SCIENCES;
MANAGEMENT; NATURAL SCIENCES; NUCLEAR ENGINEERING;
SERIALS; SOCIAL SCIENCES; TECHNOLOGY; TRADE
GC : Worldwide
BIS : 00 GENERAL
TY : Bibliographic
LOC : IAEA
TS : 1927 - present
TOT : 7,600
FR : Daily
AY : 300
LA : No language restrictions
DM : Printout
OP : Vienna International Centre Library

RT : D
AC : LION
NA : Library Information On Line
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Scientific and Technical Information
DAC : NE
CP : Ms. Khin Thet Htar, Head, Technical Services
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2624
TF : + 43 222/23 45 64
STA : Operational
SY : 1969
IT : Library of Congress Subject Headings; UNBIS Thesaurus
PR : Library accession list; VIC library film catalogue
AV : UN system organizations; external users with restrictions
CT : AGRICULTURE; COMPUTER SCIENCE; ECONOMICS; ENGINEERING;
ENVIRONMENT; INFORMATION SCIENCES; LIFE SCIENCES;
MANAGEMENT; NATURAL SCIENCES; NUCLEAR ENGINEERING;
SOCIAL SCIENCES; TECHNOLOGY; TRADE
GC : Worldwide
BIS : 00 GENERAL
TY : Bibliographic
LOC : IAEA
TS : 1969 - present
TOT : 87,000
FR : Daily
AY : 5,000
LA : No language restrictions
DM : COM; online; printout
HOST : IAEA
OP : Vienna International Centre Library

RT : D
AC : LICO
NA : Library Conferences Database
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Scientific and Technical Information
DAC : NE
CP : Ms. Khin Thet Htar, Head, Technical Services Unit
AD : VIC Library
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2624
TF : + 43 222/23 45 64
STA : Operational
SY : 1980
AV : UN system organizations; external users with restrictions
CT : AGRICULTURE; COMPUTER SCIENCE; ECONOMICS; ENGINEERING;
ENVIRONMENT; INFORMATION SCIENCES; LAW; LIFE SCIENCES;
MANAGEMENT; NATURAL SCIENCES; NUCLEAR ENGINEERING;
SOCIAL SCIENCES; TECHNOLOGY; TRADE
GC : Worldwide
BIS : 00 GENERAL
TY : Bibliographic
LOC : IAEA
TS : 1939 - present
TOT : 12,000
FR : Daily
AY : 120
LA : No language restrictions
DM : Online; printout
HOST : IAEA
OP : Vienna International Centre Library

RT : D
AC : NFCIS
NA : Nuclear Fuel Cycle Information System (Database)
ORG : IAEA
DEP : Department of Nuclear Energy and Safety. Division of
Nuclear Fuel Cycle
CP : Mr. Maksimilijan Pecnik, Technical Officer, Division of
Nuclear Fuel Cycle
AD : IAEA
Vienna International Centre
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/2360 2758
TF : + 43 222/23 45 64
STA : Operational
SY : 1985
PR : The nuclear fuel cycle information system
(IAEA-TECDOC-408);
The nuclear fuel cycle information system: a directory
of nuclear fuel cycle facilities
AV : UN system organizations; external users
CT : NUCLEAR FUEL CYCLE; NUCLEAR FUELS; URANIUM
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Factual; numeric; referral
LOC : IAEA
TS : 1950 - present
TOT : 500
FR : Continuously
LA : English
OP : Nuclear Fuel Cycle Information System

RT : D
 AC : PRIS
 NA : IAEA Power Reactor Information System (Database)
 ORG : IAEA
 DEP : Department of Nuclear Energy and Safety. Division of
 Nuclear Power
 DAC : NENP
 CP : Mr.Ivo Novak, Economic Data Analysis, Planning and
 Studies Section
 AD : IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645
 TE : + 43 222/2360 2795
 TF : + 43 222/23 45 64
 STA : Operational
 SY : 1981
 PR : Operating experience with nuclear power stations in
 member states;
 Nuclear power stations in the world (Reference Data
 Series No. 2)
 AV : UN system organizations; external users with restrictions
 CT : NUCLEAR ENERGY; NUCLEAR REACTORS
 GC : Worldwide (IAEA Member States)
 BIS : 16 SCIENCE AND TECHNOLOGY
 TY : Numeric
 LOC : IAEA
 TS : 1960 - present
 TOT : 5,000 reactor years; 30,000 outages; 700 reactors
 FR : Annually
 AY : 400 reactor years; 2,500 outage records
 LA : English
 DM : Magnetic tape; online; printout
 HOST : IAEA
 OP : Quantitative Restrictions Inventory System

RT : D
NA : Numerical Data Base of Atomic Collision Data
ORG : IAEA
DEP : Department of Research and Isotopes. Division of Physical
and Chemical Sciences
CP : Mr. R. Janev, Nuclear Data Section
AD : IAEA
Wagramerstrasse 5
PO Box 100
1400 VIENNA
CY : Austria
CA : INATOM VIENNA
TX : 1 12645
TE : + 43 222/23600
TF : + 43 222/ 23 45 64
STA : Operational
SY : 1987
PR : Handbooks
CT : ATOMIC COLLISIONS
GC : Worldwide
BIS : 16 SCIENCE AND TECHNOLOGY
TY : Numeric
LOC : IAEA
TS : 1950 - present
TOT : 10,000
FR : Continuously
AY : 1,500
LA : English
DM : Magnetic tape; printout
OP : Nuclear Data Section

RT : S
 NA : Nuclear Data Section
 ORG : IAEA
 DEP : Department of Research and Isotopes. Division of Physical
 and Chemical Sciences
 CP : Mr. J.J. Schmidt, Head, Nuclear Data Section
 AD : IAEA
 Vienna International Centre
 Wagramerstrasse 5
 PO Box 100
 1400 VIENNA
 CY : Austria
 CA : INATOM VIENNA
 TX : 1 12645
 TE : + 43 222/23600
 TF : + 43 222/23 45 64
 EM : EARN/BITNET, NMAILAEA1
 STA : Operational
 SY : 1964
 IT : In-house (dictionaries for nuclear and atomic data
 nomenclature and terminology)
 PR : CIAMDA: index to the literature on atomic and molecular
 collision data; CINDA: index to microscopic neutron data;
 Decay of the transactinium nuclides;
 Handbook on nuclear activation data; IAEA-index-series;
 International bulletin on atomic and molecular data for
 fusion; Nuclear data newsletter;
 Nuclear data standards for nuclear measurements;
 Progress in fission product nuclear data;
 Technical reports on nuclear and atomic data (INDC
 Report Series);
 World request list for nuclear data (WRENDA);
 Documentation of data files;
 proceedings of meetings on nuclear and atomic data
 topics
 AV : UN system organizations; external users
 CT : CHARGED PARTICLES; NEUTRONS; NUCLEAR DECAY;
 NUCLEAR FUSION; NUCLEAR REACTIONS
 GC : Worldwide
 BIS : 16 SCIENCE AND TECHNOLOGY
 STF : More than 20
 SE : Data collection and analysis; document delivery;
 letters, phone calls in answer to requests;
 loans to external agencies; loans to UN agencies;
 loans within agency; preparation of bibliographies;
 provision of data in machine-readable form;
 searching of external databases;
 selective dissemination of information
 DBM : Bibliographic Data Base for Atomic and Molecular Data;
 Collection of International Nuclear Data Files;
 Computerized Index to Literature and Computer Files of

Microscopic Neutron Reaction Data;
Evaluated Nuclear Structure Data File;
International Data Base of Numerical Nuclear Reaction
Data; Numerical Data Base of Atomic Collision Data;
World Request List for Nuclear Data



PRIS Database Online at IAEA

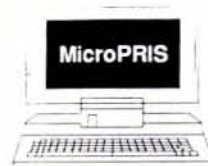
Fact Sheet (October 1991)

| | |
|----------------------------|--|
| What is PRIS? | The Power Reactor Information System , the IAEA's collection of operating experience data for nuclear power plants since 1970 |
| Contributors to PRIS | 25 countries comprise the current PRIS membership |
| Subject scope | Worldwide coverage of general and design information on power reactors in operation, under construction, planned or shutdown, and data on operating experience with nuclear power plants in IAEA Member States |
| Contents of files | <ul style="list-style-type: none"> • Reactor status, name, location, type, supplier, turbine generator supplier, plant owner and operator, thermal power, gross and net electrical power, date of construction commencement, first criticality, first synchronization to grid, commercial operation, shutdown, and data on reactor core characteristics and plant systems; • Energy produced, planned and unplanned energy losses, date of reactor connection to grid, operation and energy availability factors, and energy unavailability factors due to planned and unplanned reasons; • Information on significant outages/unavailabilities: starting date of outage, type of outage (planned or unplanned, full or partial), cause of outage, plant systems affected, duration of outage, energy loss and a short description of the outage. |
| Availability to the public | PRIS may be accessed on the IAEA computer by individuals in PRIS Member States. Please contact the IAEA for details. |
| Database producer | International Atomic Energy Agency (IAEA) P.O. Box 100, A-1400 Vienna, Austria Telephone (1) 2360, Telex 1-12645, Facsimile 43 1 234564 Electronic mail via EARN/BITNET |
| Online file name | PRIS |
| Type of database | Factual |
| Language of database | English |
| Time span hosted | 1970 to the present |
| Update frequency | Annual |
| Online service | Connect time for interactive searching |
| Operating hours | Central European Time (CET): <ul style="list-style-type: none"> • 07:00-23:30 Monday, Wednesday, Friday • 07:00-18:30 Tuesday, Thursday Not available on official holidays of the IAEA |
| Host software | ADABAS V4, NATURAL V2.1 (product of SOFTWARE AG) |

PRIS Database Online at IAEA

page 2

| | |
|----------------------------------|--|
| User aids | <ul style="list-style-type: none"> • IAEA-TECDOC-507: Power Reactor Information System (PRIS) Reference and On-line Access Manual, Vienna, 1989 • NATURAL Programmer's Guide, Version 2 • NATURAL Reference Manual, Version 2 • Using NATURAL to Access PRIS, Vienna, 1989 |
| User hardware | PC with asynchronous communications card or an X.25 (packet-switching) 3270 emulation card, telephone modem |
| User software | Asynchronous communication software to emulate a TTY-compatible terminal (line mode), or full-screen 3270 emulation software for X.25 (packet-switching) communication |
| Communication parameters | 300 baud, half duplex, even parity (applies to IAEA host, but users should set their parameters to those of the packet-switching networks, where applicable) |
| Dial-up to IAEA computer | Within Austria: 0043 222 235576. Outside Austria: 0043 1 235576. (TTY emulation.) |
| Telecommunication networks | Public telephone networks, national and international data packet-switching networks |
| IAEA Network User Address (NUA) | Within Austria: 23226221047 for line mode (TTY emulation) and full-screen mode (3270 emulation) Outside Austria: 023226221047 for line mode (TTY emulation) |
| Database charge | No database charge, until further notice |
| Other PRIS products and services | <ul style="list-style-type: none"> • Ad-hoc retrieval service from the full PRIS database by IAEA staff • PRIS database on PC diskette — MicroPRIS • IAEA publications, produced annually from the full PRIS database: <ul style="list-style-type: none"> • Operating Experience with Nuclear Power Stations in Member States • Nuclear Power Reactors in the World, Reference Data Series No. 2 |
| Contacts at producer | <ol style="list-style-type: none"> 1. Ms. R. Spiegelberg, Nuclear Power Engineering Section, IAEA Telephone (1) 2360 2788 or 2360 2789. EARN/BITNET ID NES@IAEA1 2. Mr. M. Raatz, Nuclear Power Engineering Section, IAEA Telephone (1) 2360 2852. EARN/BITNET ID XIM@IAEA1 3. Mr. F. Huell, Services and Resource Management Section, IAEA Telephone (1) 2360 2928 or 2360 2961. EARN/BITNET ID X03@IAEA1 |



MicroPRIS — PRIS Database on PC Diskette

Fact Sheet (October 1991)

| | |
|-------------------------------|---|
| What is PRIS? | The Power Reactor Information System , the IAEA's collection of operating experience data for nuclear power plants since 1970 |
| Contributors to PRIS | 25 countries comprise the current PRIS membership |
| Subject scope | Worldwide coverage of general information on power reactors in operation, under construction, and shutdown, and data on operating experience with nuclear power plants in IAEA Member States |
| Description | MicroPRIS consists of a set of PC diskettes containing a subset of the full PRIS database (only calculated fields, monthly production data and some of the design parameters of nuclear power plants are not contained in MicroPRIS), installation program, selection and conversion program to enable the selection of all or part of the data and its conversion into either a spreadsheet (Lotus 1-2-3) format or a standard PC database (dBase III+) format, and a user's guide |
| Availability to the public | MicroPRIS is available to individuals in PRIS Member States. Please contact the IAEA for details. |
| Producer and copyright holder | International Atomic Energy Agency (IAEA) P.O. Box 100, A-1400 Vienna, Austria Telephone (1) 2360. Telex 1-12645. Facsimile 43 1 234564 Electronic mail via EARN/BITNET |
| Type of database | Factual |
| Language of database | English |
| Time span | 1970 to the present |
| Update frequency | Annual |
| User aid | MicroPRIS User's Guide , Vienna, 1991 |
| User hardware | <ul style="list-style-type: none"> • IBM PC-XT or AT or IBM PS/2 or compatible • Hard disk with at least 5MB free space • One 3.5" low density (720kB) or 5.25" high density (1.2MB) diskette drive |
| User software | MS-DOS Version 3.0 or higher |
| Price | Free of charge until further notice |
| Special condition | Superseded diskettes must be returned to IAEA within 30 days after receipt of new ones |

MicroPRIS — PRIS Database on PC Diskette**page 2**

| | |
|----------------------------------|---|
| Other PRIS products and services | <ul style="list-style-type: none"> • Connect time for interactive searching in the full PRIS database online at IAEA • Ad-hoc retrieval service from the full PRIS database by IAEA staff • IAEA publications, produced annually from full PRIS database: <ul style="list-style-type: none"> • Operating Experience with Nuclear Power Stations in Member States • Nuclear Power Reactors in the World, Reference Data Series No. 2 |
| Contacts at producer | <ol style="list-style-type: none"> 1. Ms. R. Spiegelberg, Nuclear Power Engineering Section, IAEA Telephone (1) 2360 2788 or 2360 2789. EARN/BITNET ID NES@IAEA1 2. Mr. M. Raatz, Nuclear Power Engineering Section, IAEA Telephone (1) 2360 2852. EARN/BITNET ID XIM@IAEA1 |

British Expertise in Science and Technology

G. Stirten

Longman Cartermill Ltd., Technology Center, St. Andrews

PRESENTATION

My presentation concerns a database called BEST

"BRITISH EXPERTISE IN SCIENCE AND TECHNOLOGY".

This is a commercially available database published by Longman Cartermill - a private company - but is nevertheless a good example of an innovative and efficient approach to information management.

BEST contains information on researchers in the university and public sectors. The data is centred on individuals and details their personal scientific skills, research topics and specialisms.

Here is an example of a typical BEST record : < **show record** >

Currently BEST comprises 26500 entries on this model. This represents 85% of researchers in the UK public sector and covers all universities and polytechnics. Considering contributions are voluntary this is excellent coverage.

As you see, the records are set out along the lines of a curriculum vitae, listing the person's present job and illustrating education and career progression. The next sections relate to the expertise acquired and particular areas of work. We encourage the contributors to include as much detail as possible to distinguish their expertise from that of other people. The inclusion of the "Other Expertise" field to catch adjacent interests also contributes to distinguishing one expert from another in terms of skills.

Research funding information is supplied to us direct by the research councils and gives more project-specific data. It will become clear later in this presentation why this is. A long list of grant details often indicated a particularly esteemed scientist. Industrial grants may also be mentioned, subject to sponsor's approval.

The latter part of the record is more "conventional" in its coverage of publications, patents and keywords. Subject descriptors are attributed by Longman Cartermill to each record as a means of indexing - the only editorial intervention apart from corrections.

The final section gives contact details, since many institutions and researchers prefer inquiries to be made through the technology transfer office.

There will be an opportunity to see a demonstration of the database during the conference breaks.

So this is what our information source contains. How did we arrive at this idea and format?

The idea of BEST was not as a result of some businessman perceiving a niche in the market: In 1985, a committee of university and government representatives concluded that a database was the best way to achieve the joint aims of

- helping universities manage their resources better

- giving British industry a boost by facilitating access to new technologies and specialist help
- improving industry/university relations

It is because BEST is fully supported in principle by both universities and the government that it also enjoys the support of and data from the research councils.

Why choose the individual as the data-unit for BEST ?

Because a university's resources are to a large extent the sum of the skills of its staff, it was deemed appropriate to portray individual's skills in the database. This has proved very popular and successful both with universities and with users.

That's the theory. How is BEST organised in practice?

From a strictly production and organisational point of view:-

BEST was set up in such a way as to minimise the administrative burden on the universities. Data collection, updates and information are handled through the industrial liaison office of each university. That office distributes and collects the questionnaires and updates. Nowadays this amounts to a once-a-year job, since each institution's records are updated annually. This involvement allows the ILO to get an impression of the participation of his academics in the project. The real resource management function is fulfilled by the database each institution receives of its own entries. These mini databases are updated annually with the records.

Other production-related issues are additionally influenced by marketing questions, not least in terms of the quality of the database.

Updating is one aspect of quality assurance which is important not only to the database customers but also to the contributors who naturally wish to be accurately presented in the database. Consistency in format and editing is the primary means of quality control: the use of scientists as editors ensures optimal clarity in the texts.

In an information product, too many people forget that quality is a function of usability. Our use of Basis software online and the introduction of PC-based, flexible and user-friendly CD-ROM format (both of which afford free-text searching) have made BEST popular with users. At the forefront of industry, accuracy, speed and ease of use are crucial factors in a product's success. Our BEST user list comprises mainly blue-chip, leading edge companies such as ICI, BP, Rover Group, UKAEA, British Nuclear and British Telecom. They pay an annual subscription linked to turnover.

Running BEST requires a very close relationship with both the contributors and the subscribers. In fact I have just come here directly from a "User group" seminar where subscribers are invited to air their views and respond to new product ideas. Such close links enable Longman Cartermill to pick up on customer requirements and requests at an early stage. In the last couple of years it became clear through the universities' and industry's interest and participation in CEC programmes that information from Europe was very desirable.

We expected that the CEC CORDIS databases (two of which we are compiling - RTD Results and RTD Partners) might fulfil this need but as it turned out, no individual expertise-based database was included. Given the difficulties in using the CORDIS products and the desire

for BEST-type data. Longman Cartermill decided to proceed with European data collection, beginning with a pilot project in Germany. BEST Germany may in fact be known to some delegates. In April this year we developed BEST Germany into a pan-European initiative called BEST Europe. Our aim is to collect large numbers of expertise records in the same form as the UK database but from all EC and EFTA countries. Former Eastern Bloc countries are also eligible. Currently 40 European universities are participating and the number of records stands at 1100. The company is in discussion with central research authorities in France, Belgium and the Netherlands with a view to collecting data for joint use. So far we have had very positive responses everywhere.

In Europe, our objective is to have a saleable database by this time next year.

To sum up, in seeking to collect and manage their resources, British universities sparked the creation of an information source which was developed into a marketing tool for their skills. They even managed to relieve themselves of the associated administrative burden. The original idea has now spawned a parallel American database run by a sister company and a groundbreaking European project.

BEST Europe

The Database of Research Skills and Expertise

You may submit your record either by completing the enclosed questionnaire or on blank paper using a word processor and following the format suggested in this example. In both cases, we ask you to avoid abbreviations, subscripts and superscripts. Please complete your entry in English and use only ASCII characters. Then sign it and return it to the contact person at your institution.

CONTRIBUTOR MEYER, Professor Dr, Karl-Heinz
PRESENT POSITION Institutsleiter
DATE OF APPOINTMENT 1990
DEPARTMENT Institut fuer Chemie
INSTITUTION Technische Universitaet Berlin
STREET Universitaetsstrasse 17
POSTCODE D-1000
CITY Berlin
COUNTRY Federal Republic of Germany
TELEPHONE +49-30-456789
FAX +49-30-456780
QUALIFICATIONS Habilitation, Universitaet Bonn, 1987;
 Dr Ing, Universitaet Bonn, 1984;
 Dipl Ing, Technische Universitaet Muenchen, 1980
POSITIONS HELD 1988-1989, Technische Universitaet Berlin,
 Professor;
 1986-1988, BASF AG, Forschungsdirektor;
 1984-1986, Sandor AG (Switzerland).
 Entwicklungsingenieur;
 1980-1984, Universitaet Bonn, Hochschulassistent

RESEARCH & EXPERTISE My main interest over the last few years has been the application of nuclear magnetic resonance (NMR) spectroscopy to structure elucidation, principally of natural products of plant origin but not exclusively. The techniques below could be applied to any organic material of sufficient solubility.

Early studies used natural abundance carbon-13 NMR to establish the structures of a number of natural products which could not be obtained as crystalline material, such as pyrotechnum and devastin. The work involved the synthesis of a large number of model compounds for the comparison of chemical shifts. Currently, my main activity in this area is in the development of improved accumulation techniques which can be used with very dilute solutions. By the use of these techniques, we have been able to deduce the structures of 2 oils (phytin and loctodesin) obtained in very small quantities, from the seeds of the Nepalese Polyanthus. I have also studied transient species, such as carbonium ions from steroids, by carbon-13 NMR.

EXAMPLE

FUTURE RESEARCH

Recently, I have started to apply nuclear Overhauser effect (NOE) difference spectroscopy to problems of conformation and binding of biologically active molecules. This technique worked in studies of the photoisomerisation of retinobin and the binding of metaxyloxin to peptide fragments. We are now using this technique to model the interaction of new antibiotics with enzymatic active sites. Access to a recently acquired 500 MHz spectrometer has shown great possibilities for this technique.

I hope to develop a technique for linking high performance liquid chromatography (HPLC) with nuclear magnetic resonance (NMR).

I have acted as a consultant for Hoffmann-La Roche and Rhone-Poulenc.

OTHER AREAS OF EXPERTISE
PROFESSIONAL MEMBERSHIP

Gesellschaft Deutscher Chemiker;
American Chemical Society;
European Chemical Society

LINGUISTIC ABILITY

Native language: German;

Other language(s):
reading, writing, speaking: scale 1 (basic) to 3 (fluent):

English: 3, 3, 3;

French: 2, 1, 1;

Swedish: 2, 1, 1;

Japanese: 1, -, 1

PATENTS

Ein neues Breitbandantibiotikum extrahiert von der Nepalesischen Polyanthus, Patent/
Application Number: DE 0077123, 1987,
country(ies) covered: Federal Republic of Germany, owner: self;

Pulse sequence for location of tertiary carbon atoms in an organic molecule by nuclear magnetic resonance, Patent/Application Number: EP 1234567, 1988, country(ies) covered: all Europe, owner: joint;

PUBLICATIONS

Partial structure elucidation of antibiotic from *Celosia cristata* L., Journal of the Chemical Society, 1987, 3863-3870;

Ringöffnung von N-(tetraalkylamidinio)-pyridinium-Salzen, Chemische Berichte, 1986, 119, 4017-4038, (with J Huber);

Recent advances in low temperature NMR, Progress in Solution Chemistry, 1985, 3, 308-311, (with R Smith and P Walker);

KEYWORDS

nuclear magnetic resonance; NMR spectroscopy;
structure: natural product; pharmaceutical;
synthesis: binding

INDUSTRIAL RELEVANCE

pharmaceutical industry;
fine chemicals industry

I have read the explanatory leaflet and authorise Longman Cartermill to include this information in its database system.

Signature.....

Karl Meyer

Date..... 4/3/91

**ENS Nucnet: Europe's Nuclear News Service
open to the World**

J. Ashton

European Nuclear - Society, Nucnet, Bern

ENS NucNet: Europe's Nuclear News Service Open to the World

The Reasons for NucNet

The nuclear industry has partly itself to blame for the negative attitude it faces from the public. To some extent, this attitude has been created by inaccurate reports in the media. However, it would be too simplistic to blame the journalists, who cannot in all fairness be expected to comprehend all aspects of this complicated subject, when not even the industry can get the facts across clearly. It is the duty of the nuclear community to communicate properly with the media.

After many failed attempts in Europe to set up a co-ordinated nuclear information system, the European Nuclear Society, ENS, finally succeeded last year in bringing together the European nuclear community for an ambitious public communication venture - NucNet.

What is NucNet?

NucNet is a Europe-wide network which circulates nuclear news and information that the public should be informed of, written in a language that the public can easily understand. Nucnet is aiming for a balanced picture of nuclear to reach the public via the media, through a rapid flow of accurate information.

How It Works

All nuclear countries in Eastern and Western Europe, including the Soviet Union, participate in NucNet. Within each country, all sources of nuclear information, such as utilities, nuclear power plants, the fuel cycle industry, safety authorities and waste organisations, are directly linked to the ENS NucNet central office in Bern. Using faxes, they supply central office with all information about nuclear energy which is of interest to the public. This is done in various languages. The central office chooses the most important information, and edits it in English before distributing the material through the system, using the most up-to-date computer-fax equipment.

Presently, NucNet news goes to senior executives and top PR officers. In some countries, NucNet material is already being passed on to the media, while in others it is used to answer media enquiries. Shortly, NucNet will be distributed to Europe's major national and international wire agencies.

Type of Information

NucNet information is produced and distributed in various categories, e.g. news and background information. Its main aim is to present to the media and public the essential facts and major developments - positive or negative. This variety of information is aimed at de-mystifying the often complicated and mysterious world of nuclear power.

Good News.....

Even insiders, who may be suffering from the effects of public phobia towards nuclear, tend to see only the negative aspects of the industry's present state. However, nuclear actually has plenty to shout about, amid the gloom. The performance of most nuclear power plants is excellent. They operate reliably, safely and economically. They provide about one-third of Europe's electricity, and meet about 18% of the worldwide electricity demand. Nuclear is the only major CO₂-free energy source, and has other important environmental advantages. So NucNet can carry a lot of positive stories.

Bad News.....

As with any technology, mistakes can be made, and incidents and accidents can happen. Except for Chernobyl, the consequences of incidents in civilian nuclear installations have always been contained within the installations themselves. Because nuclear has been wrongly singled out as a special danger, NucNet reports on all relevant human and technical failures. This information is reported accurately and put into its proper perspective. Thanks to NucNet, PR officers and journalists are getting a true picture rather than distorted facts.

Background

In the run-up to the fifth anniversary of the Chernobyl accident, NucNet circulated a series of background features, spelling out in detail all the known facts about the accident and its radiation effects. NucNet supplies such background information on all events and developments of a controversial nature, and this information can later be used for reference.

Accurate, Quick and Simple

The major concern of NucNet's editorial team is that it receives sound facts before any information is distributed. The network must have accurate information. Speed is the second most important factor in the modern communications world. Speed and accuracy are often conflicting demands, and NucNet is facing this situation by striving for the best possible balance between the two. There again, accuracy is of little use if one can only present a true picture after the media has headlined an inaccurate story. The most difficult task is to present technically complicated information in a way that the average man-in-the-street can understand it. The NucNet team works hard on this.

Quality

Accuracy, speed and simplicity is one side of NucNet's output. Another aspect is the reader-friendly presentation of its faxes.

The most important news, which should be read by everyone, is given the category "A", while less important news is labelled category "B".

NucNet faxes are attractive to the eye. The main message is contained in the headline and the lead text. The information is presented in English in a professionally structured manner, in language which is concise and easy to understand. Whenever possible, illustrations are used to explain a particular point.

Worldwide coverage

Since the start-up of the service, NucNet has had an exchange agreement with the Infowire service of the US Council for Energy Awareness. NucNet circulates those Infowire stories which are relevant, or of interest, to the world beyond the US. So from the start, NucNet covered the whole of Europe and the USA. In addition, NucNet quickly succeeded in obtaining subscribers and news information sources in Far Eastern countries and other important nuclear nations. Through a number of special arrangements and agreements, NucNet should be able at the end of 1991 to cover the whole world.

Main Achievements

When ENS began working on NucNet back in 1989, no-one gave it much chance of success. However, NucNet started on January 1st, 1991 with the support of all the major European nuclear countries, and with its financial situation assured. After the first ten months of operation, there is outright enthusiasm among network users. Initial scepticism, which once existed in some countries, has now disappeared. Establishing NucNet has in itself produced a positive factor: the network forced the nuclear community in many countries to take a serious look at their communications policies, to pull together and to organise themselves.

Benefits

With NucNet, information people throughout Europe and other parts of the world have at their disposal - and at the right time - the information they need for their public communications work. The media is also showing a growing interest. Through NucNet, nuclear communicators have come closer together. The European nuclear community has proved that it is ready to open up and demonstrate honesty and transparency.

The Way Ahead

NucNet has a long way to go, and is far from perfect. Many of its European sources have not yet learned how to supply information at all - or are not yet willing to do so. Others must start supplying the right information at the right time. Overseas, a number of countries must still be won over, so that they can become affiliate members of NucNet.

Only when these problems have been overcome, can the network operate at its full capacity to the benefit of the world nuclear community, the media and the public.

**Paging Relations & Relating Pages:
Improving Data Management for Probabilistic
Safety Assessment in RISA+**

A. Behr

RISA Sicherheitsanalysen GmbH, Berlin

RISA

Andreas Behr
RISA Sicherheitsanalysen GmbH
Pestalozzistraße 78
1000 Berlin 12

"Paging Relations & Relating Pages:
Improving Data Management for Probabilistic Safety Assessment in RISA+"

Contribution to
"2nd Workshop on Information Management in Nuclear Safety, Radiation
Protection and Environmental Protection"
30./31.10.91 Munich/FRG

1. General
2. Data Management and PSA
3. Pages and Relations
4. RISA+

1. General

Due to the fast increase of information collected for nuclear power plants (NPP) in the last years, data management has become an important point of attention in this field. This can be explained by the fact that

i. each change in technique as well as in maintenance strategies is documented (which causes a *steady growth of technical documentation* over the lifetime of a NPP)

ii. the *amount of operational data* (e.g. incidents) to be documented is *growing exponentially* with the lifetime of the NPP (because of changes in safety regulations which demand collecting more operational data).

RISA

Two further reasons for introducing more complex data management techniques in this field are given by the rising interest to combine, compare and evaluate existing data and by the request to perform periodically a risk analysis for a NPP, which means to go through both the technical documentation and the available operational data.

A probabilistic safety assessment (PSA), that is nowadays the most accurate kind of risk analysis, has the aim to quantify the safety of a NPP by rendering probabilities for the worst event which can take place in a NPP, i.e. for core melting. For short, what you have to do to get these measures is

- 1) to determine which systems, in particular safety systems, have to fail for effecting the worst case,
- 2) to analyze the piping and instrumentation as well as operational and maintenance strategies of each (safety) system for describing its efficiency and possible failure causes,
- 3) to collect statistical data for the failure of components or subsystems (e.g. power supplies) involved in the functioning of the (safety) system,
- 4) to fit the collected safety-relevant material into a mathematical, i.e. calculable, model,
- 5) to run calculations,
- 6) to document the results as well as the proceeding of the performed PSA, so that it can be used later on.

With respect to data management, which covers the construction of a database and the preparation of an easy-to-use access, a tool for PSA studies can only be an efficient one if it meets certain requirements:

2. Data Management and PSA

Performing a PSA takes one to ten years, depending on the involved manpower, i.e. the database of the used PSA tool is consulted from the very beginning, when the safety systems of the NPP are described, to the

RISA

end, when the probabilistic results are documented. In the meanwhile data of very different nature must be processed:

- P&I diagrams and component & system specifications
- Incident reports and operational data (statistics)
- Fault trees (i.e. graphics explaining failure behaviour within safety systems)
- Event trees (i.e. graphics showing sequences of systems failures leading to the worst event)
- HRA trees (i.e. graphics showing possible human failure)
- Inputs & outputs of used calculation codes
- Raw text

The design of a PSA database has, first, to provide appropriate data models for these forms of data and, secondly, to allow a fast access for changing the data.

The easy-to-use access tools must present data in a way that the user is accustomed to work with, i.e. P&I diagrams as graphics, failure behaviour over time as x-y chart and so forth.

While this still seems to be manageable from the database developer point of view, the challenge for data management lies in the connection of database and interface tools:

i. Since the database should be an informative and not in itself contradictory data source, it must be kept as consistent as possible. This means, for instance, that statistical data stored for a given component has to be compatible with the failure rate for it used in a calculation and that the calculation has to be rerun whenever some data of a component or system used in the calculation input has changed.

ii. The claim for consistency implies that all data items in the database must be related such that consistency can be kept with reasonable time effort. Response time is crucial for the applicability of a PSA tool. Moreover an interactive tool should present relations between data items by itself, if they are evidently helpful, and easily on request, if a certain helpfulness can be foreseen.

iii. A PSA tool should provide the possibility to print out the PSA in report form, i.e. data must be fit on a given paper format, together

RiSA

with heading, signature, numbering and other basic text processing facilities. Only by this undesired differences between an analysis and its documentation can be avoided.

3. Pages and Relations

Up to now the most usual way of working with data is to have data written on pages. A page is particularly comfortable for assigning a creator's name, date or company's name and for performing other administrative tasks with it. From a clerk's point of view the result of a risk analysis is a book describing the failure behaviour of the NPP. On one page fits

- a. a form *sheet* (e.g. a component data sheet) or
- b. a part of a vertically scrollable *list* (e.g. a list of safety systems) or
- c. a part of a horizontally and vertically scrollable *graphical area* (e.g. a P&I diagram or fault tree) or
- d. a part of vertically scrollable *text* (as it is for text processing)

All kind of mentioned PSA data so far can be presented easily by means of at least one of these four possibilities. Whereas it is trivial to split a list in such a way that it fits on continuously numbered pages, splitting graphics means to find appropriate separation points and is, therefore, more complicated.

For obtaining an adequate separation of graphics and for meeting the other requirements to PSA tools given above, the database has to manage the information at which of the data objects presented in the graphics a cut is made and, if necessary, how to rejoin the separated parts afterwards. For instance, it must be clear how to join a fault tree, whose parts are presented on different pages, for putting together a calculation input.

This kind of relating pages here is more than still numbering and glossary, but means to manage page relations as to the data. Whenever a certain data item on a given page is chosen, it is related to all other pages, where the item is on. When it is changed, it can be changed on all other pages, too. That is the basis of keeping consistency. A usual book cannot provide such relations, or it will become overloaded with

RISA

cross-references and too difficult to survey.

It should be clear that page ordering may not be dependant from data relating and vice versa. But, it is an advantage to combine both so

- that the PS analyst can directly update his analysis without having to update still a separate documentation and
- that the temporary user can easily go through and print the pages of interest without troubling about how to get the analysis in a readable form

4. RISA+

A widely used program for reliability calculations (not only for NPPs) is the RISA code by the RISA Sicherheitsanalysen GmbH, whose development started over ten years ago. It is now available as a mainframe version on every host running a 'standard' FORTRAN compiler as well as on a Personal Computer together with a graphical user interface.

The RISA code provides very effective algorithms for calculating reliability. But, as it is for all its competitors, too, it uses a very simple file-based organization of data: Ten years ago there were too many algorithmic problems in calculating reliability for complex technical systems which had to be solved first. For meeting future requirements in 1990 the RISA Sicherheitsanalysen GmbH started to implement the RISA code on UNIX workstations and to connect it to a database system.

The name of the now resulting new PSA tool is RISA+. It is commercially available in the beginning of 1991 and its starting configuration is a SCO Unix PC, an INGRES database and the OSF/Motif window system.

In RISA+ the sketched ideas of connecting pages to data relations is realized as follows:

RISA

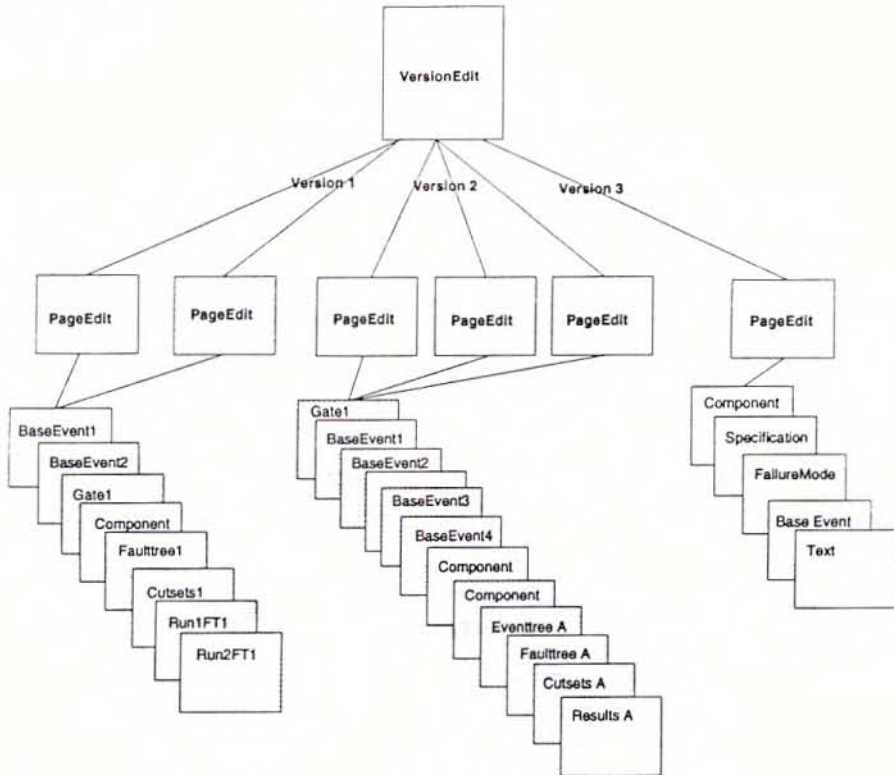


figure 1

Since performing a PSA is a long and complex process, it should be possible to store a part of the analysis at every time, if the PS analyst thinks of using it later on or if he just wants to try out some modelling or calculation of the safety systems without risking to get some data lost. These parts are called 'versions' in RISA+. The PS analyst begins his work with one or more root versions and then creates from time to time new versions. Most commonly his last version will be the result of the PSA. *Versions are technically defined to be the minimal data sets, for which consistency is kept.* Thus RISA+ allows to manage data which is not consistent, but sharply distinguishes it from consistent one.

RISA

After passing access authentication the user gets an overview of the existing versions. For that a program named 'VersionEdit' exists (see figure 1). The VersionEdit allows to say which version should be processed and which pages of the corresponding version should be offered. For simplifying this task of selection **pages are conceptually grouped**: P&I diagrams, component specifications, incident forms, base events, fault trees, event trees, HRA trees, calculation inputs, calculation results, etc.. It is clear that not all pages of a version should be presented to the user at once, because there can be thousands of them. In the starting phase of a PSA the analyst is concentrated on data collection, i.e. he will work with component or safety system specifications rather than with calculation inputs and outputs, which he is doing in the end of the analysis. The selected pages are presented to him by a program called 'PageEdit':

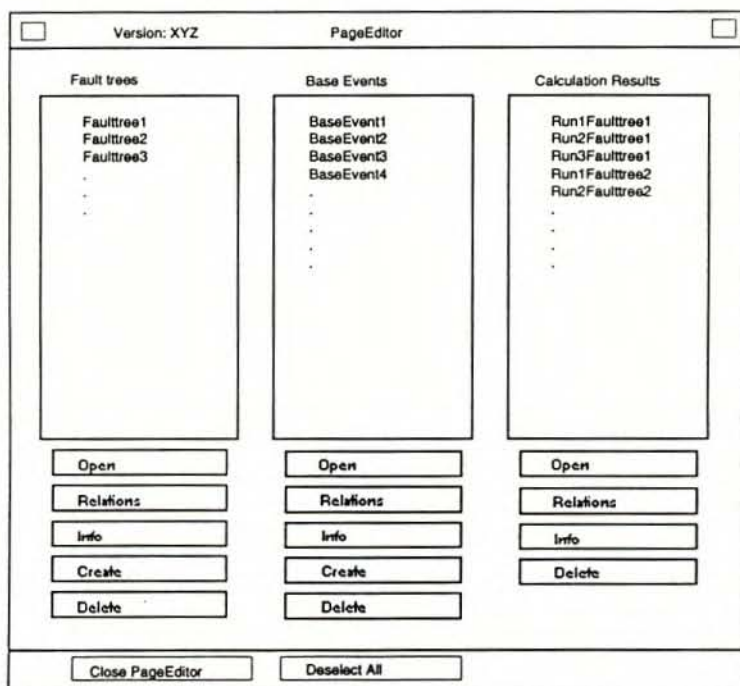


figure 2

RISA

It is, of course, allowed to open several PageEdits with different groupings of the pages in a version.

The PageEdit contains one to six scrollable lists, where the names of the data pages of this version are given. Note, that, as it is indicated in the figures, there is, for example, a describing page to a base event. The user can now select the specific pages he wants to work on and open them as well as he can delete or create new ones. The button 'Info' hides information about the creator, the revisor, the inspector and the dates of their access to the selected page.

The button 'Relations' is of most importance to data management. Assume that in figure 2 the page 'Faulttree1' is chosen and the Relations-button is pressed. You will get special PageEdit with an ordering in the following way:

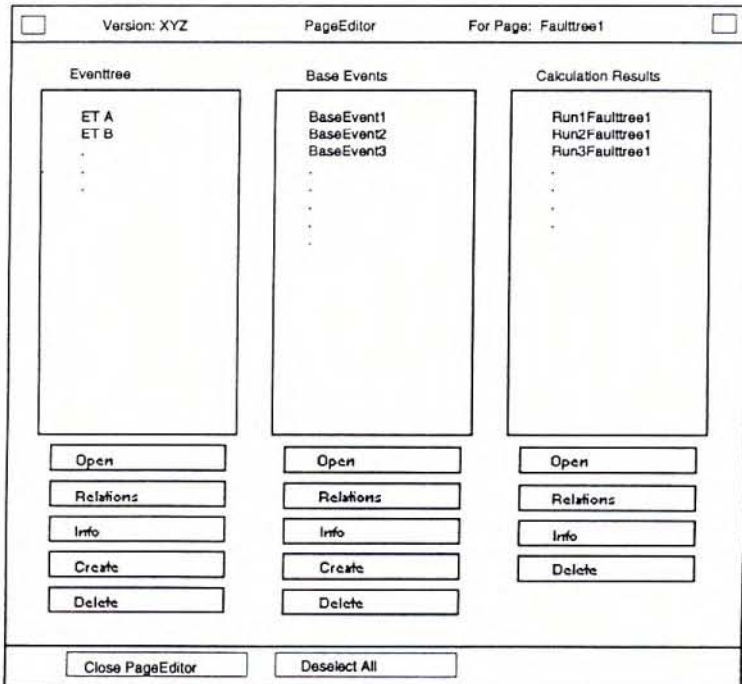


figure 3

RISA

RISA+ presents automatically all other pages of the version, which are directly related to fault tree 1. This may be, for example, all its base events, its top event, the event trees where fault tree 1 used, the calculation inputs and outputs using fault tree 1, and so on. Here the user has also the possibility to decide which pages should be presented to him. Moreover, if he is for example interested in the other fault trees of a certain event tree containing fault tree 1, he can select the event tree, press the Relations-button and will get a reordering of PageEdit showing all information directly related to the event tree. By this a user can 'walk' through the PSA along relations between data items. **These relations are given by the logical ordering of the data itself:** Base events are part of a fault tree as well as components are part of a P&I diagram. The user does not have to establish them by his own.

Moreover the user can print out a certain page at each time he wants, because information is prestructured for that purpose.

The overview of RISA+ sketched in this article can only give a small hint about the underlying PSA data structuring. The realization of RISA+ particularly required a *careful method of consistency checking*, which goes hand in hand with the management of the data relations: It is possible to check consistency of two data items only if there exists a known relation between them and vice versa.

The RISA+ PSA tool is not the only computer program where data is structured in the shown way. The RISA Sicherheitsanalysen GmbH participates in a project sponsored by the Federal Ministry For Environmental Protection, Nature Conservation and Nuclear Safety, in which a safety analysis and information system (SAIS) for NPPs should be developed. The recent, very positive impressions from RISA+ led to include an ordering by pages in the SAIS, too, as well as it will be included in a computer code for statistical data collecting & data reduction projected by RISA Sicherheitsanalysen GmbH in the next year. Here it will be proven if the discussed ideas can be applied to other kind of data and data management as it is the case for a PSA.

**Development and Operation of Publicly
Accessible BTX
Environment Information Terminals**

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**DEVELOPMENT AND OPERATION OF PUBLICLY ACCESSIBLE BTX
ENVIRONMENT INFORMATION TERMINALS**

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1. Introduction

The introduction, in the autumn of 1989, of a Btx Environment Information System about Airborne Pollutants, Radiation Protection Provisions, and Waste Management Data available to the public at large has considerably expanded the classical ways on which the Bavarian State Ministry for the Environment disseminates information in press releases, at press conferences, and by distributing pamphlets. This new way of making available information was created with the fact in mind that a growing interest in the availability of environmental data has been clearly observed in society for a couple of years.

With its Btx Environment Information System, Bavaria has also shown a practical way of putting into effect the EC directive adopted on June 7, 1990 about free access to environmental information held by authorities, and of doing so as broadly as possible at the lowest possible administrative expense.

According to the directive, which must have been converted into national law by December 31, 1992 at the latest, the authorities are obliged to make available to every member of the public, on demand, e.g. data about the status of bodies of water, the air, soil, animals and plants, natural habitats, and about activities or measures potentially exerting a negative influence on that status.

Although the number of Btx connections of at present approx. 300,000 is increasing rapidly, and many post offices already make public Btx terminals available free of charge, many citizens still have no direct possibility to call up environmentally related data from the Information System of the State Ministry for the Environment. In addition, most members of the public are likely to be interested only in information about the environment in their immediate vicinity.

Another drawback experienced by impatient members of the public is the relatively long time it takes to "skim through" the entire Btx Environment Information System because of the slow page buildup typical of Btx. To solve these problems, the city of Munich with financial assistance by the Bavarian State Ministry for the Environment and together with the Young & Rubicam Advertising Agency has developed a new type of Btx Environment Information Tower commissioned in the "Ecoshop" of the city of Munich in December 1990 and in continuous operation since then.

2. Technical Concept

The technical design of the Information Tower is based on these requirements:

- Primarily those data are to be made available which include information about Munich and its environment; nevertheless, it should be possible also to access the entire data volume kept by the Bavarian State Ministry for the Environment.
- Specific local data should be up to date, and it should be possible to call them up at minimum buildup times per page.

- The public should be able to dial into the system by means of very simple commands.
- The Information Tower should be in operation daily from 6 a.m. to midnight, i.e. also outside the opening hours of the Ecoshop.

3. Technical Implementation

The housing of the terminal of the Btx Environmental Tower is made up of two parts, the tower and the pinboard. The tower contains the necessary technical equipment, while the pinboard carries advertisements, such as photographs and copy describing the contents of the programs.

The equipment configuration is made up of a 55 cm TV monitor and two controllers (PCs). Both controllers are equipped with one Btx decoder each and are interconnected by means of a special network. When installed, one D-BT 03 Btx modem was connected to each controller.

In this way, local programs can be stored which are updated several times a day by means of downloading. When called up in the off-line mode, these pages will appear without delay.

On the other hand, this allows topical Btx pages from the entire program of the Ministry to be called up immediately in the on-line mode. The control software has been designed so that no external Btx programs can be dialed and the system automatically reverts to the main content if there is no further entry within two minutes.

The installation of the two controllers with separate Btx modems in addition ensures that Btx on-line recalls require no interruption of the downloading step updating specific local programs and, conversely, Btx on-line recalls by interested passers-by can proceed undisturbed even while information is being downloaded.

The system is operated by means of a touch sensor panel installed on the inside of the display window, which allows programs to be called up through the window. The sensor panel contains eleven sensor key fields required for operation plus one additional 12th sensor key, "start/survey," for immediate dialing of the local program and for returning to its contents page in those cases in which the user had been on-line in the entire program of the Ministry for the Environment.

4. Contents and Structure

If no entry is made to the Btx Tower for a period of 90 seconds, a periodically repeated sequence of so-called "animation pages" are shown with general information about the contents of the program and the way in which to operate the Btx Tower by means of the sensor panel. After actuating the "start/survey" key one reaches the main content, which allows users to decide either for the local program (off-line) or the whole program of the Ministry for the Environment (on-line). For simplification, only the local program will be described in greater detail below.

This local program at present contains measured data about air quality and environmental radioactivity in Munich and the environment of Munich and offers assistance in the correct interpretation of those data. The current three-hour averages of pollutant concentrations of sulfur dioxide, nitrogen dioxide, carbon monoxide, dust and ozone can be called up, which are measured continuously by three fully automated measuring stations in downtown Munich operating around the clock. In addition, users may call up explanations on the subject of "smog" and "suggestions for personal protection under smog conditions."

Also the latest measured data, normally updated daily, of environmental radioactivity at the measuring station near Effnerplatz and, in a statewide Bavarian survey, of all 30 measuring stations of the environmental impact measuring system for radioactivity can be dialed, as can be the results of regular manual measurements performed in and 4-8 km around Munich of radiation dose and information about radioactivity contained in foodstuffs. In addition, the public can learn how to assess the health impacts of these measured data and what behavior is recommended by the competent authorities in

special hazard situations. Finally, important units of measurement, such as Becquerel or Sievert, are explained.

From November this year on, the city of Munich, in a second Btx Environment Information Tower to be set up on Marienplatz in downtown Munich, will offer the public additional local information about practical possibilities of refuse minimization and utilization.

5. Public Acceptance

In order to test the acceptance by the public of the Btx Tower and, above all, of the program transmitted in this way, the city of Munich ran a representative opinion poll among members of the public over a period of several months. The location of the Btx Tower in the EcoShop of the city of Munich at one of the lower levels of Stachus Square is particularly suitable for this purpose: The EcoShop registers roughly 1000 visitors every day, and it is passed by some 10,000 to 20,000 persons a day.

In order to obtain particularly reliable information, the poll was conducted during opening hours of the EcoShop (8.30 a.m. - 6 p.m.), in the evenings, and on weekends. A first, preliminary evaluation of the poll indicated that by far the majority of the 419 people queried regard the concept of a publicly accessible Btx Environment Tower as a good way of passing on environmental information to the public. The same broad approval was expressed of the contents and scope of local environmental information. Also the userfriendliness of the Environment Tower was judged positively by a large percentage of the persons asked.

6. Outlook

We hope the pilot project launched by the city of Munich will serve as a model to many local governments. As the costs of such environment towers are going to decrease more and more, each major city and even smaller municipalities should soon be able

to use this promising approach to informing the public. This is meaningful also because cities can use the same information towers in much frequented places to display also additional municipal programs, such as calendars of events or tourist information.

As the telephone system is being converted to digital (ISTN), new possibilities are opening up for designing the software to be used in Btx information towers. The speed of data transmission in the ISTN network world make the downloading of continuously updated pages from the complete Btx program of the State Ministry of the Environment unnecessary. Instead, these pages could be taken from the whole program of the State Ministry for the Environment on line when a member of the public calls up data. In this concept, there is also no need to store so-called "shaded pages" in the PTT computer, which are at present required for program control and which also may need to be modified whenever the Ministry for the Environment changes its program structure. Moreover, users in this way will be supplied always the most recent data, while downloading Btx pages, even though going on in the background at regular intervals, is unable to achieve the full topicality of the whole program, especially with regard to events relating to the environment.

BAVARIAN STATE ENVIRONMENTAL MINISTRY DM 0.00

Bavarian State Ministry for Development and the
Environment

Environmental Information System

| | |
|---------------------------------|---|
| Radiation Protection Provisions | 1 |
| Airborne Pollutants | 2 |
| Waste and the Environment | 3 |

Communication among Authorities (GBG) 8

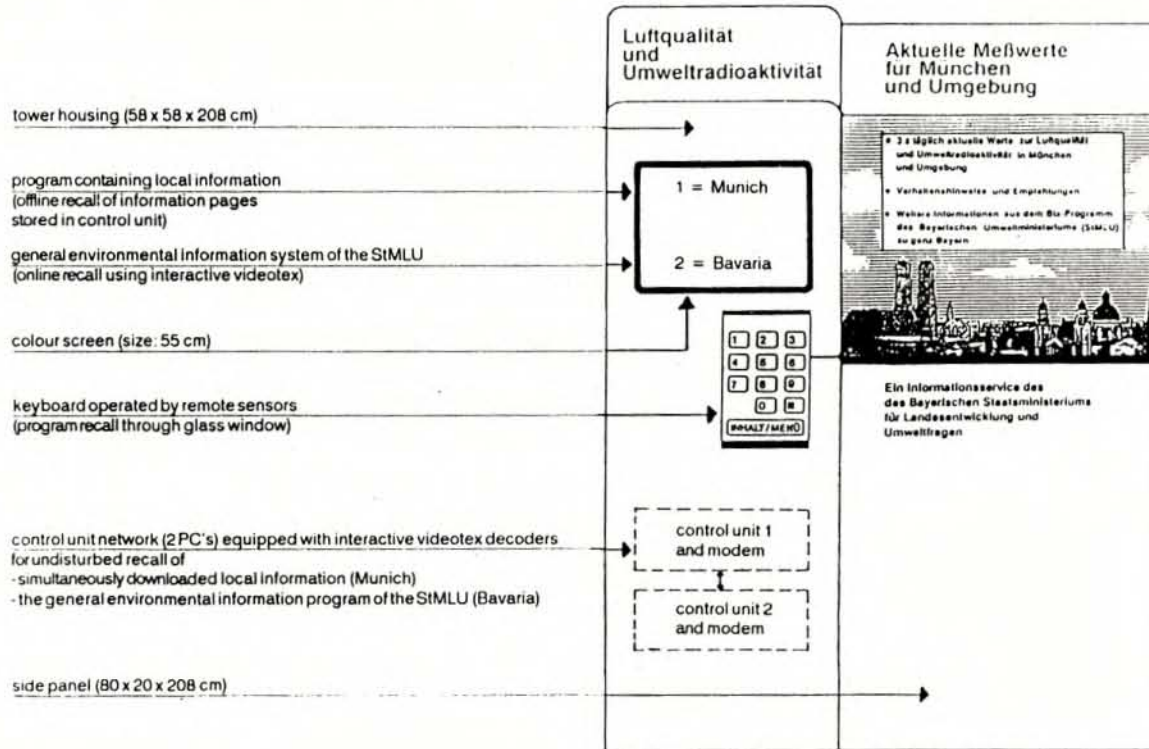
Bavarian State Government 9

Sources: 25050 a

Directive by the European Community Council of June 7, 1990 concerning the free access to environmental information

- * Any person has basically free access to environmental information held by public authorities in written, visual, audible or data base form
- * Any person has the right of information without having to give any specific reason
- * Any person has the right to seek a judicial or administrative review of the decision by the public authority
- * Authorities are obliged to provide periodically general information to the public regarding the present status of the environment
- * Member states shall bring into force laws, regulations and administrative provisions necessary to comply with this Directive by December 31, 1992 at the latest

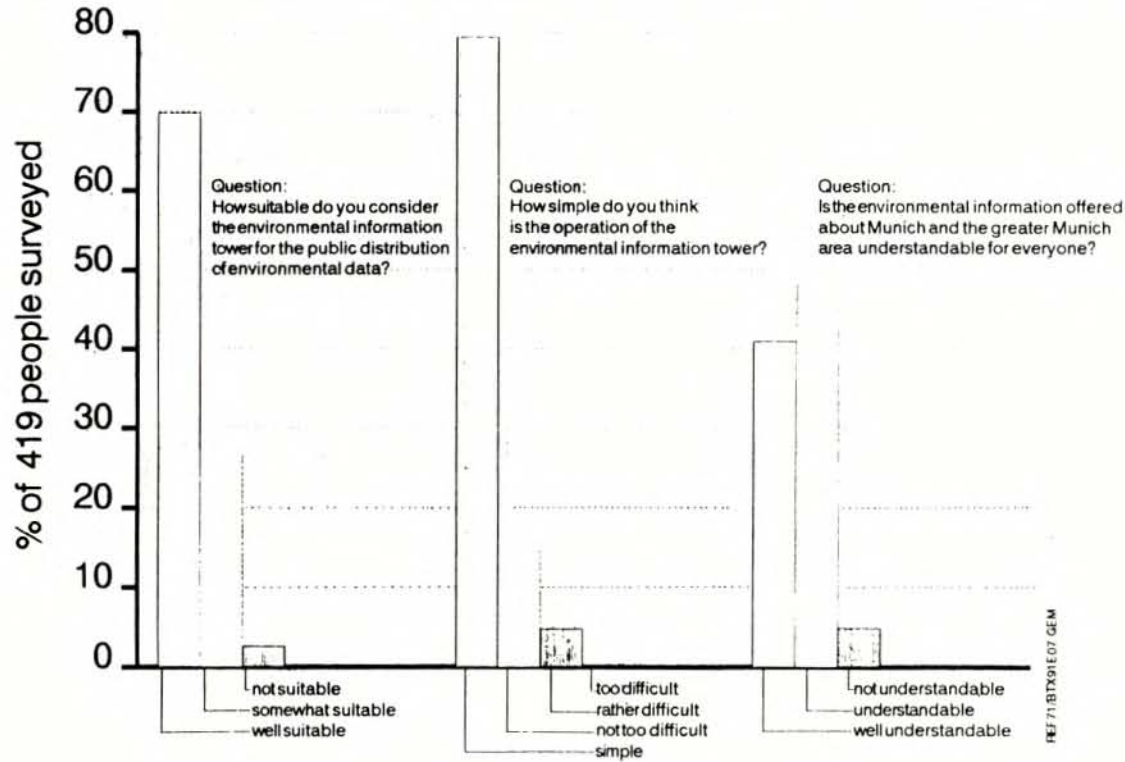
Technical realization of the interactive videotex environmental information tower at the 'Umweltladen' in the city of Munich



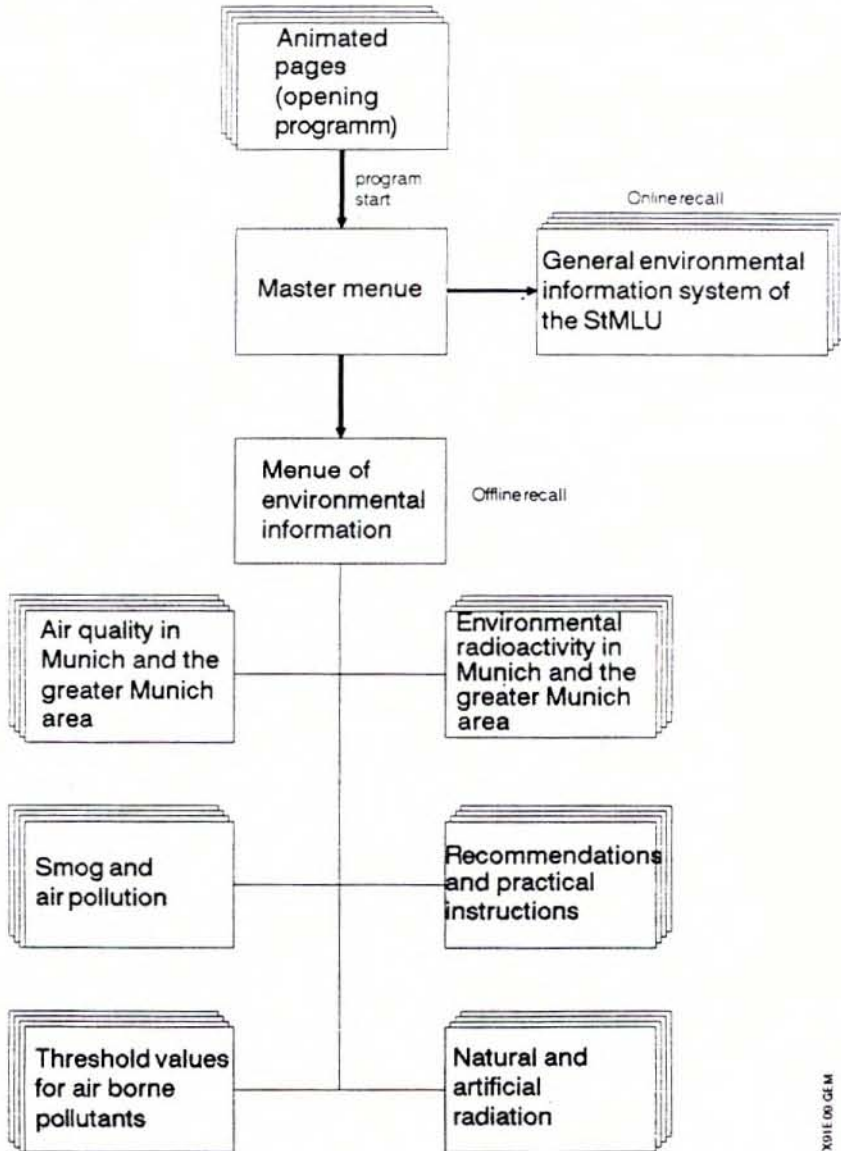
Technical requirements to be met by the interactive videotex environmental information tower at the 'Umweltladen' in the city of Munich

- * Opportunity to alternatively recall of local environmental data or the general environmental information of the StMLU
- * Recall of local environmental data within a maximum of one second
- * Very easy control
- * Operation also out of official business hours of the 'Umweltladen' (6 a.m. to 12 p.m.)

Public opinion about the environmental information tower at the 'Umweltladen' in the city of Munich



Environmental information offered to the public by the interactive videotex tower at the 'Umweltladen' in the city of Munich



BAYER. UMWELTMINISTERIUM 0,00 DM

**Bayerisches Staatsministerium für
Landesentwicklung und Umweltfragen**

UMWELTMINISTERIUM

Strahlenschutzvorsorge.....

Luftschadstoffe.....

Abfall und Umwelt.....

Behördenkommunikation (GBG).....

Bayerische Staatsregierung.....

**Impressum #
25050a**

TECDO, Information Retrieval System for Technical Documents

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TECDO, Information Retrieval System for Technical Documents U.Riedel, A.Höpfner, Gesellschaft für Reaktorsicherheit (GRS), Cologne

Users and Content of TECDO

The database TECDO is intended to be a quick and comprehensive information retrieval system for all kinds of data and documents required in evaluating operational occurrences and incidents in nuclear power plants worldwide. (**FIG.01**) The basic idea is for all experts involved in the evaluations to be able to quickly gain access to all the necessary data and general information. Users are the experts in the GRS facilities at Garching, Berlin and Cologne and experts in the Federal Ministry for Environmental Protection and Reactor Safety in Bonn. The data in TECDO is accessible through a fulltext search that is applied to each and every document in the information management system. Both character-oriented texts and bit-mapped images are accessible to the user.

In accordance with the German licensing procedure, the most important documents in evaluating any occurrence (**FIG.02**) - aside from detailed technical drawings - are the operating manual, the safety analysis report and the operation commissioning report of the nuclear power plant as well as the system descriptions of safety related systems. It is also important to be informed of any similar prior occurrence in the plant and to quickly have available the safety related nuclear standards and regulatory guides that pertain to the particular case with regard to accident prevention or mitigation.

With these objectives in mind, TECDO today contains some 7000 individual documents and entries. These are primarily the safety analysis reports and important system descriptions of the 22 German nuclear power plants in operation today and the entire BEVOR database which contains the German equivalent of the licensee event reports. Also contained are the fulltext versions of the information notices to the operating organizations by the BMU. With a view to other nations, we've begun to also incorporate the NRC Information Notices and special reports (by DOE and GRS) on the Russian VVER reactor types as well as the so-called Quicklook Reports which are being compiled on every European reactor as a joint effort by the European Community. We are currently working on incorporating the entire textual parts of the operating manual of a German nuclear power plant in TECDO. This is done in close cooperation with the utility concerned which has allowed us to use their word processing data set. A further effort is directed toward incorporating one FSAR of a modern American PWR and BWER, which we expect to incorporate already by the end of this year.

Two other fulltext databases have been created by the GRS. The one contains safety related nuclear standards and regulatory guides and will shortly be

enhanced by the current version of the U.S. 10CFR and the Nuclear Regulatory Guides Div.1. The other database contains the minutes of the German Reactor Safety Commission. It is intended to eventually combine these databases with TECDO in one single information retrieval system.

Hardware and Software Employed in TECDO

The decisions on the hardware and software employed in TECDO date back to the year 1986 when the precursor project INTAB was initiated in light of the Chernobyl catastrophe. The foundation of the current version of TECDO is the Standard Text and Information Retrieval System STAIRS and the Common Picture Library CPL which are both located in the central host computer in Garching (**FIG.03**). In the years since 1986 three LANs (Garching, Berlin and Cologne) have been hooked up to this host through 64KB transmission lines forming a wide area network that also includes one PC workstation at the BMU in Bonn, who originally commissioned this project. The PC workstations actually involved in data production for TECDO are located in Cologne (**FIG.04**). These are, typically, PCs with 386-type processors, a flatbed scanner and suitable OCR/ICR and word processing software. All documents not already available in codified form are scanned and automatically converted to ASCII texts by the OCR/ICR software. (In this context, an individual "document" may contain some 20-30 pages of a chapter or, in the case of images, only this one figure or drawing.) After its conversion, the text is edited with respect to non-ASCII characters (Greek symbols, exponents, suffixes, German umlauts) and with respect to proper formatting, especially of tables. The possibilities of employing makros in modern text processing have greatly helped to reduced the efforts in this tedious procedure. Meantime others are involved in scanning the pictures and drawings and transferring the results to the Image Handling Facility IHF of the host computer which is the intermediary to the CPL. Still other are engaged in preparing the bibliographic data for each document and image. These data are initially entered in a separate database. Typical entries are the type of document and acronym of the power plant, a short descriptive title, the title or chapter heading(s) in its entire length as well as certain descriptors from the specific TECDO descriptor catalog that best describe the contents of the individual document or image. These data are important to the later text search in that one can use them to limit the search to a certain section of the documents contained in TECDO, for instance, to a reactor type or to a specific power plant.

Upon being transferred to STAIRS, the bibliographic data and the codified text are automatically combined to one single item.

Outlook

The development efforts in the near future (**FIG.05**) are primarily directed toward gaining a wider user acceptance. The PC user of today is to much

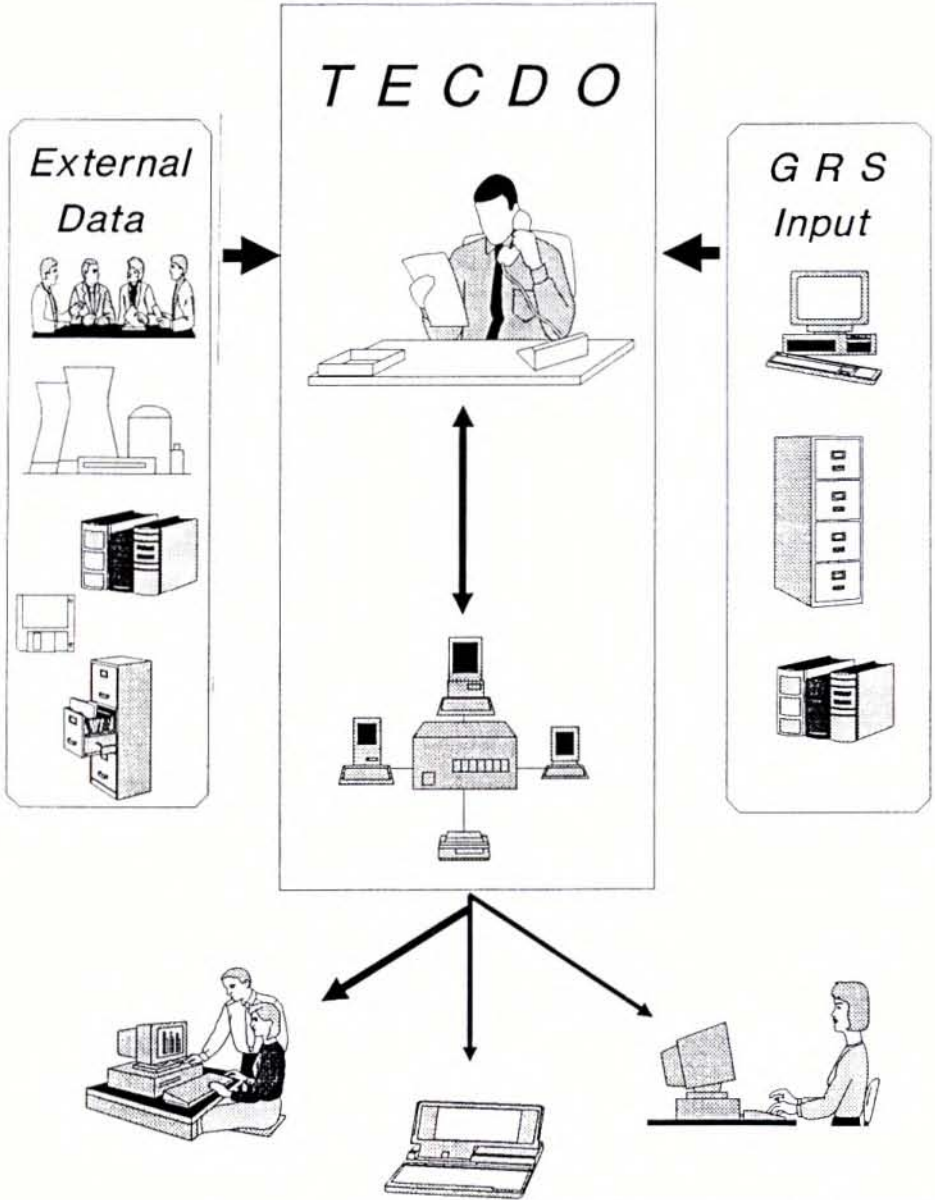
accustomed to being menue-prompted in his search-and-find quest for data that he could be satisfied with the simple dot prompt of the computer aficionado. Since STAIRS in its current version does not allow for any user-programming, we are currently experimenting with two SQL oriented text retrieval and data management systems: BASIS Plus by Information Dimensions and SQL*Fulltext by ORACLE. Both products allow front end programming and the simultaneous access to multiple, even differently structured databases - two essential requirements for being able to achieve a greater user friendliness.

An equally important prerequisite for gaining wider acceptance for TECDO pertains to the image build-up at the user interface. In the current version, the screen content of the image is prepared in the CPL prior to its journey through the network to the screen or local printer - overall a very time consuming process. A considerable reduction of the long lead times can be achieved by replacing the CPL in the host computer by individual image servers in each of the LANs. In this case the images would be stored on identical optical discs at the four locations involved. With this technology, paging through a stack of pictures would become possible. This would then allow storing certain well structured documents, for instance the operating manuals, as image data. Only the table of contents would need to be available as a codified text file to locate the desired sections.

In the future, this index-oriented search shall also be applied to certain codified fulltext documents in TECDO, for instance the uniformly structured German safety analysis reports.

To simplify the search for important data and documents, it is intended for TECDO to also either contain references to other related technical databases or to actually incorporate their data. An example for the latter method is the database BEVOR of which an identical duplicate is already a part of TECDO.

With regard to a more distant future, we are hoping to one day being able to apply expert systems to fully or semi-automatically supply the proper descriptors to each document. With a view to the large number of documents envisioned for TECDO (a complete TECDO set of documents for a single nuclear power plant is estimated to include some 20.000 pages of text and roughly 1.500 images) this automatization will quickly become an important requirement. It is easily seen that with the growing possibilities of transferring data electronically, it is this process of indexing - and not anymore the OCR/ICR and subsequent, time consuming text correction - that will become the defining time factor.



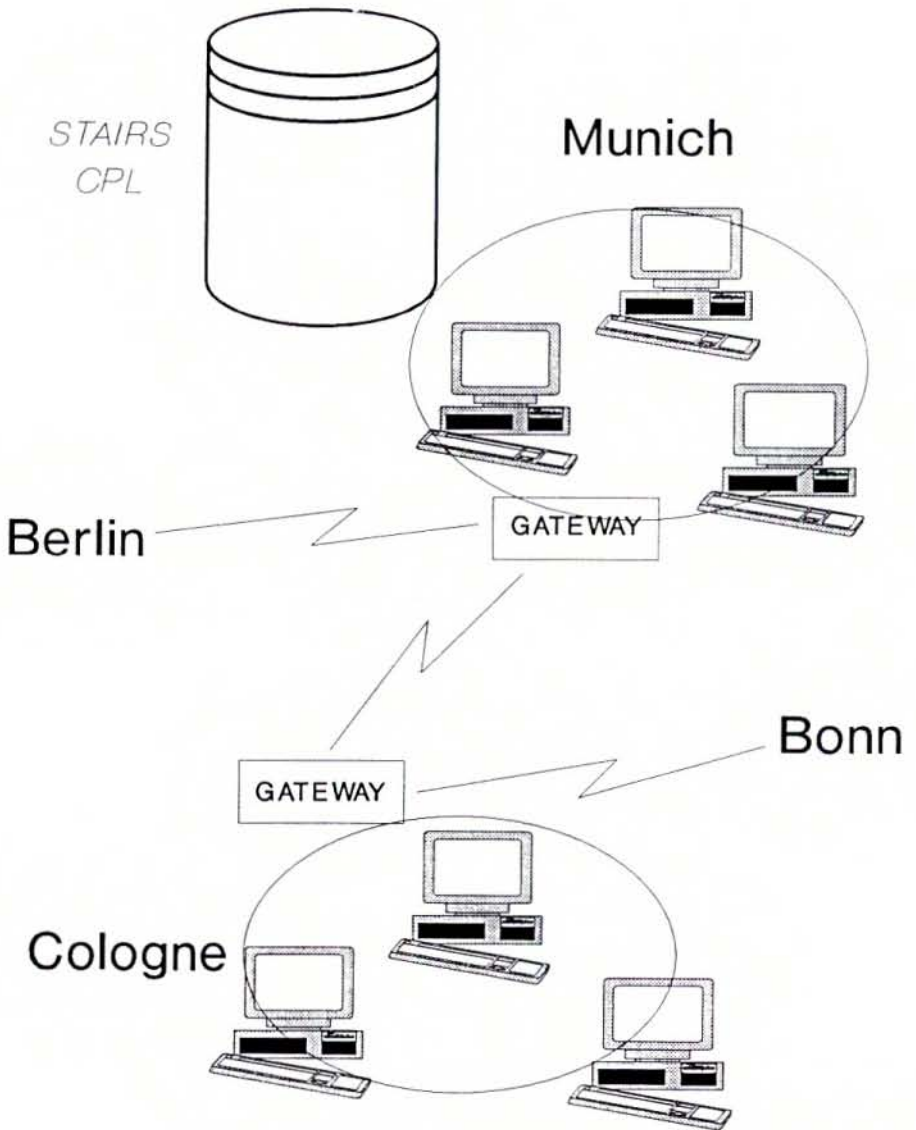
GRS, hpf/rid 10/23/91 FIG01

T E C D O

Fulltext & Image Databases

for technical documents of nuclear power plants

- Operating Manuals
- Safety Analysis Reports
- System Descriptions
- Regulatory Documents
- Licensee Event Reports
- Technical Analyses
- Regulatory Standards and Guidelines
- Safety Commission Proceedings
- Archival Documents (DP, Microforms)



GRS, hpf/rid 10/23/91 FIG03

TECDO PC Workstation

Fujiscan Flatbed
Kurzweil Flatbed
IBM 3118

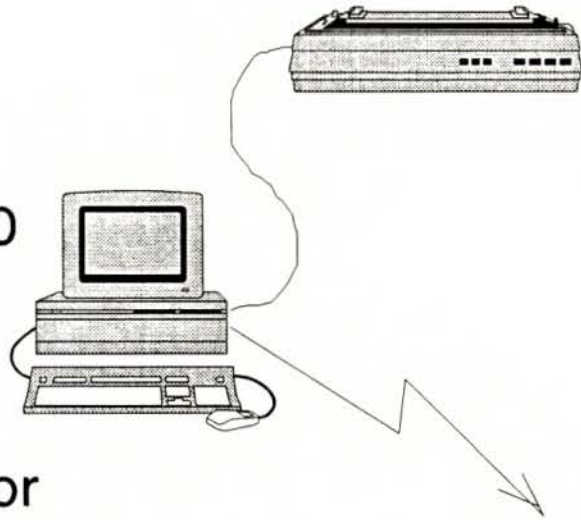
GigaRead

Kurzweil 5200

Readstar

Personal Editor

DisplayWrite 4



TECDO Outlook

- **Hardware Development**

CPL (Host) =====> Image Server (Workstation)

- **Software Development**

STAIRS (Host) =====> BASIS Plus (Host)

Oracle (Workstation)

- **Further Automation of Input**

Thesaurus based Indexing

- **Variety of Search Strategies**

Fulltext

Table of Contents

Image Block

**Information Management Needs of an End User
in a Supreme German Federal Authority**

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Information Management Needs of an End User
in a Supreme German Federal Authority

1. Introduction

This paper is to provide an impression of the information management needs of an end user who is a civil servant with a supreme German federal authority, namely the Federal Ministry for the Environment, Nature Conservation, and Reactor Safety.

These needs are defined primarily by the duties of the authority as the highest licensing and regulatory agency under the German Atomic Energy Act in the field of the peaceful uses of nuclear energy as specified in the German Atomic Energy Act.

This duty implies manifold activities in the management of information, both in-house and external. For this purpose, information technology (IT) is being used on an increasing scale.

The current information management needs will be outlined below in the light of

- the overall IT system under development at the authority,
- past experience with IT procedures and projects,
- further possibilities of integrating IT into day-to-day business, and
- thoughts and proposals related to further improvements.

2. Information Technology at BMU

2.1 Basic IT Concept of BMU

The organizational setup of the Ministry and the activities of the RS Department can be taken from Diagrams 1 to 4.

More use must be made of IT as an

- information and decisionmaking aid,
- instrument of communication,
- administration and scheduling system.

For these purposes an independent administrative unit, Unit Z I 6, established a general IT concept, which is now being put into practice after having passed all necessary examinations, discussions, and tendering procedures.

The overriding principle (in accordance with a decision by the EC Council of December 22, 1986 about standardization in IT and telecommunication) is this:

Ensure that the needs of users are taken into account in allowing them more freedom in setting up their systems by guaranteeing them compatibility and, consequently, higher performance at lower cost.

This means that developing and implementing the IT concept must be based on the specialized technical and administrative activities of the end user.

General objectives of the IT concept:

- Making available a broader, more detailed information base as up to date as possible.
- Making available a set of tools for procuring, screening, and evaluating information required at short notice in the light of the situation at hand.
- Processing information more quickly and in the light of the problems at hand.
- Making efficient use of potentials for rationalization.
- Providing administrative and service functions in a more efficient way.
- More effective cooperation among specialized work, administrative and government activities, and service functions.

- More effective cooperation with other ministries, parliament, the federal states, lower authorities, expert organizations, and the public.

Approaches towards implementation of the IT concept:

- Vendor-independent IT structure resulting from a mixed configuration of UNIX and MS-DOS, respectively.
- * Cost reduction by exploiting the market for advanced standardized hardware and software.
- * Reducing the necessary amount of in-house development.
- * Providing the necessary basic software as a centralized function.
- "Intelligent" communicating terminals at workstations with a standardized user interface.
- * Integration of in-house information structures and integration into external communication networks.
- * In particular, access to external databases.
- Possibilities of restricted local work.
- * Increased protection against failure.
- * Integration of tools in line with specific workstations.
- Cooperative word and data acquisition and processing.
- * No more routine activities.
- * Continuous use of data files created only once.
- * Reduced transport and processing times.
- * More efficient exploitation of the whole range of hardware and software facilities (such as database, calculation, graphic functions).

Duties and responsibilities of users:

- Assistance in building up and operating the system.
- * Integration of existing hardware and software.

- * Training.
 - Identifying defects and possibilities for improvement.
 - Using software in line with the respective agreements.
 - File management, i.e., establishing, managing, clearing and, if applicable, erasing data files specific to a workstation.
 - Passing on results of work and ensuring access to data files established.
 - Meeting the requirements of data protection.
 - Meeting the requirements of the security concept.

System currently under construction:

For the configuration, see Diagram 5.

2.2 IT Methods and Projects

IT methods:

IMIS: Integrated Measurement and Information System of the Federal Office for Radiation Protection for the Surveillance of Environmental Radioactivity.

Early smog warning system: Information system run by the German Federal Environmental Agency to indicate smog conditions (evaluation of measured data about air pollution).

Word acquisition and processing (Word Perfect) by electronic mail.

Data files for secretariat functions, i.e. address management, scheduling, planning ...

Data files on projects, i.e., planning surveys, cost estimates, funds spent, reporting ...

Access to external databases, such as

UMPLIS

DIMDI

JURIS

Statis-Bund, database run by the Federal Office of Statistics

BPA-Dok, documentation system run by the Federal Press Office

GMD, use of databases (FIDAS, PINDAR)

GRS, databases of GRS

RSK, database

Further connections are planned, such as

databases of other ministries,

STN International/FIZ Karlsruhe,

DATA-Star,

LANIS.

IT projects

Data files on the status of regulatory procedures and licenses.

Data files on plant status and plant operation (events).

Nuclear fuel cycle data: waste and valuable materials.

Data files on file management.

Expansion of project data files (data sheets, UFOPLAN, results, findings put into practice, ...).

Data files on international cooperation: agreements, programs of work, deadlines ...

Text modules for inquiries.

3. Requirements and Procedures in the Personal View of an End User

Activities of the end user are associated with the acquisition and use of extensive information.

Screening and processing corresponds to the situation at middle and top management levels, i.e., there is a general lack of time for extensive searches and evaluations. What is needed is value-added information tailored, as far as possible, to the routine duties of the end user. This will be explained in more detail below.

3.1 Information Input

Information for circulation

Press clippings.

Technical and scientific journals.

Reports from other agencies.

Documents from the Federal Parliament and the Federal Council.

Documents from ministries.

Information specific to BMU or the unit in question.

Dates.

Information requested

Regular reports.

Profile services.

Inputs for immediate or later processing,
approx. 2000-5000 annually per unit.

END USER NEEDS

To be relieved of acquisition and provisional evaluation duties.

Possibility of conducting subsequent specific searches.

- Existing in-house or external databases.
- Databases yet to be created.

Acquisition for subsequent (uncertain) access.

Logging and filing by IT, perhaps as a full text, by means of a suitable retrieval system.

3.2 Processing Steps and Results of Work

3.2.1 Fulfilling Specialized Duties in One's Area of Responsibility

Identification of duties and, if necessary, need for action by obtaining, screening and rough evaluation of specialized information:

Previous history, current status, further development, trends.

END USER NEEDS

Survey of suitable sources of information.

Secure, uncomplicated access to suitable sources of information.

Userfriendliness, even if used only sporadically.

Ensuring a sufficient scope and depth of information on the point concerned.

Access to higher-level sources of information.

- Factual databases serving the specific need.
- Information bases containing value-added information.

Processing press releases for the purposes of a specific user; milestones in developments; ...

Support in adequate screening, evaluation, and further use of information.

- Search capability.
- Flexible evaluation routines.
- Direct inclusion into in-house systems.

3.2.2 Initiation and Management of Additional Fact Finding Missions, Studies, Expert Opinions

With other authorities,

---> DP-based communication.

With third parties (free-of-charge or paid use of existing [latent] information),

---> access to external databases or information services.

With clients taking the form of projects,

---> DP-based planning, coordination, preparation of contract awarding, management and observation,

and conversion into concepts and measures of problem analyses, fact finding missions, and findings expressed in expert opinions.

END USER NEEDS

Support in identifying and using suitable sources

- "Database for databases."
- Preparing and presenting existing information sources in a way suiting the end user.

Transfer of information in conformity with the system at hand, i.e., adapted to existing hardware and software, and data systems, respectively, in a form fit for use.

Support in project planning in accordance with

- general requirements specified by the Federal Auditing Court and other authorities (see Flowchart 6).
- Research plan working instruction (UFOPLAN).

Support in project management.

- Job planning and scheduling.
- Preparation of partial results, interim results, and final results as well as dokumentations and databases specific to a project.

Support in the further evaluation and use of the results of a project.

- Conversion into concepts and catalogs of measures (tactical and operative planning).
- Presentation documents suitable for practical implementation.
- Efficiency review.
- Reviewing the execution and inspecting it with a view to feedback and follow-on campaigns, respectively, additions, ...
- Subsequent access to know-how.

3.2.3 Cooperation in, or Execution of, Administrative Duties and Government Duties

Enforcement of the Atomic Energy Act

---> Databases on the status of licensing and supervisory procedures.

Contents of regulatory measures.

Administrative court proceedings.

Court decisions in the enforcement of the Atomic Energy Act.

Further development of legal and technical rules and regulations.

---> Databases on

the current status of technical nuclear codes and specific leading cases;

pro-memoria items and systems of concepts (also with respect to the objects of regulations, because of harmonization) to be used in amendments of laws, rules and regulations issued within certain laws, administrative regulations, guidelines, technical codes.

International cooperation

---> Databases on

basic information about bilateral, multilateral, and international cooperation, programs of work arranged by contents and timetable, contributions to supranational cooperation.

Information to politics and the public.

---> Reporting by evaluating databases in the light of specific subjects.

Public access to databases via Btx etc.

END USER NEEDS

Making optimum use of external information systems and of existing know-how and specific support, respectively, available from other agencies and contractors, respectively.

3.2.4 Presentations to Top Management

Status, evaluation, proposed procedures on

- concepts and programs,
- cabinet documents,
- reports or letters to parliament,
- other specific measures.

END USER NEEDS

The integration of relevant "ambient information" into the appropriate documents should be as easy as possible.

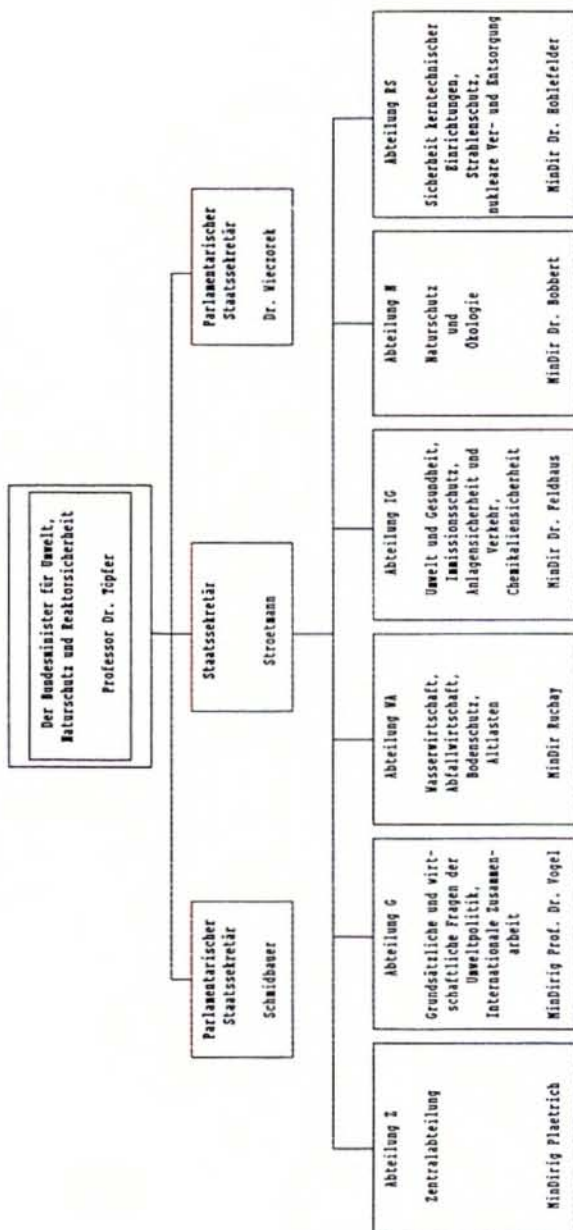
Documents complete with information and proposed outline of discussions for

- meetings of national or international bodies,
- discussions,
- visits on the spot.

END USER NEEDS

Direct access and integration, as simple as possible, of useful background and ambient information.

Organisationsübersicht der Abteilungen
im
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)



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Public access to databases via Btx etc.

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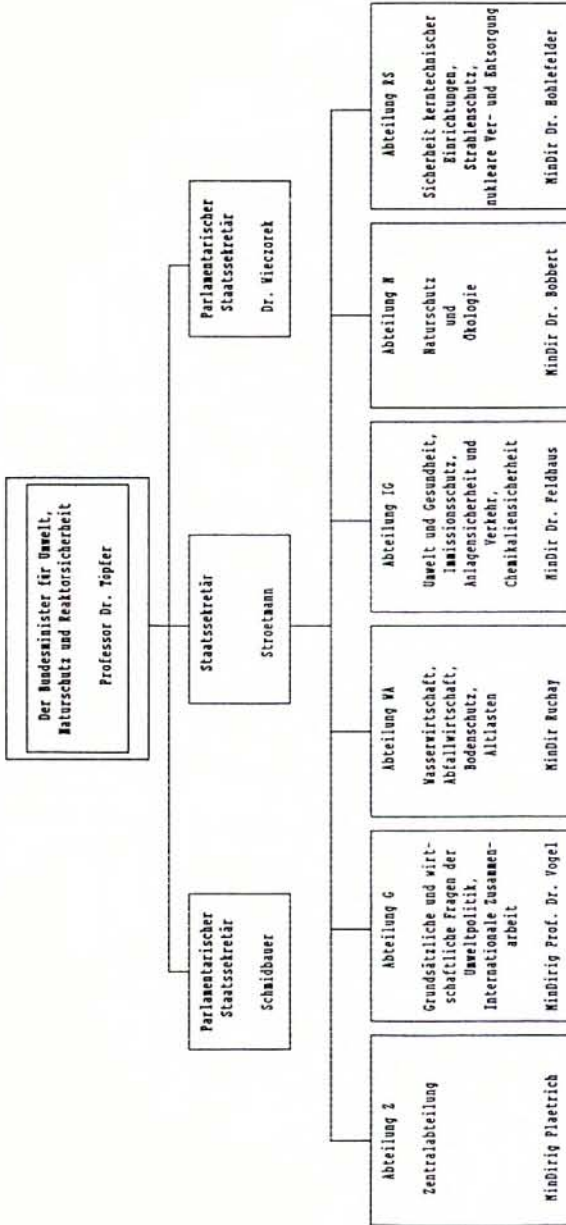
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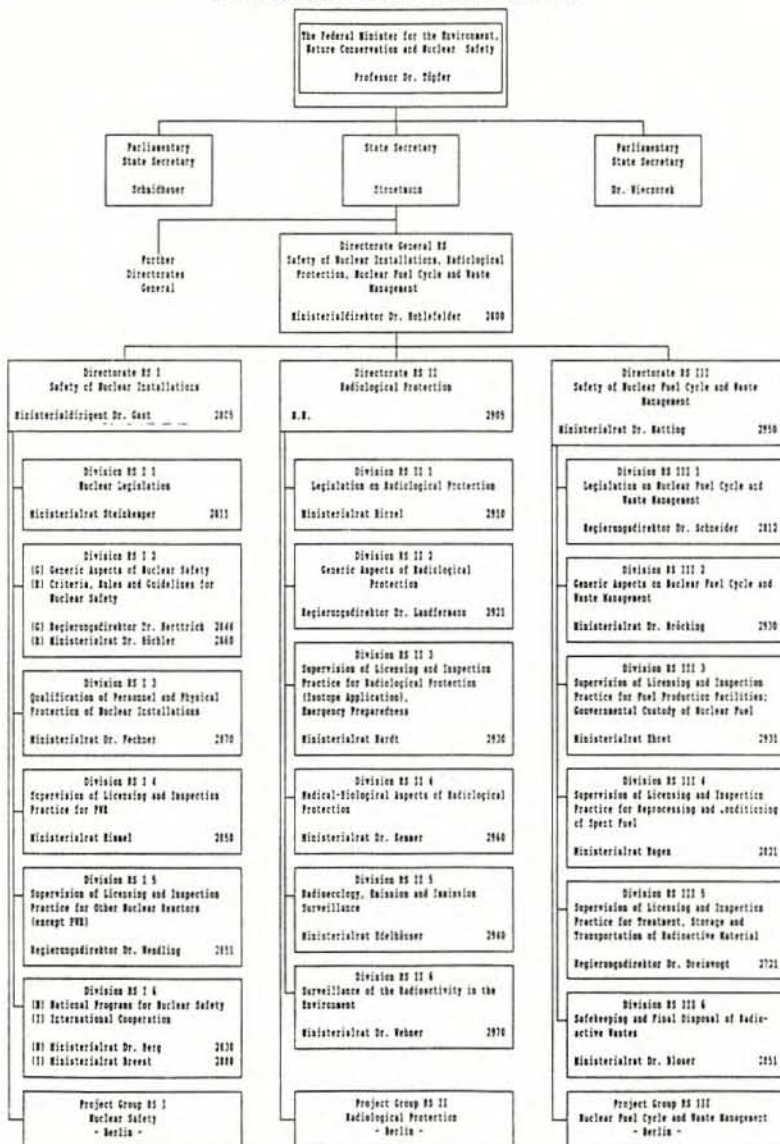
END USER NEEDS

Direct access and integration, as simple as possible, of useful background and ambient information.

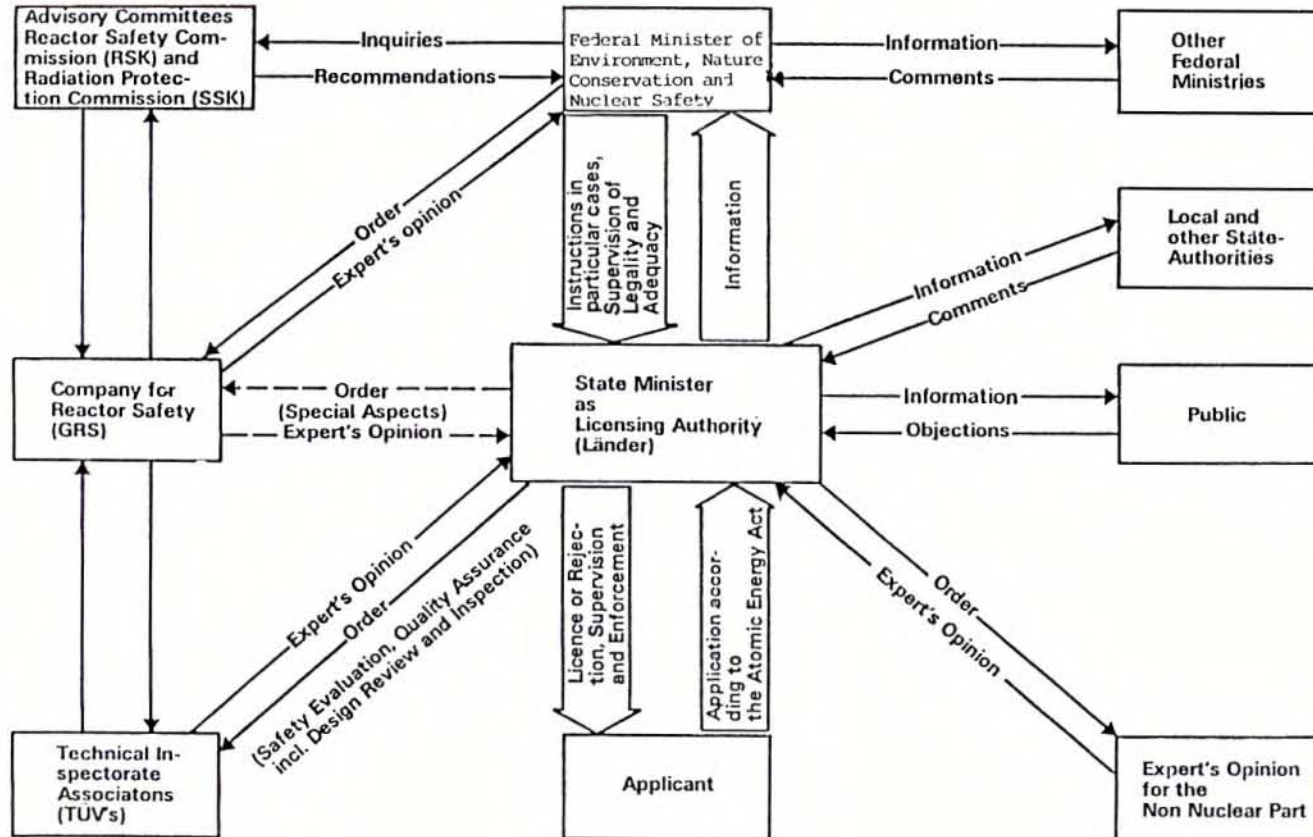
Organisationsübersicht der Abteilungen
im
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU)



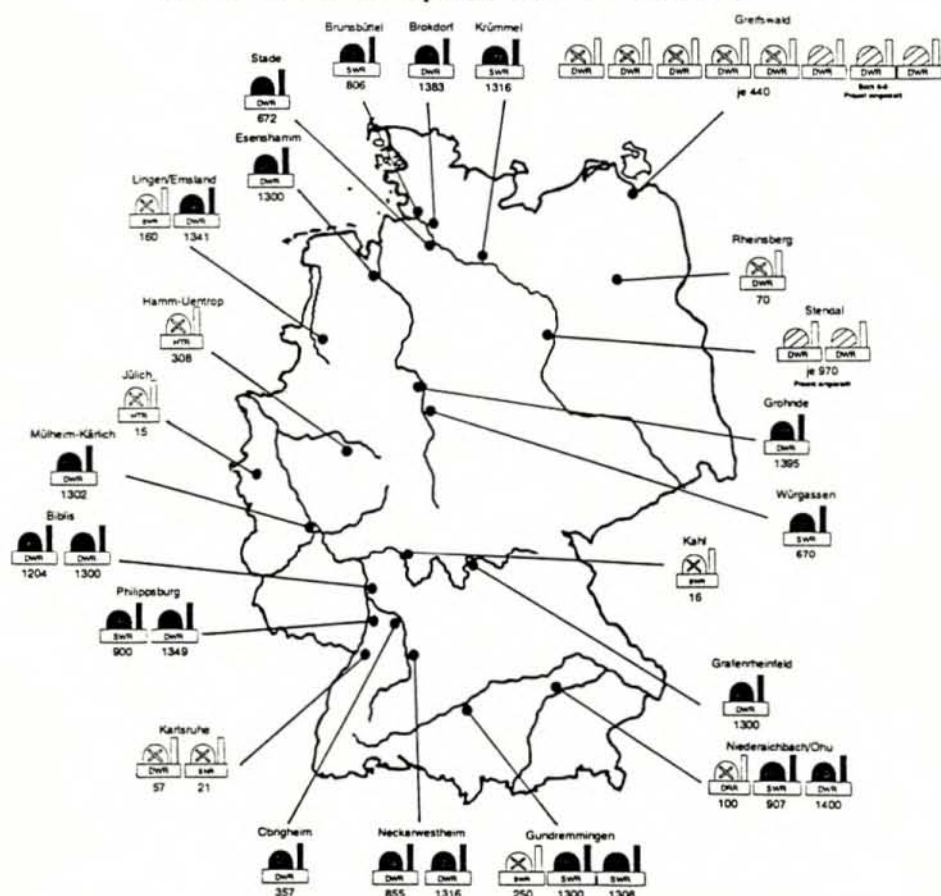
Organisation of the Directorate General NS
in the
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety



Participants, their Responsibilities and Interactions in the Licensing Procedure



Kernkraftwerke in der Bundesrepublik Deutschland



LEGENDE

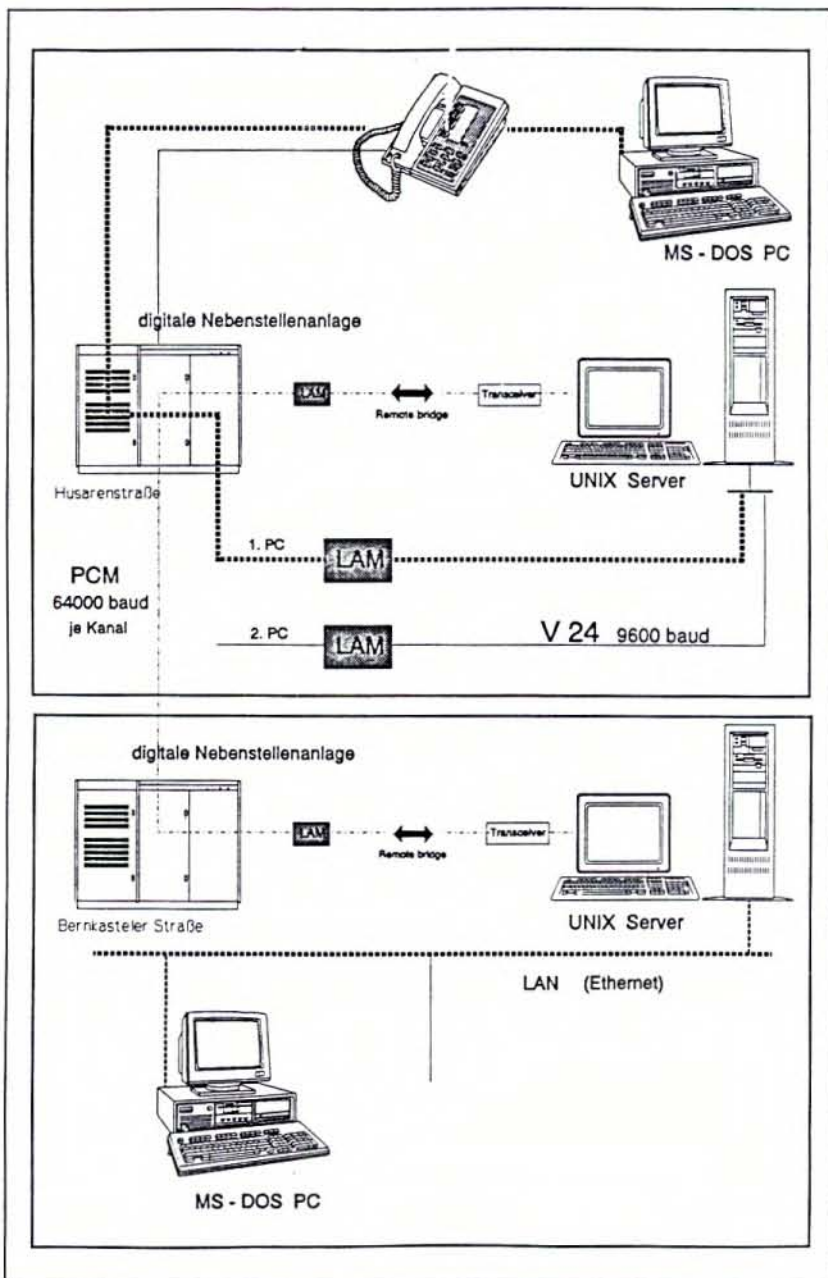
Reaktorart

- DWR Druckwasserreaktor
 SWR Siedewasserreaktor
 SNR Schneller Brutreaktor
 HTA Hochtemperaturreaktor
 DRK Druckrohrreaktor

Status

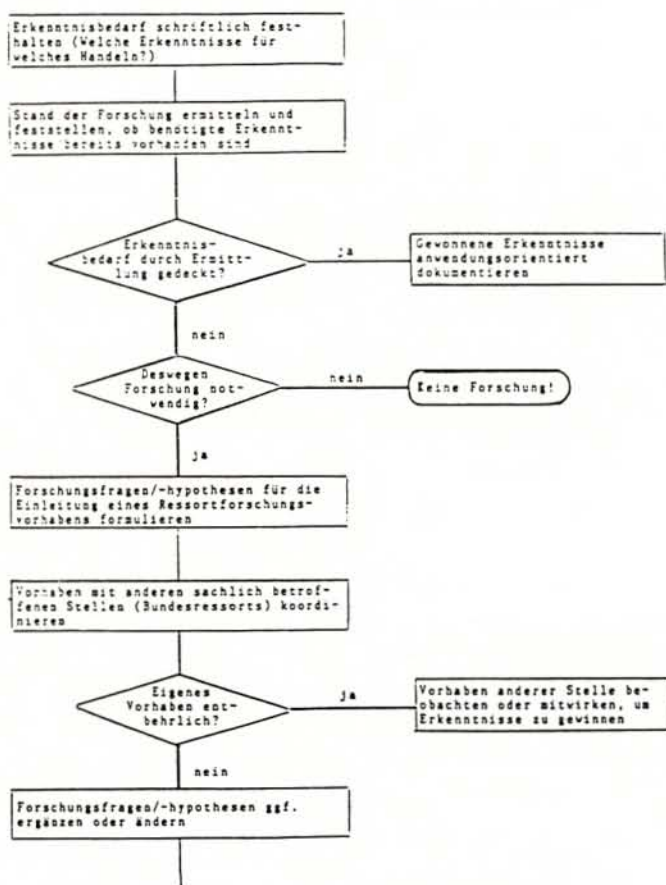
- in Betrieb
 in Bau
 Stilllegung

Zahlenangaben: Bruttoleistung in MW

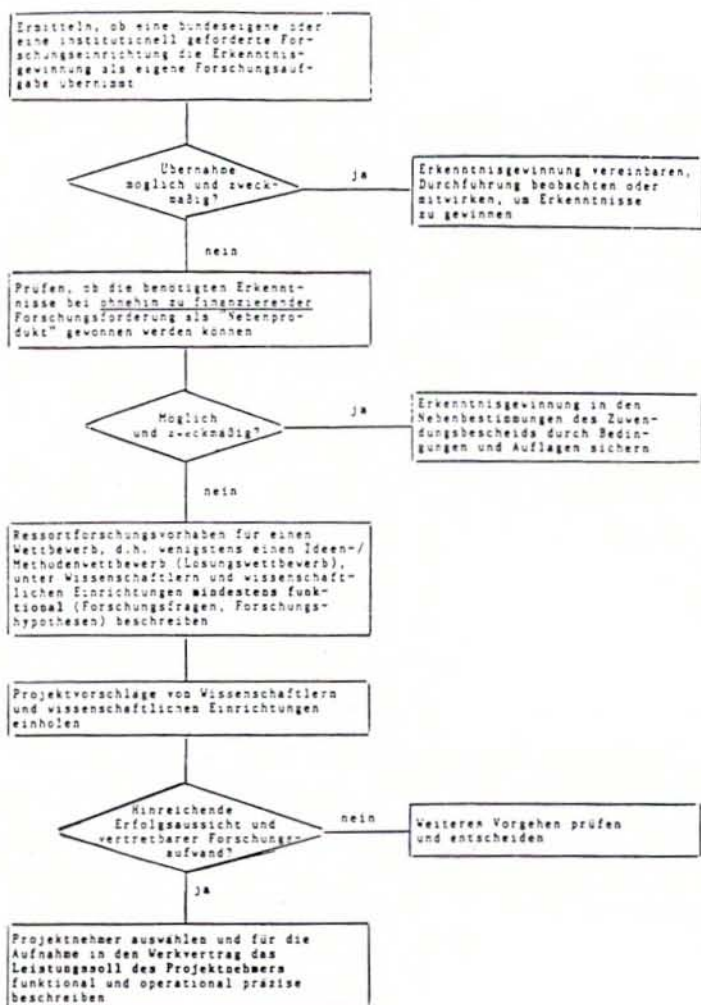


Bundesbeauftragter für Wirtschaftlichkeit
in der Verwaltung

Empfehlung für den Regelfall des Arbeitsablaufs der
inhaltlichen Vorbereitung von Ressortforschungsvorhaben



Fortsetzung Seite 2



Information Management Concept of the BfS
- General Requirements, Nuclear Aspects -

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Information Management Concept of the BfS
 - General requirements, nuclear aspects -

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1. The BfS and its responsibilities

By legal action of the Federal Government, the Bundesamt für Strahlenschutz (BfS - Federal Office of Radiological Protection) was founded in 1989 with its main body being located in Salzgitter. It was at the same time decided to integrate already existing institutions or parts of them into this new Federal Office.

On 1 November 1989, the Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit (BMU - Federal Minister for the Environment, Nature Conservation and Reactor Safety) officially inaugurated the new Federal institution. The BfS is located in Salzgitter and includes sections in Berlin, Bonn, Freiburg and Munich/-Neuherberg. The below listed former facilities constitute the core of the present BfS:

- Department for "Long-Term Storage and Disposal of Radioactive Wastes" of the Federal Institute of Physics and Technology in Braunschweig,
- Institute for Radiation Hygiene of the Federal Health Office in Munich/-Neuherberg and Branch in Berlin,
- Institute for Atmospheric Radioactivity of the Federal Office for Civil Defence, Freiburg,
- Sections of the Reactor Safety Company in Cologne and Munich.

It should be pointed out that in the latter case only the tasks (administration of the Reactor Safety Commission, the Radiation Protection Commission and of the Nuclear Technology Committee) have been transferred to the BfS while in the other cases the tasks and the people concerned with are integrated in the BfS.

Since October 3, 1990, parts of the former National Board for Atomic Safety and Radiation Protection (SAAS) of the GRS, Berlin, belong to the BfS.

The organisational structure of the BfS includes besides the administration department four scientific departments:

- radiation hygiene,
- radiological protection,
- nuclear safety,
- nuclear waste disposal and transport.

All the departments are subdivided in divisions and groups.

More detailed information on the BfS structure is given in Fig. 1.

A new task - not be dealt with by an existing Federal institution - is the nuclear safety covering all kinds of nuclear installations except repositories for radioactive waste. The development of this division is in progress, first support to the BMU on several fields of nuclear safety aspects is given.

The BfS is presently employing about 560 persons, over 35% being scientists.

2. Information management concept

2.1 Necessity of an information management concept and actual plannings

In the BfS, nearly all organisational units use - more or less intensive - information techniques. This covers simple applications like word processing and use of simple dates bank systems up to extensive scientific numerical calculations. The latter ones are possible using a large computer system which should be installed in the planned new building of the BfS, located in Salzgitter.

Due to the variety of work and contacts of BfS as well as the location of the individual BfS-Institutions at the different regional sites and due to the additional distribution

of the institutions to distant buildings, it is necessary to inter-communicate over an effective network system.

According to current planning, the 4 BfS-Sections in Salzgitter, Berlin, Freiburg and Munich/Neuherberg will each be equipped with its own BANYAN-network, which will be inter-coupled via an X.25-server-to-server-connection to a WAN.

The current structural plan for the network foresees the acquisition of 5 servers, whereby 1 server will be located in Freiburg and 3 each in Munich/Neuherberg, Berlin and Salzgitter. One server already exists in Braunschweig.

2.2 General requirements and determination of standards

Due to the kind of foundation of the BfS, the existing information techniques have been very different in the several parts at the beginning. Hence, the necessity of a new unified concept can be subdivided in four levels with respect to e.g. application and capacity:

1. Central computer system,
2. Workstations as decentral units,
3. Personal computer including network in one division,
4. Data transfer between the divisions and with foreign institutions.

In order to ensure an easy exchange of information within the BfS, standard software has been determined like MS-DOS, OS/2 for the operation system of PC's, Unix for the operation system of work stations, Word for word processing, dbase for simple data bank applications and Oracle for more complex data bank applications. Nevertheless, existing software programs can be used.

Concerning the network plannings it should be pointed out that first experiences have already been made with a small BANYAN-network in Braunschweig, connecting 14 PCs located in several divisions. The routine operation of this network is, due to its security and reliability completely satisfactory. Hence, since no significant steps have so far been taken in the already existing institutions, a unique chance to introduce a uniform network system within the overall framework of the Federal Office of Radiation Protection is hereby given.

3. Applications

Due to the frequent exchange of the text material via data carriers, the entire clerical and graphics service has meanwhile been equipped with word processing and desktop-publishing systems as well as graphics systems like HAVARD GRAPHICS. The often very expensive multiple acquisitions of hard- and software for the production of scientific reports, demonstrations and documentations could in future be avoided by the establishment of a network. Furthermore, long and time consuming postal routes between the individual institutions of BfS and between BfS and BMU could be omitted if data transfer via WANS and LANs were possible. Finally, the exchange of documents by a tie-up with other national and international networks would essentially be easier and of particular advantage for the production of mutual research and publications at different institutions.

3.1 Radiation protection

The structure of the departments of radiation hygiene and radiation protection are given in Fig. 2 and Fig. 3.

The department of radiation hygiene is largely concerned with the effect of ionizing and non-ionizing radiation on man. Additionally, the division is developing a nationwide "integrated measurement- and information system for the control of radioactivity in the environment (IMIS)" with the purpose to minimize the radioactive contamination of the population by the early registration of increased radioactivity in various vital areas.

A schematic view of the different institutions connected with IMIS are shown in Fig. 4.

An unproblematic data transfer is, of course, especially important for the communication between Braunschweig, Salzgitter-Immendorf, München and Freiburg and the proposed single networks, since in case of a radiological incident the rapid access to the respective computer system or to the IMIS databank would be required for receiving the latest measurement values. Only by this approach an appropriate assessment of the situation is possible, so that warning procedures can be activated immediately. On the other hand,

rapid information about the situation is necessary also in cases where no increased radioactivity release has been measured as the example "fire in the Chernobyl reactor" in October 1991 has shown.

For scientific reference studies in the fields of radiology, physics, mathematics, chemistry, medicine, meteorology is intended to establish future connections via the network with the reference databanks DIMDI in Cologne and FIZ with its special databank INKA in Karlsruhe.

The department of radiation hygiene in München can use the host computer of the GSF, the department of radiation protection in Berlin the host computer of the Federal Health Office. Hence, more extensive calculations already can be performed until the BfS central computer is installed.

3.2 Final Disposal

Certain matters concerning the nuclear fuel cycle are created by the department of waste management and transport. This includes the construction and operation of federal facilities for long-term storage and disposal of radioactive waste, the distribution of the transport permissions for nuclear fuel material, the permits for storage of nuclear fuel material and large sources, beyond federal custody as well as federal custody of nuclear fuels. The structure of this department is given in Fig. 5.

Concerning the final disposal of radioactive waste, several aspects have to be considered.

Part of the work of this department is to ensure the safety of the planned repositories based on extensive calculations. These calculations are mainly performed by institutions on behalf of the BfS; nevertheless, in the past calculations have been performed as they are needed for the temperature simulation models and controls in salt domes planned to be used for the final disposal of radioactive waste. Calculations of ground water flow in a repository are planned.

The establishment of a network provides BfS with the additional capacity of the host computer at the Federal Institute of Physics and Technology in Braunschweig for those

calculation up to the time when the BfS internal host computer system is established.

Radioactive waste to be disposed of in the planned Konrad repository has to fulfil requirements which result from the analyses of the normal operation, of assumed incidents, of the thermal influence on the host rock and of the criticality safety. These requirements include limits of activity of groups of radionuclides and single radionuclides, which are determined by the properties of the waste packages.

The program-system ANKONA was developed in order to examine the requirements by means of a personal computer. The result of the examination is displayed on the screen and optionally printed.

A part of this program system called NUKONA allows the immediate use of existing data banks containing data of type of waste package, waste form, nuclide-specific and total activity.

Besides these scientific activities, it should be reminded that BfS is the authorized applicant for repositories in the respective licensing procedure. Hence, an appropriate documentation of the relevant studies given to the licensing authority is necessary, in particular with respect to revisions of such documents due to altered plans or further requirements resulting from discussions with the licensing authority and its competent institutions.

Moreover, if a repository goes in operation, a detailed information system has to be installed in order to collect the data of the emplaced waste packages like identification number, packaging and activity inventory including informations on the emplacement room and stacking section where the waste package has been emplaced.

These informations are needed by BfS, Deutsche Gesellschaft zum Bau und Betrieb von Endlagern (German Company for the Construction and Operation of Repositories of Waste) who shall operate the repository on behalf of the BfS and the Quality Control Group executing the quality control of all waste packages prior to their shipment and disposal.

The informations have to be documented and must be continuously available, even at a time after the closure of the repository in order to inform future generations about the waste repository itself and its content.

During the operational phase of a repository, the activity of release via air and effluents are measured at the respective repository and evaluated. Also these information must be provided for a rapid access.

This means that also a rapid communication between the repository and the BfS is necessary, not necessarily on-line.

Nevertheless, in the case of an undesired event in the repository, all necessary informations must be available in due time.

3.3 Nuclear safety

The department of nuclear safety is concerned with the national and international state of the art of science and technology regarding to the development of nuclear safety.

An example for interdisciplinary aspects of nuclear safety is the determination of safety reserves at existent and future nuclear facilities against incidents and accidents with the help of probabilistic safety analyses or with the creation of additional safety reserves by specific modernization measures.

Its further task is the documentation of the facility- and licensing status at each nuclear power plant in Germany and the collection, assessment and documentation of radiological incidents. The appropriate data serve to inform and support the BMU in order to inform the general public and the competent international registration systems.

The nuclear safety department has three divisions where one is located in Berlin and two in Salzgitter. The division at Berlin is concerned with nuclear safety aspects of reactors build by the Sowjetunion and further nuclear facilities in the new federal states.

The structure of the nuclear safety department ist shown in Fig. 6.

Affiliated to the department of nuclear safety is the office of the Nuclear Standards Committee (Kerntechnischer Ausschuß - KTA) the tasks of which are:

- Carrying out KTA duties,
- looking after the KTA subcommittees including technical assistance,
- documentation of the establishment of rules, as well as
- stock-taking and collection of laws, rules, guidelines and norms concerning nuclear technology at home and abroad.

3.3.1 Data banks

As discussed above for other parts of the BfS, also the department of nuclear safety is involved in a lot of administrative and advisory tasks. The BfS is, for instance, at the disposal of the BMU when decisions need to be made on actions required in certain emergency situations. From that, the necessity for a rapid and uncomplicated flow of data and information between the BfS and BMU arises. Moreover, an easy data exchange with other scientific institutions like the Reactor Safety Company (GRS) is important in order to fulfill the tasks.

This data exchange with BMU covers for example statements to be given at international organisations which allows - in contrary to a fax - to make little corrections or additions to a such a statement on the own personal computer.

An important basis for the work within the nuclear safety division is the use of data banks.

First of all is the setting of BfS internal data banks with respect to documentation of the facility and licensing status of the nuclear facilities. This leads in detail to a collection of a lot of safety reports, regulatory comments, changes of the facility status by renewing systems and components of the nuclear facility. For example, many additio-

nal effort has been given to decrease the possibility of a core-melting accident by special technical accident measures like venting. The documentation of all these informations requires a data bank system, although the information itself is mainly given in written form at present time.

Existing data banks concerning these topics should, of course, be used.

Moreover external data bank systems are important for the daily work, but in particular in the case of an incident in a nuclear facility, where the appropriate datas are provided by the Society of Reactor Safety from the collection that is available there (for example INTAB, developed on behalf of the BMU).

Existing reference data banks containing information on nuclear power plant systems and materials used in nuclear technology are planned to be used in BfS. In view of the further data exchange with other institutions the access to external databanks via WANs represents the usual standard.

A rapid information of international news relevant for the nuclear safety division is given by NucNet and the news will be spread within the BfS and to the BMU.

3.3.2 Incident reporting group

An incident reporting group, collecting abnormal events in all kinds of nuclear facilities, evaluating them at a first sight and reporting them to national and international reporting systems shall installed in the BfS and is planned to start its work in 1992. Events which have to be analysed and reported contain for example

- release and discharge of radionuclide material into the environment
- radiation exposure and other important events in terms of radiological protection,
- plant engineering and operating events as well as
- internal or external impacts (e.g. fire, explosion).

In order to fulfil this task, a close connection to the GRS is ensured; in particular, the detailed evaluation of such events shall be performed by the GRS also in the future.

The incident reporting group has in a first step to proof the categorisation of the incident given by the utilities. One basis for such a categorisation is the International Nuclear Events Scale (INES) which has been introduced by the International Atomic Energy Agency for a trial period in order to facilitate communication between the nuclear community, the media and the public on such events. The scale runs from zero, for events with no safety significance, to seven for a major accident (cf. Fig. 4). The evaluation of an abnormal event consist of a narrative description of the event, the plant features relevant for the incident and of the sequence of events leading to the respective one. These steps mainly belong to the evaluation at a first sight in order to react immediately informing the BMU and the public. For this task, other members of the BfS can be involved and also experts of external institutions may be necessary. Hence, the communication and information system must ensure a rapid discussion between the experts.

A deeper safety assessment, root causes and corrective actions as well as lessons learned have to be provided by the GRS.

For the evaluation part of the BfS, the access to internal and external data banks and libraries are necessary and can be ensured by the installed network.

In emergency cases, the telephones are often blocked by inquiring calls from the population, so that the network offers one possibility of rapid communication in order to ensure an effective information system to the benefit of the population in nuclear emergencies.

As a separate reporting system, all security relevant events at nuclear facilities and in connection with the transport of nuclear fuel shall be reported to the BfS in order to evaluate all reports. During the construction phase of the respective working group of the BfS, the security relevant events will be announced to the GRS within a pilot project during one year which allows a first test and first

experiences with this new established system. After that time, the task will be transferred to the BfS.

3.3.3 Nuclear fuel information system

The task of the nuclear fuel information system is to inform the supervising authorities of the Länder according to Atomic Energy Act as well as the Federal Minister for the Environment, Nature Protection and Nuclear Safety in time and in a sufficiently exact way on type and amount of the security relevant nuclear fuels available in the Federal Republic of Germany and on movements of these nuclear fuels between the single nuclear plants or other facilities in which nuclear fuels are handled. This is supposed to improve especially the knowledge and prerequisites for warding off a danger and for measures taken in case nuclear fuel deficiencies are assumed or stated.

In order not to impose additional works on the utilities by operating different systems, the nuclear fuel information system basically uses the data already available as they are collected within the framework of EURATOM-safeguards. The goal is, however, a more short-term information of the nuclear fuel information system compared with the report to EURATOM.

The nuclear fuel information system is centrally operated by the Federal Office for Radiation Protection. It records new and spent fuel assemblies as well as wastes containing nuclear fuels which are not subject to the balancing of fissile material. It is not applied, however, to depleted uranium, uranium ore as well as other radioactive substances.

The reports to BfS are to be made by disk in order to be able to process the data according to dp. The programme necessary for the operation of the nuclear fuel information system is still to be developed which will be carried out on behalf of BfS.

Until this programme is available the reports will be made on paper. During a first test phase starting November 1, 1991, only two nuclear facilities will send the necessary data to BfS.

3.4 Public information

The BfS intends to use the Btx-system in the whole Federal Republic in order to inform the public about the tasks of this federal institution, achieved results in the different divisions, the available material dealing with special topics like radon in houses or non-ionizing radiation as well as to provide notices for journals.

Moreover, an actual information of the public shall be given, in particular on radioactivity measure values provided by the federal measure networks and on special events in nuclear facilities.

The German Btx-program is comparable with the US-system Prodigy; also the North American Presentation layer Protocol Standard ist sinsilar to the Bts presentation standard.

The structure of planned the Btx-program shall be built in such a way that the required information can easily be asked for. In order to reach this aim, the structure is chosen in such a way that the division down to the lowest organisational units can be asked for or a search via catchword can be started. Where it is reasonable, the information shall be illustrated by graphics.

In the beginning, it is planned that an actualisation is monthly performed off-line. Later on, data - for example resulting from IMIS - can be put in automatically.

In order to avoid multiple publications on the same topic and to use the already existing experience, the BfS has contacted a lot of private and governmental institutions.

The first step on the way of participating in the Btx-systems is expected at the end of 1991, mainly describing the tasks of the BfS and more detailed informations on special interesting questions concerning radiation protection and final disposal.

4. Summary

A rapid actualisation and transfer of large numbers of data is necessary, in particular in the case of the BfS which is spread of all parts of Germany. One possible way to achieve is the use of networks; particularly for a surveillance and control system as IMIS, this is a decisive criterion for the evaluation of nuclear accidents and a quick assessment for situations requiring the initiation of immediate warning procedures. The same boundary conditions are valid for the nuclear safety division concerning the collection of incidents, their evaluation based on large data banks within the BfS or in other institutions and the report of these incidents to national and international information systems.

For extensive numerical calculations, the network connection with a large computer system located in Salzgitter is planned; in the meantime, the computer system at the Federal Institute of Physics and Technology in Braunschweig could be used and considerably increases the rate of computation if necessary.

The public information shall be enlarged by participating in the Btx-system.

A further advantage of an information management concept is the use of reference databanks containing information on the various science disciplines of the BfS.

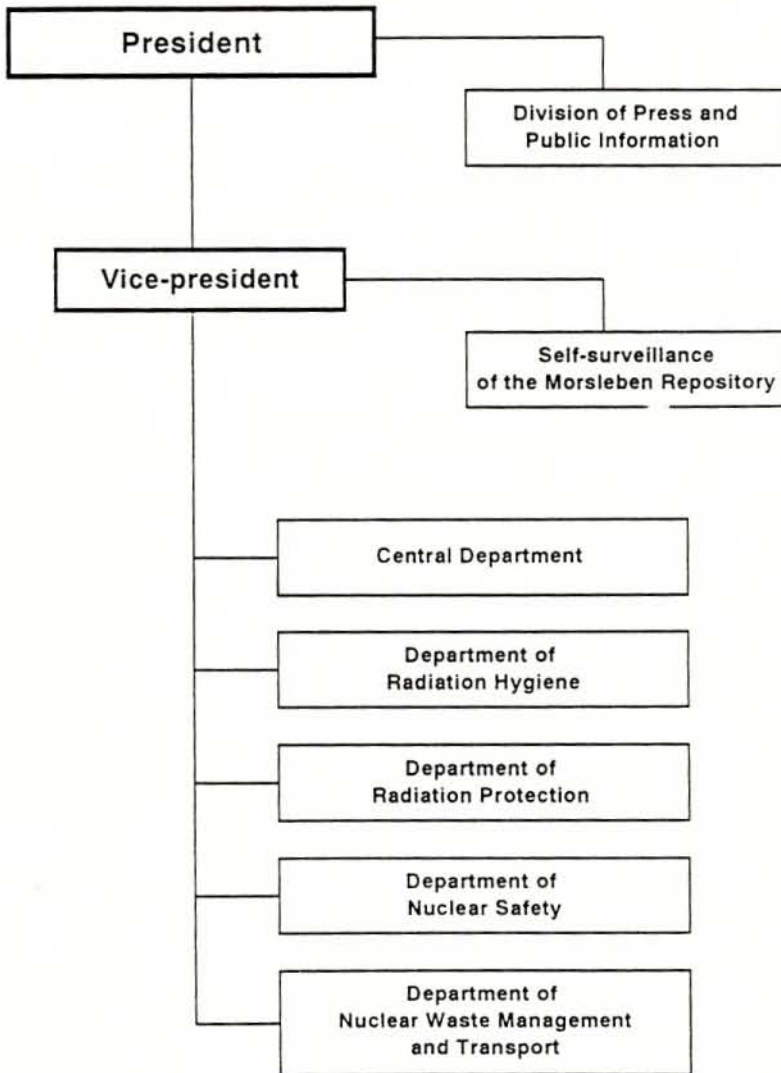


Fig. 1: Structure of the BfS

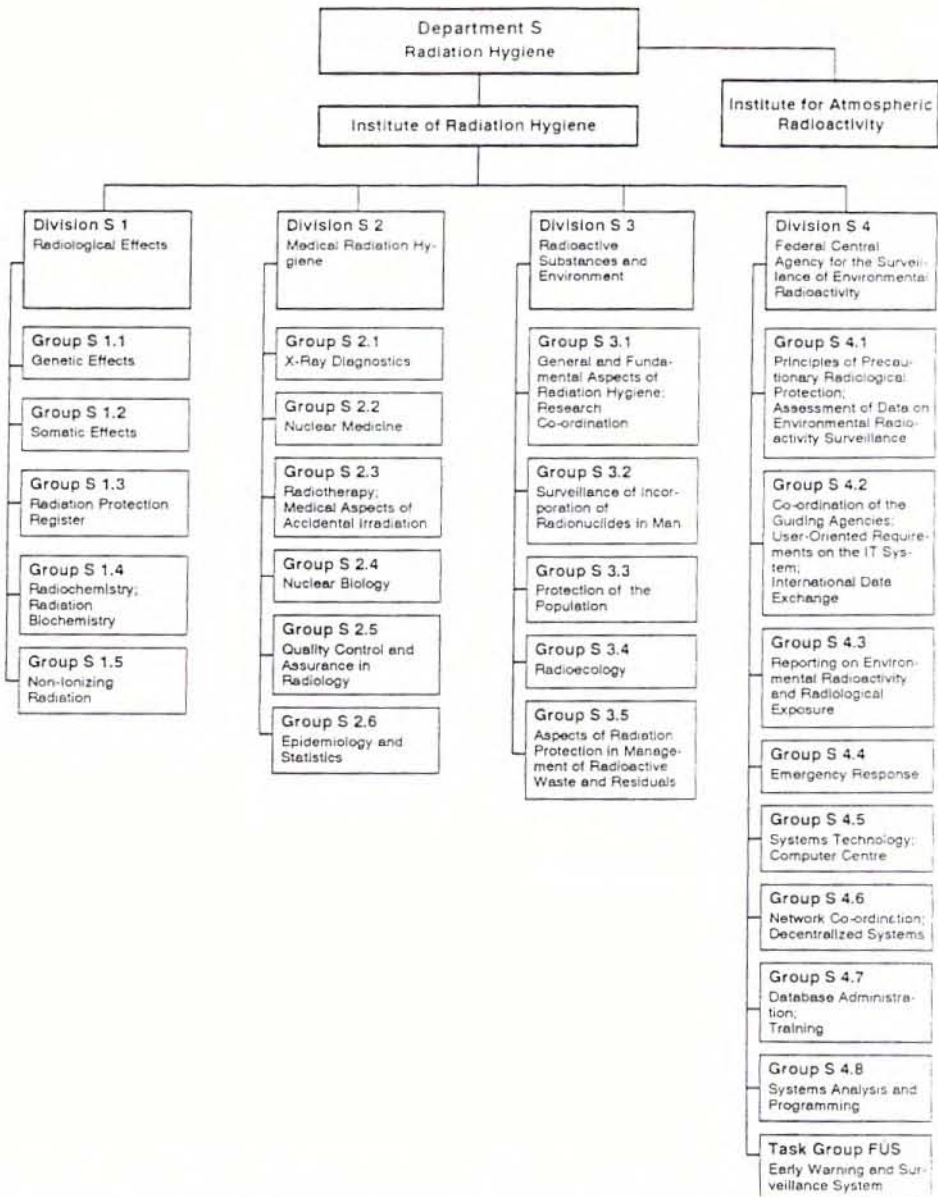


Fig. 2: Structure of the department of radiation hygiene

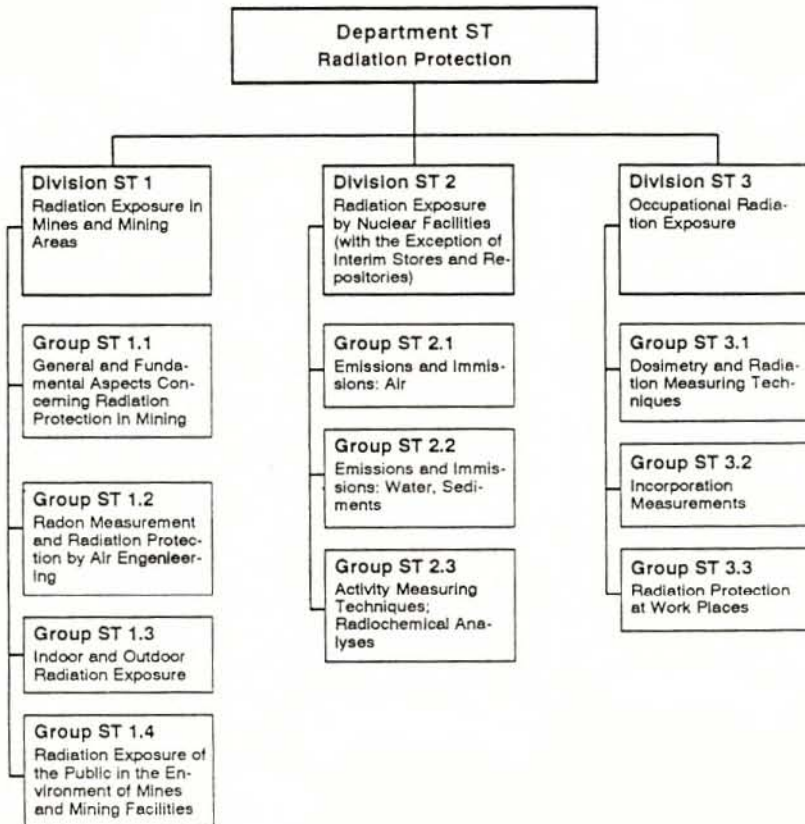


Fig. 3: Structure of the department of radiation protection

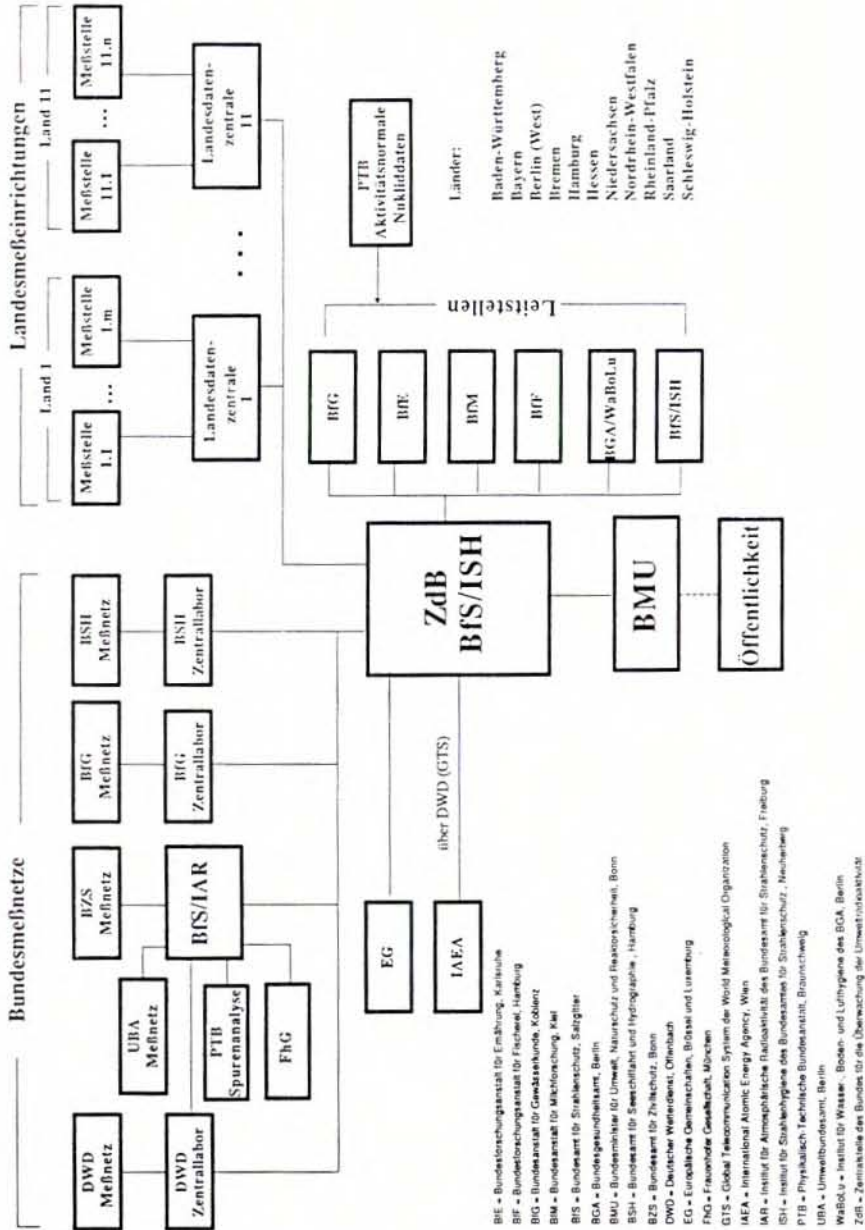


Fig. 4: Schematic view of the different IMIS relevant institutions

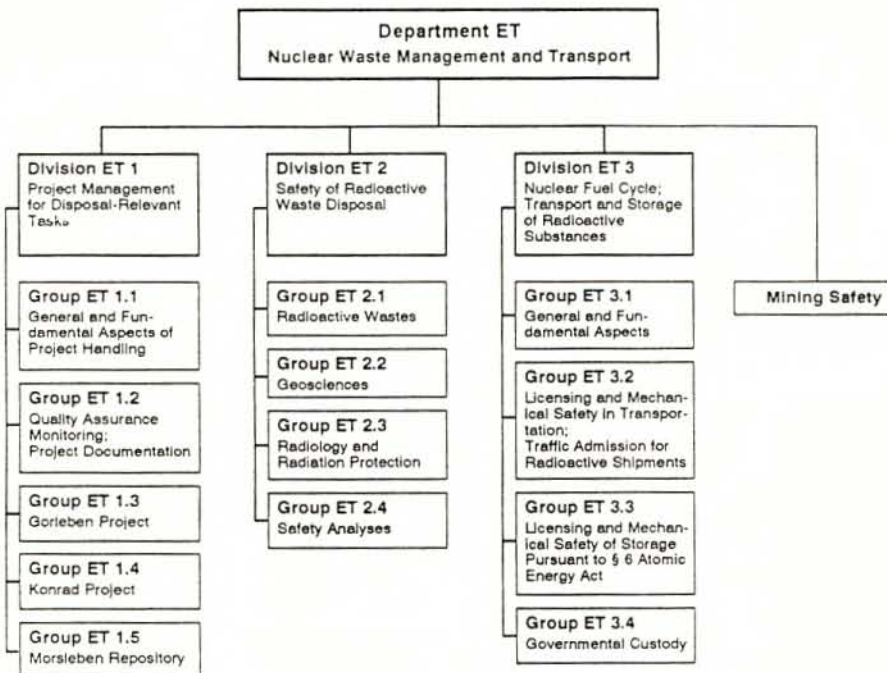


Fig. 5: Structure of the department of waste management and transport

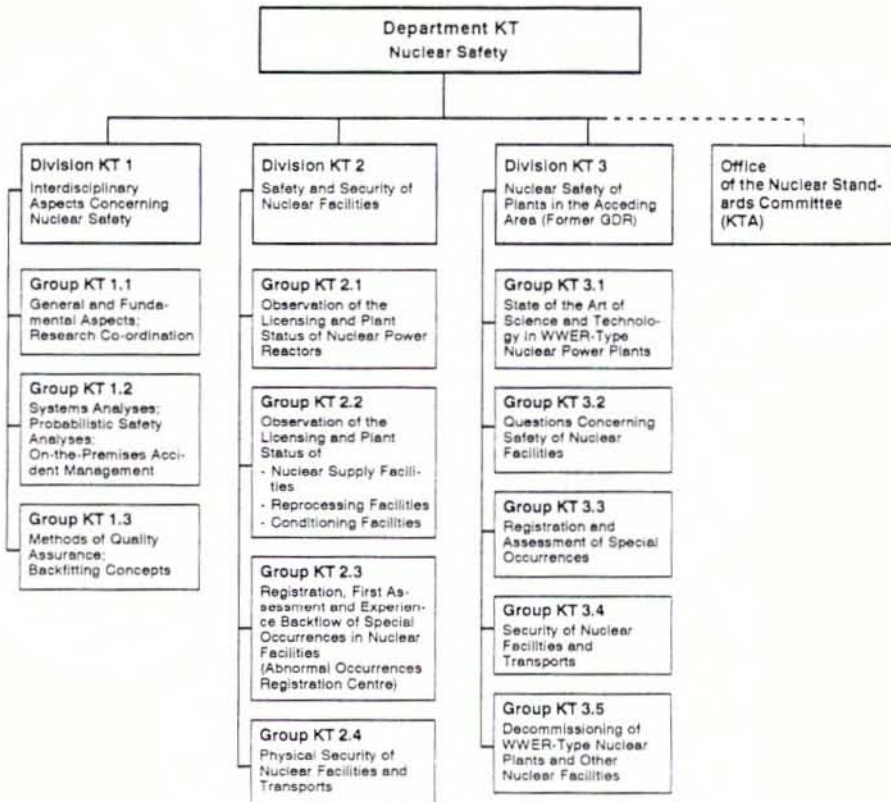


Fig. 6: Structure of the department of nuclear safety

Discussions

(Audio Tape Transcription)

Q: Mrs. Schilling, in principal these databanks are available for anybody, aren't they?

A: Yes, except one exception the "DPA Aktuell", as I explained, then you have to be subscriber of our news services.

Q: Mrs. Schilling, when you are talking about the news services, is that the "Selektionsdienste"?

A: Our German news services are for example the domestic wire, the regional wires, and of course DPA Selektion, the selective service. Actually, any topical news service. DPA distributes some ... information services and they are excluded.

Q: Mrs Schilling, I would like to know from which sources do your informations come which you put into your data bases? How do you determine how reliable your informations are?

A: DPA hat eigene Büros, wir haben in Hamburg unsere Zentrale mit der Basisredaktion, die das Kernstück der DPA überhaupt erstellt, den DPA Basisdienst, den domestic service. Dann haben wir in unseren Ländern, in denen wir Landesdienste haben, eigene Landesdienstbüros mit mehreren Mitarbeitern. Außerdem haben wir mehrere Außenstellen und natürlich auch sehr viele freie Mitarbeiter. Weiterhin arbeitet DPA mit über 60 anderen nationalen Nachrichtenagenturen zusammen. Und wir bekommen natürlich aus allen möglichen Quellen unsere Informationen. Einmal von den eigenen Korrespondenten, das ist natürlich die Hauptquelle, wir bekommen selbstverständlich auch viele Informationen von Unternehmen, von Firmen und v.a. Dingen auch aus dem politischen Bereich. DPA kann nicht alles verbreiten was angeboten wird, und wir wollen das natürlich auch nicht, wir wollen nur die wirklich interessanten Sachen verbreiten. Wir bekommen, glaube ich am Tag 4000 Meldungen angeboten und verbreiten davon ungefähr 1200 Meldungen. Diese Meldungen, je nachdem aus welcher Quelle sie kommen, werden selbstverständlich noch einmal überprüft, gerade bei etwas heikleren Themen. Und manchmal wird Ihnen vielleicht auch auffallen, daß DPA zitiert, das machen wir relativ selten, aber bei der Affäre um Herrn Barschel z.B., als der tot in Genf aufgefunden wurde, kam diese Meldung, die Bild-Zeitung hatte das als erstes, und DPA hatte keine Möglichkeit das anhand von Telefonaten mit den offi-

ziellen Behörden zu verifizieren. Deswegen hat DPA berichtet: Wie aus den Quellen der Bild-Zeitung verlautet, wurde Herr Barschel ermordet, erschossen hieß es glaube ich damals, in der Badewanne aufgefunden. Das konnten wir nicht selber verifizieren. Das war aber natürlich so eine Meldung, an der auch etwas dran sein mußte, sie mußte trotzdem verbreitet werden. In diesem Fall zitiert man dann und sagt damit gleichzeitig, also wir haben es nicht überprüft.

Q: Frau Schilling, Sie haben ja eine sehr hohe Verantwortung, das ist Ihnen ja bewußt. Ich möchte die Frage von Herrn Seidel, die finde ich sehr interessant, mal an einem ganz konkreten Beispiel aus unserer Sicht noch mal etwas erläutern. Es ist ja fast ein alljährliches Spiel, das DPA natürlich eingeht auf die Informationen, die hier von dem Hause Hertrich/BMU verbreitet wird, bis vierteljährlich auch noch ganzjährlich, nämlich die Verbreitung der Zahl der besonderen Vorkommnisse in Kernkraftwerken. Dazu gibt es dann regelmäßig einen sogenannten DPA-Hintergrund. Dort wird dann aufgelistet, was in den letzten Jahren an besonderen Vorkommnissen alles aufgetreten ist und meine Frage geht jetzt auch dahin; werden solche Fachinformationen auch einmal einer fachlichen Überprüfung unterzogen? Denn mein Wissensstand ist der, daß diese Hintergrundinformationen, ich will es mal etwas provozierend sagen, hanebüchen sind. Es wird also nicht unterschieden zwischen einfachen besonderen Vorkommnissen ohne sicherheitstechnische Relevanzen und solchen, die tatsächlich von Bedeutung sind. Das wird im Grunde genommen alles über einen Kamm geschoren, so daß also der Nichtfachmann ein völlig falsches Bild über die Sicherheitssituation bekommt.

A: Diese Hintergründe, die Sie meinen, werden von unserer Archivredaktion erstellt. Die Kollegin, die dafür zuständig ist, die greift auf unterschiedliche offizielle Quellen zurück. Ich kann Ihnen nun wirklich nicht sagen, wie das gerade in Ihrem Falle ist. Ich weiß, daß wenn Sie etwas über eine Katastrophe z.B. erfahren will, sagen wir es ist ein Flugzeug abgestürzt, es hat Tote gegeben, und Sie will das in die Kurzdokumentation, die werden auch da erstellt, mit einbauen, dann ruft unsere Kollegin, die Archivredakteurin, ungefähr fünf offizielle Stellen an und bekommt sieben verschiedene offizielle Antworten. Dann ist es Ihre Aufgabe zu verifizieren, was denn nun stimmt. Das heißt, man muß es ja auch sagen, oft wird gesagt, es gab nur 15 Tote, in Wirklichkeit schweben aber noch zehn in Lebensgefahr, das muß man auch im Hinterkopf

haben, es kann also sein, daß sich eine Woche später diese Zahl entscheidend ändert. Das erfordert eine ganze Menge an Recherchen, viel Arbeit, die da reingesteckt werden muß. Woher es nun kommt, daß die Hintergründe, die Sie schicken bzw. von Herrn Hertrich kommen, nicht, wie Sie jetzt sagen, ordnungsgemäß ausgewertet wird, kann ich Ihnen beim besten Willen nicht beantworten. Ich könnte Ihnen aber sagen, an wen Sie sich in Hamburg wenden können, um das zu erfragen.

Q: Frau Schilling, das Problem ist, daß tatsächlich es viel einfacher ist hier über eine Katastrophe zu berichten, wo ein Schiff untergegangen ist, wo ein Flugzeug abgestürzt ist, als über einen schwierigen typischen Sachverhalt. Und da wird natürlich auch hier das Problem sein, daß die Leute, die das machen vielleicht gar nicht die notwendigen Hintergrundinformationen haben, oder nicht die notwendige Ausbildung. Es ist schwierig, das gebe ich wirklich zu, aber wahrscheinlich liegt es daran.

A: Es gibt bei DPA eine Wissenschaftsredaktion und es gibt natürlich die Basisredaktion. Ich muß Ihnen ehrlich sagen, ich weiß jetzt überhaupt gar nicht, wer diese Sachen schreibt, ob das aus der Wissenschaftsredaktion kommt oder, ob das die Basisredaktion macht. Das kommt sicherlich auch darauf an, woher die Quellen kommen, daß das so ein bißchen aufgeteilt wird. Natürlich ist das schwieriger, und Sie können sich vorstellen, eine Nachrichtenagentur, wir haben 750 Mitarbeiter weltweit, da können wir natürlich auch in unserer Wissenschaftsredaktion nicht für jedes wissenschaftliche Fachgebiet eine Fachkraft haben. Das ist einfach überhaupt gar nicht zu bewältigen. Da muß ich wirklich um Verständnis bitten, daß viele Informationen, die DPA verbreitet, sicherlich nicht so tiefgehen, daß sie wissenschaftlichen Ansprüchen gerecht werden. Sie sind halt wirklich gedacht für den Zeitungsleser.

Q: Frau Schilling, welches sind denn dann die offiziellen Stellen, an die sich DPA wendet? Das ist ja auch sehr sehr schwierig. Es gibt inzwischen ja, beispielsweise bei der GRS oder auch beim Zentrum für Gesundheit und Umwelt Hintergrundinformationen, wo man schwierige, biologische, technische Sachverhalte sozusagen hinterfragen kann. Wenden Sie sich an diese Stellen oder nach welchen Kriterien gehen Sie da vor?

A: Ich muß Ihnen ehrlich sagen, daß ich das so nicht beantworten kann. Ich weiß nicht wie unsere entsprechenden Redakteure vorgehen. Es gibt sicherlich Richtlinien,

an die sie sich zu halten haben, aber sicherlich liegt es auch ein bißchen am Engagement des einzelnen, wie er damit umgeht. Das ist eine Frage, die Sie an die Redaktion stellen müssen. Wie gesagt, ich bin gerne bereit, Ihnen die Ansprechpartner in Hamburg zu nennen. Ich bitte da um Verständnis. Ich selber bin auch keine Journalistin und kann diese Fragen sicherlich nicht so gut beantworten wie sie unser Chefredakteur beispielsweise beantworten würde.

Q: Mr. Brinkmann, is hyperline operating within a database

A: It works in single data bases and I have to point out that it works in single data bases where first of all a thesaurus is available, hyperline applies a thesaurus. Hyperline does not think, does not invent any terms, it applies a thesaurus, it takes the thesaurus as the semantic network to make the semantic associations to the concepts, to the terms asked for and first it needs a thesaurus and second, it needs a good thesaurus. After entering our system hyperline is available. While being prompted for a command you enter HL, without any question. Simply enter hyperline and then you get a help screen, that I did not show here, explaining what hyperline is and giving you two lists. One list is the list of files of databases where the usage of hyperline is suggested by us and the other is the list of databases by the use of hyperline is possible, because the thesaurus is available.

Q: Mr. Roboz, how many people are working in your Information Center?

A: Three professional intermediaries plus one administrative and two assistants in the section.

Q: Mr. Roboz, what I am missing are informations concerning Eastern European databases. You know that there are a lot of self-nominated German experts in Eastern databases in the discussion today. They tell us that in Eastern Europe there are a lot of scientific databases which are of great interest to the world-wide information community. Seeing your paper now, you don't even say a word about these sources which we arrogantly don't use.

A: Well, can I be very frank? Well, there is no such a database. I haven't come across any eastern produced real database, that is the answer of your question. And that is

the things put out frankly.

All who speak about Eastern databases should come to me and I will ask them: "Where are those?" There is none at the moment.

Q: Mr. Roboz, but there are a lot of people going up and down Western Europe who tells us that we are arrogant and that we should use these databases. It is very interesting to see this point of view.

A: Well, but Hungarian databases of course, I'm almost sure that there is no one. Maybe there are some Czechoslovakian or Polish or Bulgarian or Soviet or Russian databases, which I don't know about. I have never used them and I have never seen one of them but I'm sure that there are no Hungarian databases which is for any use, there are some local of course medical and patent databases for internal use but which are used for the public, I don't know any of them.

Q: Dr. Miller, how is the acceptance of your system in Karlsruhe?

A: We have a very high acceptance. We do a lot of courses, each year about 60 people for our catalogue searches and we have good success. We think we can stop offering the card-files soon because the usage of our information system is growing rapidly.

Q: Mr. Miller, how does the technical support work?

A: For the floppy-disc and for the compact disc service we do the job. And other job for the main frame is managed by the central data processing unit.

Q: Mrs. Reich, do you import the ISI data into your LARS system?

A: No, it's a special service from ISI, Institute for Scientific Information in Philadelphia. These informations are delivered on discette and you get the data every week. It is installed with the special ISI retrieval system into our LAN so that the user uses the retrieval software and the data of ISI.

Q: Mrs. Reich, how does that work? You have the system where the last databases can be selected. And in this system you have the number n which brings the user to the ISI databases and that can work with a retrieval system or is it integrated?

A: No, that's a separated service. On one hand you have the LARS database system with the database's catalogue and publications etc., on the other side you have Current Contents and ISI retrieval software.

Q: Mrs. Reich, that is accepted by the end users?

A: Yes, because we are supporting our end users, our library users in handling these two kinds of software and also in data conversion and that's what they really want and that's what we offer them and give them.

Q: Mrs. Reich, I think it's also very interesting that you said you offer software and support. I think that is for very unnormal way of access for special library to say we have private files and software systems and we want to give you a hotline.

A: I intend to change the colour of this telephone, it might be red, because on some days it never stops ringing.

Q: Mrs. Reich, is that a good sign or a bad sign?

A: It depends on the services of our operating centre. Some days the LAN does not work. It does not want to work. Nobody knows why and then the users ask me, but that's not my job and I think the more important fact the consultancy in handling bibliographic information and that's what the people need and what they get from us.

Q: Mr. Watermeyer, what is the reason the online searchers have preceded?

A: Because the year is not over.

Q: Mr. Watermeyer, how many persons are involved in indexing in GRS-luD?

A: At the moment it is the job of only one person. Because we have learned that this is a better way. If you let two persons describe a document I'm sure everybody will describe this document in another way. If one man does this work, it's the best way.

Q: Dr. Latek, as far as I understand the Polish situation there is a discrepancy between the facts. In Poland you said you have at the time no nuclear energy and perhaps there will some nuclear energy development in the future. What are the main objectives of your education program for you have no real experiences with nuclear energy?

A: Not only, of course as I said, radiation protection but it's rather education information also but mainly corporation with some scientific institutions and some doctors. In this energy question for us now we trying to present and also myself I published some articles about relation energy and environment and different sources of energy and consequences for environment for health.

Q: Dr. Latek, how is the knowledge in the scientific community in Poland and maybe also in a broader community about information systems? Do you use systems like IN-IS and other database or maybe even Polish products on this sector?

A: It's of course a broad problem and just we have heard a relation from my Hungarian colleague. We can say such a way, we have a centre, information centre for energy questions, but it is in ministry of industry and they corporated with agency (IAEA) and of course they have this cooperation and use INIS and similar sources.

Generally I can say that even in such a poor country like Poland especially personal computers are very popular. I can say some times it was strange that so many were in private use even before our country was opened. One system of customer, bought privately from Taiwan, from South Korea, many such personal computer were imported. So we have a equipment may be quite good but the problem is with software. I know that is some also example that we is imported and bought in these countries. But I know there were also PC smuggled to Poland but of course not for official uses. So generally speaking for instance in my office where we only now established such a small system for using of some 80 person working in this office but in some institution and some private it's a very nice development now and it's a good tendency. In go-

vernment it's a very bad situation because maybe you know we have a now a very serious budget crisis.

Q: Dr. Pavlov, our problem is usually the data-communication to the Eastern European countries. Dr. W. Klotzbücher from the Max-Planck-Gesellschaft für Strahlenchemie in Mülheim/Ruhr says this is a communication line to the Soviet Union which works. We all have problems with fax and telephone and he has contact with IAS and they are using this mailbox time without problems.

A: As far as I know Dr. Lanckenau from Karlsruhe has access to IAS. I had some discussions recently with Dr. Smirnow in Moscow and I think Karlsruhe has an address and they call of this system in Moscow.

Q: Dr. Pavlov, do you think that your information bases may be opened to western countries via IAS in near future?

A: Yes, yes I hope so. I hope so.

Q: Dr. Pavlov, are there other projects of data-communications which we should know about?

A: There is another way in Moscow to use the springnet joint venture system, Soviet-American enterprise in Moscow which use some satellite and telephone channels or telecommunication service. And so we have two organisations now which provide a telecommunication service, in Moscow sprinknet and the Institute of Automated Systems (IAS).

Final Discussion of the first day:

"Users are used to certain working surfaces, so I think the Sherlock system is really something that is very attractive. Is it possible to define such interfaces between the suppliers of databanks and the user so that these interfaces also adapt to the system they use, e.g. can this system be put in the framework of a Window's application? So one can start and use what you have retrieved and integrated in your word processing"?

"I can try to answer on this question. There are many reasons and you are completely right to complain the situation concerning retrieval language commands. This is a problem that should be discussed at international standard organizations. The reason for different command languages is historically. Host started at different times, they all made their own syntax for retrieval language and now we have the situation which is very difficult for this online searcher who have to use several hosts, two or more hosts. They have really problems. STN has a very comparable syntax to the language of dialogue. That was a decision concerning this problem. Therefore messenger has nearly the same syntax. That means a person who is used to search DIALOG will be able to search STN, too. Another point of the problem is as follows; there are different features in the different languages. That means STN has retrieval features, not available at DIALOG and DIALOG has features not available at STN. That depends on the development of the command language. Every year there are several, nearly 5 to 10 features new at STN and I think "Fitztechnik" has a comparable situation. But I cannot answer for "Fitztechnik" here."

"What I want to say before the host organizations brought their aspects. There are already a number of products in the market which give the end user the possibility to have some kind of menu-driven system which translates retrieval languages. We saw one product which DPA is using. It is being produced by Software House and I think they can translate the main languages, like STN, DIALOG, Data-Star/FIZ-Technik, ESA/IRS or even GOLEM.

"I think for this kind of users you would not lose too much. Perhaps for scientific applications, you will lose some of the specific software retrieval language. But in the area where we operate I think it would be adequate and I think it would be easier to have the access to what is already existing instead of inventing it again. And at the end I think even these translation programs between existing retrieval languages and user-friendly surfaces. This process will go on and will improve, so that after some time even the unified surface will be able to, if steps are taken for that. But that is the main point."

"I'm quite sceptical about this point because I'm an informer. And my experience is, you will deal with a lot of different retrieval languages for the next 10, or 12 or 15 years at least. The other point is that the development of intelligent interfaces on the

hosts is a quite interesting theme for us, because as for instance hyperline as one application of an intelligent interface or the development taken by "DIMDI" with the GRIPS retrieval language and menu-driven surface on the host itself as could be seen on "ECHO" for instance, if you would try it. There you can see how even on a host system you can implement an intelligent interface helping normal users getting good results and for instance I'm not a specialist in medicine when I have to deal with problems in medicine I rely heavily on the "DIMDI" user interface which is menu-driven, I type in my German or even if I got them the English terms and get a big aid in retrieving the correct information, specifically for the medical information. They are working to implement this on other databases and I think other house will do as well. I know for instance "Data Star" which has its focus services, "Sherlock" with its medical and business connections and so on. I think "FIZ Technik" is thinking about it as I heard some weeks ago."

"What about your own databanks?"

"The German parliament has now two databanks which are implemented nowadays on the retrieval system and my colleagues and my own department are working on a user interface menu-driven, and I think it's quite good for this special application."

"I think user friendliness it is not only a matter of languages as Mr Lankenau puts out. It is a matter of features. Each host has different features and there is no interface and no software which translates the specific features to each other. For instance IRS has the cluster feature and the zoom feature. Messenger has other specific features DIALOG has another features, e.g. one search which is again an optimum to some feature. It is impossible to translate them to each other even if they are in same retrieval languages. And I think the most costly thing is to lose information and to use the databases and the telecommunication facilities non-effectively.

So the solution is the good intermediary. You cannot automate any human brainwork I think and this is a situation where it is impossible."

"In certain institutions it is almost impossible to staff up to an intermediary. But it may be possible to get up to a database and then you want to get the answers or some answers at least. Some answers are often sufficient for the moment, then you can go

to an intermediary, maybe the GRS or the different organizations to get your precise answer within a couple of days. But within a couple of hours you need quick answers."

"Users come to me and ask for some information about the project they are working on. And then I say o.k., we can search in online databases and we can find bibliographic information, we can find factual information about toxicologic data or chemicals or so on. And then they think o.k., my dissertation, it's complete. You only get the facts. It does not matter if it is a bibliographic data or a factual data. You get facts from databases and not your conclusion, not your decision. That is only the basis you can decide on."

"I think the problem which is discussed mainly in West-Germany about the retrieval languages is an academic problem which was built up in Germany when online searching came up. Retrieval language is no problem from my part of view. It was just put into the discussion by people who at the end of the seventies had a terminal in their office and said in free German "I can computer". They put a cloud about retrieval languages. The problem we have is not the language, it is the philosophy of databases. The end user who needs information from several databases will be in a jungle in a host. And this is the problem where the end user should have products like sherlock. There are some 5000 databases in the world. We have in GRS I think 2000 databases online. Searching an environmental problem you must have a bright spectrum of databases. I remember the days after the accident of Chernobyl. The first informations we found were located in Chemical Abstracts and INSPEC not in INIS not in the German ENERGY database. After a catastrophical nuclear problem, you did not find early informations in the nuclear databases. These are inputing problems which should be known by an intermediary or by a person who works with the system. There are big systems, there are reliable systems, there are systems where the input is quicker, there are systems where the input is slower. These are the problems, not the retrieval logics or things like that, which were problems of the seventies and not of these days"

We are searching 1060 searchers in the year on 15 hosts on 158 different databases. We perfectly know each database, we know that e.g. this database is better loaded on this host, that if you want to search such item, if you want to search by author names or by titles or in your original language or on keywords or in free text you must go the-

re or there or there. But we do not call us broker. It was a misunderstanding when I told you brokers are always costly. I can't tell you why search that we do in our organization is half or even three times less expensive than if we had given it outside to be done by a broker. Sometimes you have also problems of language, perhaps less in Germany than in France, but I'm not sure. There are now very interesting developments allowing you to search in your own language in a database which is not in the same language. There is a project in the EEC on multilingual and linguistic approaches of such software and we are developing one of those software using natural language search systems which is called ESPRIT and we can search both in English, German and French with natural language. That means, you put your ... in French e.g. and it is translated in English if you look in a full text database in English or it is translated into German if you look in a database which is in German. And you do not miss too much information about it."

"I think this discussion relies too much on information, intermediaries dealing with information in online databases. Every day I'm talking to my users, we not only have online databases, we have conventional media also like books, like journals, like experts, persons who know something about the topic you search for. And that is more the task of an information intermediary not to say oh yes we have some databases for environmental purposes. No, we have, here in our research centre, there are two or three experts who are dealing with this topic. Or we have some books and journals and look also for this information, too."

October, 31:

Q: Mr. Behr, does the system show you on which stages changes the data and results?

A: For example, when you take a fault tree in a component specification and you want to save it in a data base this procedure leads a program to prove on which other pages lies information which is directly related to a component specification and you get a new window where is written you have ordered this component specification of component "XYZ". That means the component "XYZ" on page "n" has to be ordered too, the component on page "XY" has to be ordered too, and in these and these fault trees have to be changes too.

Q: Mr. Behr, do you have to make the changes yourself or do they run automatically?

A: No, the program makes the changes automatically, fully automatically, but it gives you a hint which changes have to be made, because it cannot make them without you.

Q: Mr. Behr, for checking?

A: For checks, yes.

Q: Mr. Behr, and it shows you where you have to make changes?

A: Yes, where you have to do changes and afterwards when say yes, I want to have some changes, it makes them.

Q: Mr. de Kemp, how are you dealing with the librarian to their problems?

A: Well, we are talking to them and they are talking to us and this is I think a very basic start. We are explaining the policy problems for instance we can never sell the COMDATA data base from England to libraries, the COMDATA does not allow it. The different worlds are not integrated into new products. The world of On-Line information, the world of magnetic tape services, the world of printed books, the world of scientific journals are now moving into the area of other media and that is especially librarians, special librarians or university librarians or institute librarians do not always understand or even appreciate the rather difficult circumstances, which have to work. And there is a permanent commission now in Germany about new media the group of the German library institute in Berlin that is now looking into this matter. They are now officially starting to make recommendations to publishers in Germany and else where to follow their rules. I think that is the horse behind the carriage and not the horse in front of the carriage.

Q: Mr. de Kemp, where do you see the pricing policy run? Do you see prices under 10000 DM for the Dangerous Goods CD?

A: No, that is 15,300 DM per year including a VAT and concludes seven data bases. That is the problem. There are seven data bases on it. You are not forced to licence

all seven data bases. The cheapest version is 4,300 DM per year. The complete version is 15,000 a year. That might be new to everybody. So in seven combinations of data bases that you can subscribe to, if you have a three year licence and you take an advance, we give you a discount of about 25 %. If you subscribe to a period of five years you take an advance which a lot of governmental institutions are doing, up to an include of the "Feuerwehr" brigade here in Munich there you got 50 % of discounts. The problem that we have over there is that we have to pay a large sum to other data bases suppliers, for instance we paid for COMDATA we might ... come save which we are producing next year, on behalf of DECHEMA in Frankfurt. For COMDATA we have pay almost 200,000 DM per year for the licence. And there is no other way to get it. We pay a lot of money to the Swiss fire brigade to get their data bases. MERCK for instance has given their data bases for free. And that is why we could ... MERCK without any further building or information to our customers. So that is an example for where we are coming from the magnetic tape supply environments and we are moving into CD-ROM. And that is where we have extremely difficult communication problems, because we have to explain it all the time. The dangerous good CD-ROM is something you could not buy and it has a lot to do also with reliability with up to legal requirements. If somebody is using an old dangerous good CD-ROM with descriptions of substances out of '87 that is legally out of dates and we are not even forced by law to always provide the latest legal details, the latest international classifications, the latest international requirements and that is why we never, never ever will sell that information. The current fact CD-ROM for Balstein, the Balstein Organic Chemistry information is a cheap thing compared to that. Universities that are subscribed to the Balstein handbook pay only 1000 DM per year for four subsequent versions and each version contains twelve month of literature and they are allowed to keep it so it is a buying product, a saleable product. There are local area network versions where we allow up to ten different users and you don't have to specify the names. That is not a big problem. Nowadays some suppliers ask you to specify the names of the users in a Lan and that is ridiculous. There is an all-university-site licence available where you can have as many users as possible. But it is very difficult, because the origin of the data, the volume of the data, the quality of the data, the combination of different data bases, the software licences, we always have to buy software from software houses, make the price in the end.

Q: Dr. Seidel, could this information also be picked up by telephone? So you have a certain number, everybody could call this number and could consult what the situation is?

A: Yes, that is I think the concept of our system here, because as I said our 96 local authorities which we have original authorities which we have, called Landratsämter, Kreisverwaltungsbehörden. And the idea is that everybody can call a man sitting in this authority and ask for information. This was essentially the real important idea after Chernobyl, because for instance to give you a number at that time our ministry, 30,000 people tried at the same moment to call to our ministry which was impossible of course. And you can never give enough staff to fulfill such a condition it is impossible. So we try to deal localize this information to the public just by giving the same information to all this 96 authorities. That is the idea. Otherwise it does not work.

Q: Dr. Seidel, 300000 users can have the same information because it is open. It is not only one of the 96.

A: Yes, it is open to the public. All 300000 users in the Federal Republic can use it. In Bavaria the number is about 50000 I think. Of course this is not very much if you compare to 11000000 inhabitants, that is clear. And therefore they distribute the information over these 96 authorities.

Q: Dr. Seidel, will there be improvements in the transmission facilities?

A: Yes, I think we will only get an improvement when you probably will use ISDN and we try that at the ministry at the moment using ISDN. All this waiting time will shorten enormously because then you have a transmission frequency of a 64 kilobytes per second. And such a page may contain a hundred kilobytes. So you can imagine usings in normal transmission rate which is about 1200 or 2400 boards per second it takes some time at least.

Q: Dr. Seidel, can you analyse the past data, for example of the year 1990?

A: Well, we update it as I said before every day but of course we store the data, so we can really make a history. We have all this data stored in our ministry. So over the last three or five years we can give you to it. That is very simple.

Q: Mr. Riedel, my question concerns the consistency of the database and who updates the database?

A: The updating is of course carried up by the people in Cologne just like they are doing the input. We can only update material that we know has been changed. In this database we have a lot of old documents, I mentioned in the year 1971. In the meantime of course since the initial safety analysis report over plant has been produced a lot of changes within the plant are carried out. We only know about them if in our house we have had the work to do on that simple, on that individual system. Then we know of the new system descriptions that goes with it. Nevertheless as we saw with the Chernobly accident, it was very important to have even a very outdated system description in the initial analysis of such a catastrophe or even of an incident. It is easier for the expert if he has at his disposal at the table, before telephoning with the utility company, a picture of what he is going to ask. He knows that I need that part of the new drawing and please fax it to me or send it to me quickly. He is informed even so what is an information, in your case you have to be very strongly updated because everything goes into a calculation. We do not calculate, we analyse. Maybe it is not a good counter but often it is enough to read on a certain subject and be informed to answer to a good question.

Q: Mr. Riedel, what about the drawings?

A: At least we know from our database the date of the drawing what we have available. If there is a new drawing we can call the utility and tell them to quickly send us the follow-up, what is our status. And the status is then going to be equal, the same in Garching and in Berlin and in Cologne.

Q: Mr. Riedel, concerning other products you must have subscriptions for the new updates and things like that. How many nuclear plants or facilities will be in TECDO?

A: Well, right now we have all the safety analysis reports of the German power plants. We have restricted ourselves to the power plants and ... to our German so far and we have starting out with one American PWR and BWR.

Q: Dr. Herttrich, for my experience working in a newspaper, sooner or later the ministries will be in the system like DPA has it already, because for instance in my ministry we have the situation that they present certain minutes we have to deliver something to the minister. So we decided to build up a databank of documents which we take care in advance, covering some general aspects of these topic. And this helps us quite a lot. It is a type of background information. For instance the climate problem or all things like that or the general situation of the nuclear energy in countries and so on. So we can just put it out of the computer and this takes us one minute. So this helps us quite a lot.

A: I think that is exactly the point and also this should already have the form so that you can use it directly. So that was a question I had if you use external databanks you can down-load this and do some final processing so that you just can give it in that way and not as in usual, but I think we are really very typical end users. We are challenged to have a response in a short time with appropriate quality and also with some kind of correctness. If you do in a short time you have a wrong assessment of the situation, this can be of course very serious.

Q: Dr. Herttrich, isn't pre-gathering and preprocessing informations a time-consuming and costing task?

A: I think in general, if you really use the on-going information flow and with some additional inputs perhaps, this is no alternative to the way just to prepare many different things in advance. It is correct for many areas you can have your basic papers. You take them and you modify and then you are finished. But this is a number of about maximum 50 or 60 of changing contents. For the rest you must use systems that process continuously and where you can in the time where you need the material go and have it.

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