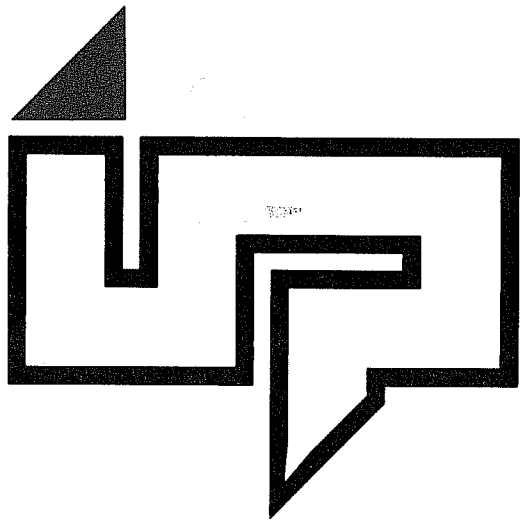
Information Technology in Parliaments

Pułtusk, June 20-22, 1994



Kancelaria Senatu RP

Information Technology in Parliaments

Pułtusk, June 20 – 22, 1994

Republic of Poland

Jarosław Deminet

Networks in Polish Senate

When we started using IT in Polish Senate 4 years ago, we had half a dozen PCs running some administrative applications. Then, thanks to the generosity of US Congress, we got a substantial number of PCs. We decided from the very beginning to connect them with a network. We tried to do this as cheaply as possible, but in a way that would offer us possibility of further improvements and expansion. We now try to keep our network simple and treat it as an information backbone for the entire Senate operation.

Novell Netware sub–network

At the beginning, we selected Novell Netware and 10Base2. There were two reasons. First, by that time, both 10BaseT adapters and hubs were still very expensive, at least in Poland. Second, we were aware that we would move many offices around in the next months. And so it happened. Several large conference rooms were split into offices and the other way around. If we had designed structural cabling by then, we would have had to re–wire many sites. With thin coax cable, rewiring has been very simple, and increasing the number of computers in an office has required hardly any effort at all. Besides, installing thin coax did not require any special tools. We were able to do this ourselves, with almost no need for external contractors.

Now we have 4 file servers running Netware 3.11, and all approx. 150 PC–compatibles are connected with the thin coax. But, as the office rearangements are close to an end, we decided to start upgrading to 10BaseT (with a 100BaseT certificate, which means data grade 5 cables). We shall start with new office space, but gradually (whenever other installations are done) we will extend this standard.

Certainly, such an upgrade means the necessity to exchange Ethernet cards. But we would have had to do this anyway, even with no change of medium. When we were installing first computers, everybody was using 8–bit cards. Faster, 16–bit cards were prohibitively expensive and we used them only for file servers. Now, 16–bit cards are standard, and more will follow with EISA or even local bus interface.

Each of the servers is used by different users, and is located in their vicinity. First server is used by Legislative Office and Senate Proceeding Office, mainly for sharing prepared texts, agendas etc. Second (and the most powerful one, with 32 MB of RAM and 2 GB of RAID–5 disk) is used for accounting, human resources, inventory and other administrative tasks. It also contains mailboxes for all users. Third server is used by IT staff for programming tools and for small data bases. Finally, the fourth is devoted for research and analysis staff, for their texts and databases.

The 4 file servers are connected with a backbone, also 10Base2 based. No workstation is connected to the backbone, to limit the risk of disconnecting it because a user does something to her computer. For now, the capacity of the backbone is sufficient (most users access only data on a server to which they are directly connected), but we plan to

change to faster network, probably next year. We consider either FDDI, 100BaseFL, or at least some form of a switched Ethernet.

Our entire network is connected to the network of Sejm (one of our servers acts as a router and is connected to a hub).

As yet, we have not experienced any serious contention problem. For administrative applications, the bottleneck was the processing power of the server (B–trieve based data access) and perhaps the memory, but recent change to a 486/66–based server should remove that.

Our goal is to use Netware as a tool for distribute access to various services. For example, since recently we have had a serial connection to the PAP news agency service. We are now in a process of modifying the standard access program such that it can be use in the entire network, so that the service would be available from everywhere.

We also directly use lower levels of Netware protocol stack for peer–to–peer communication. Since the computer in the Senate Chamber, supervising the votings, is also on the network, it was possible to use IPX packets to broadcast the results of votings. Various programs running on workstations can use that information for displaying on internal TV or printing extra copies of the results on remote printers.

Internet

We started using Internet 3 years ago. Although just a few persons used it at the very beginning, we decided that it is not acceptable to have just one or two computers connected to Internet, even if they were Unix servers. We used the routing facility of Netware file servers and installed multiprotocol drivers, so that everybody connected to the Netware LAN can now use the full TCP/IP suite. Here, the use of 10Base2 has its disadvantages. Because of the design rules and of the properties of TCP/IP addressing, we needed 5 classes C of addresses, even though we use just 150 computers! We are now a registered domain *senat.gov.pl*, with our own name server.

We are connected to the Internet via NASK, which is a network developed for the academic community and financed by Committee for Scientific Research. For two years it has been available also for governmental and commercial users. We used the simplest and cheapest technology available – public–domain routing program KA9Q on both ends of a leased line, operating at 19.2 kbps. It is enough for our present needs, but we are prepared to switch to a faster solution, should that be necessary (but it would required substantial investments on both ends ot the cable).

There are more and more users of Internet. Most use e–mail, since many of our colleagues from other parliaments and research institutions can be accessed this way. Research staff also accesses remote databases, in particular commercial Dialog, european Echo and catalogues of the US Library of Congress. There are fans of accessing other resources, gophers etc.

Our two servers running Unix (Hewlett–Packard HP–UX and 486 Unixware) also use TCP/IP and connect to the backbone (although Unixware uses Netware IPX/SPX stack

as well). Since recently, we have had a connection to the HP computers in Sejm (Computer Center and Library), also using KA9Q router. In theory, every user can access our Unix servers, but in fact till now they have been mainly used by the IT staff for software development, for name service etc. Some preliminary tests are done with gopher software. To improve the management of those servers, we are now participating in purchasing CA Unicenter for Sejm and Senate HP–UX computers. We were promised that Unicenter for Netware and for Unixware should be available soon. That would enable us to control all our servers in a unified way.

We try to convince all Senate staff to use e–mail. None of the commercial e–mail programs fulfilled our needs (in particular, till recently there were no localized versions). Thus, we decided to start with a public–domain Pegasus Mail (pm). It is a simple, but powerfull program, well integrated with Netware. Now we are interested in a new version of our most popular word processor, QRText, with integrated e–mail.

Our Pegasus Mail has a gateway to SMTP, which is public–domain Mercury, running as an NLM on a Netware server (although for technical reason also an e–mail agent on HP is used as an intermediary).

There exists now governmental X.400 e–mail system, but it allows to connects just one workstation from every institutuins, so we have no interest of using it. We are ready to instal a gateway on our side and we hope it will be possible soon.

X.25 Wide Area Network

Last year we started to investigate possibility of connecting senators' district offices with the Chancellery. We decided not to use public, switched telephone network, because of the high cost of connection, contention and very low reliability (it is almost impossible to keep a long–distance connection to most places for more that a couple of minutes). We investigated existing X.25 networks, and out of those we selected Kolpak, built and operated by Polish railways. It took one year to clear all administrative and legal problems, but now for a couple of weeks we have been installing modems in first 50 offices. At present, we will use public telephone network to access local PADs, but in the future, based on cost estimations, we intend to switch to leased lines. The reliability of local connections is usually satisfactory even for 14.4 bps transmission.

A user from a district office would connect to the closest Kolpak node and then log into our Gandalf gateway, converting his session from X.25 to TCP/IP. Currently the communication will only be used for exchanging e–mail in a batch mode. Program Kermit will copy prepared outgoing mail into a mailbox on HP server, and copy incoming mail from the mailbox. Later on, after some improvements of our Unixware server, users will have access to interactive applications running there. We are also considering installing a BBS or a gopher. More advanced applications will be possible only after replacing PC ATs in district offices with new equipment.

Conclusions

A local network can be built incrementally, in a very cheap way. But, one should keep in mind the complete, structural solution, from the very beginning. In particular, in the case of Ethernet, it means that the adapter cards should be able to work in the future with 10BaseT. On the other hand, when we prepare our first project with structural cabling, we will make sure that it will conform to the expected 100BaseT standard.

Novell Netware is a good starting point, but even starting with it, one may be sure to use TCP/IP in some future. Thus, adapters used should have drivers for multiple protocol stacks. If so, TCP/IP can be easily routed by file servers.

With very limited effort, IPX/SPX protocol stack can be used for peer–to–peer communication by local applications.

Cheap (or free) public domain software may often be used instead of expensive one. This is obvious for Unix world, but there are great free products for DOS and NetWare as well, including efficient gateways.

Federal Republic of Germany

An Advanced System of Optical Storage to Support the Work of a Parliamentary Committee of Inquiry

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1. Introduction

In fullfilling its mandate to investigate the activities of the Department of Commercial Coordination of the former GDR, the First Committee of Inquiry of the German Bundestag in its 12th electoral term has to clarify a great number of highly complex matters in critically reappraising a substantial part of the history of the former GDR and shedding light on its continuing repurcussions in the Federal Republic of Germany. The Committee has only one electoral term to complete its work, which it is expected to perform both thoroughly and speedily. In view of the difficulty and immensity of its task, and of the limited amount of time at its disposal, the Committee must make use of every kind of working aid, technical or otherwise.

2. Terms of reference

The work of the Committee of Inquiry is based on documents most of which had yet to be fully evaluated. Currently, it is estimated that they comprise some 4,8OO files containing a total of 1.5 million sheets.

The first step was to make this material available, in its original form, to the secretariat, the members of the Committee and the parliamentary groups. Because of the limited amount of time available, traditional techniques such as photocopying could not be used: even with a large number of staff, and a much higher copying speed, it would not have been possible to make the materials available to the Committee in time. It would also hardly have made sense to create thousands more files. For this reason, the most modern storage and information technology had to be used.

Because of the great urgency of the Committee's work, the aim was, within a short space of time, to enable its members to search for and retrieve specific documents. For this purpose, all the documents had to be analyzed and given keywords which would facilitate subsequent recherche. The keywords were listed in a thesaurus so that they could be used, either individually or linked in logical operations, in searching for given documents stored in the database. As a result, all documents dealing with a particular subject can be retrieved using a given keyword (in the thesaurus). Because the documents themselves are stored on data

carriers, the users performing the recherche can call up the desired documents in their original form on their monitors.

3. EDP support system

A EDP system was designed to support the Committee's work. It consisted of two elements:

- the scanning and storage of all documents on optical disks;
- the provision of a data processing system for archiving, recherche and retrieval.

3.1 Scanning and storage of all documents on optical disks

Optical disks were chosen because they allowed the documents to be archived in their original form. The aim was to store all available documents page-by-page on optical disks using a scanner and to provide a data processing system allowing a certain number of users with discretionary access to call them up in their original form on monitors, thereby dispensing with need to copy and distribute files.

Because the Bundestag administration had neither the technical facilities nor the trained staff required for scanning, this work was performed by an external firm of specialists.

3.2 Provision of a data processing system for archiving, recherche and retrieval

Parallel to scanning, a data processing system for archiving, recherche and retrieval was set up in the Committee's secretariat. Its main components are as follows:

- archive system for access to documents in their original form with the aid of optical disks
- systems for analyzing the documents and indexing them with keywords
- database system in which the keywords are stored and can be used for recherche
- recherche systems which allow target documents to be found via the database and called up in their original form on monitors
- document printing system
- scanner system for storing on optical disks any documents submitted directly to the Committee
- system for administering the network, the operating sytems and the database.

Fig. 1 provides an overview of the system.

4. Technical realization

The technical facilities at the disposal of the Committee of Inquiry consist of the following:

Osar (optical storage and retrieval) disk library - for a maximum of 64 12" optical disks with 2.6 GB each; storage capacity equivalent to approx. 50,000 pages
the optical disks stored in this library are made available automatically on the jukebox principle for read and write access.

IMS (image management server) with unix-based operating system
The image management server controls the access to the images.

Scanner
Used to scan and digitalize the texts.

Document entry server with Unix-based operating system
The server controls the storage of the documents on the optical disks and manages the interim storage of images in the IMS. The server can also be used to check the quality of scanned images and, if necessary, to re-scan.

Print station for imaging printer including server and alphameric terminal
The printing station is used to print scanned documents. The print command is given at the workstations used for indexing and recherche.

Administration and data-update server, protocol printer
At this workstation the system administrator manages the network, the operating systems and the IMS. The server is also used to make backups. The protocol printer can be used to print texts as well as database protocols requested by the data protection section.

SQL-Server
The SQL server is used to manage the database and the access rights of database users.

Network
The network used is an Ethernet with a bus-type network topology which corresponds to the in-house standard. The network operating system is run on Novell-Netware.

5. Using the data processing system

Figure 2 shows the workflow when using the system. The documents were first of all scanned, by an external company or in-house, and stored in the optical archive. This made it possible to

gain immediate access to the entire documentation from all workstations, using a file plan, and either to call documents up on a monitor or to print them out. This avoided the need to search for files and the time-consuming task of photocopying them.

Once the documents had been scanned they were indexed using keyword by specially trained staff. A special thesaurus has been developed for this purpose on the basis of the Parliament's Thesaurus of the Bundestag, which was already existing. The keywords were listed in the database for use as part of recherche. As a result, recherche was possible while indexing continued.

For ease of use, the workstations were equipped with dual-page monitors and a special user interface. Documents are displayed on the left-hand side of the screen; processing takes place on the right-hand side. Virtually all the functions, including indexing, can be performed using the mouse. Fig. 3 shows an example of the way the screen is structured.

6. Extension of the system

At present, some 80 workstations are connected to the local area network. In addition to staff of the Committee secretariat, parliamentary groups and groupings in the Bundestag have been provided with workstations for recherche and access to original documents.

In a further project phase it would be possible to give all members of parliament sitting on the Committee of Inquiry access to all the stored data. All MP's offices are connected to an ISDN-Network using 64-kbit/sec-channels. The technical facilities in the MPs' offices already allow recherche to be conducted from there. To send the images to the offices transmission speed should be higher. At the request of the MPs however, the target documents can then be transmitted in original form by fax or messenger. Given a sufficient data transfer capacity, it would be possible to transmit documents to the MPs' offices in image form automatically by the technical system.

Archive- and Retrievalsystem Committee of Inquiry

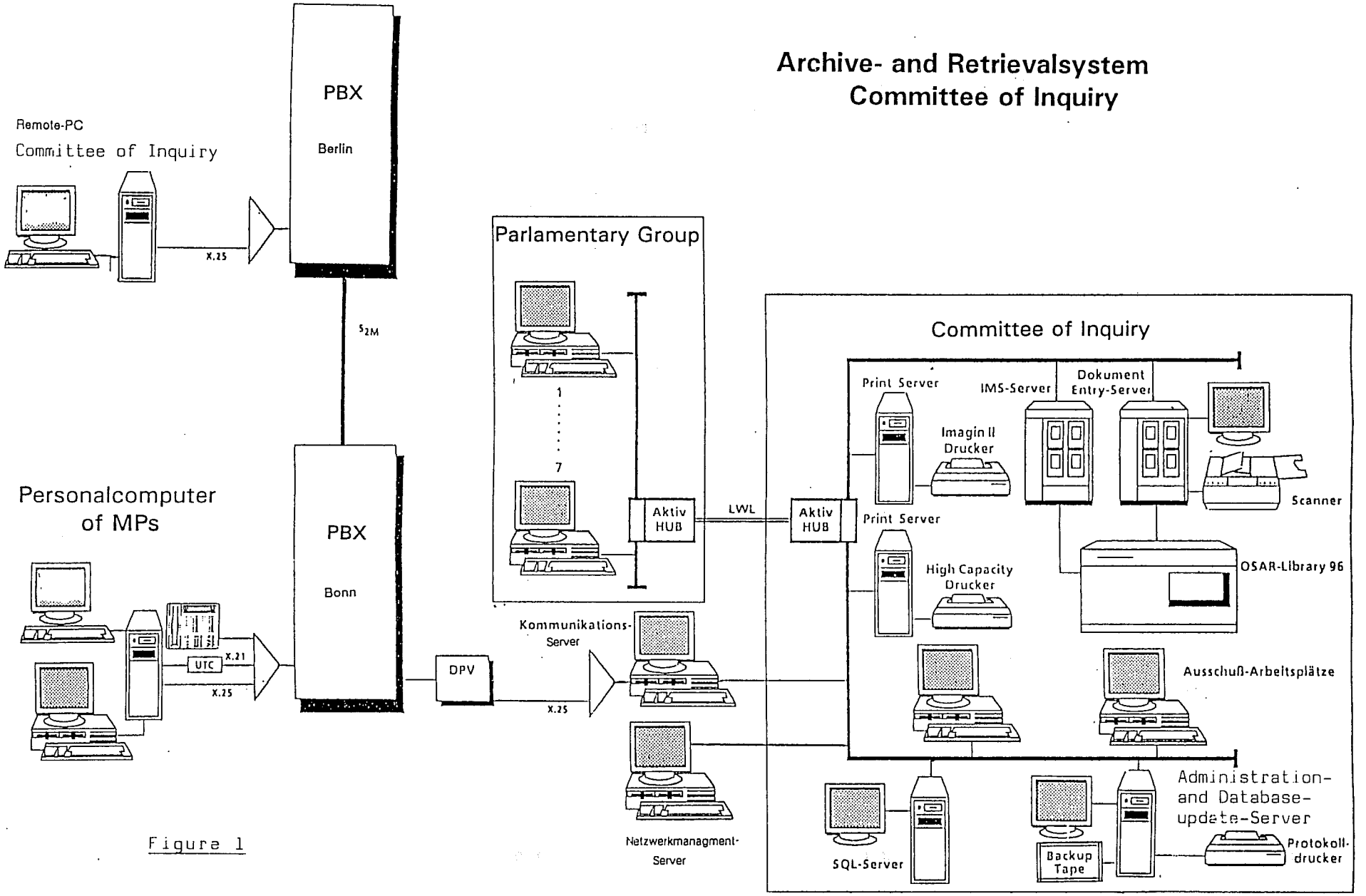
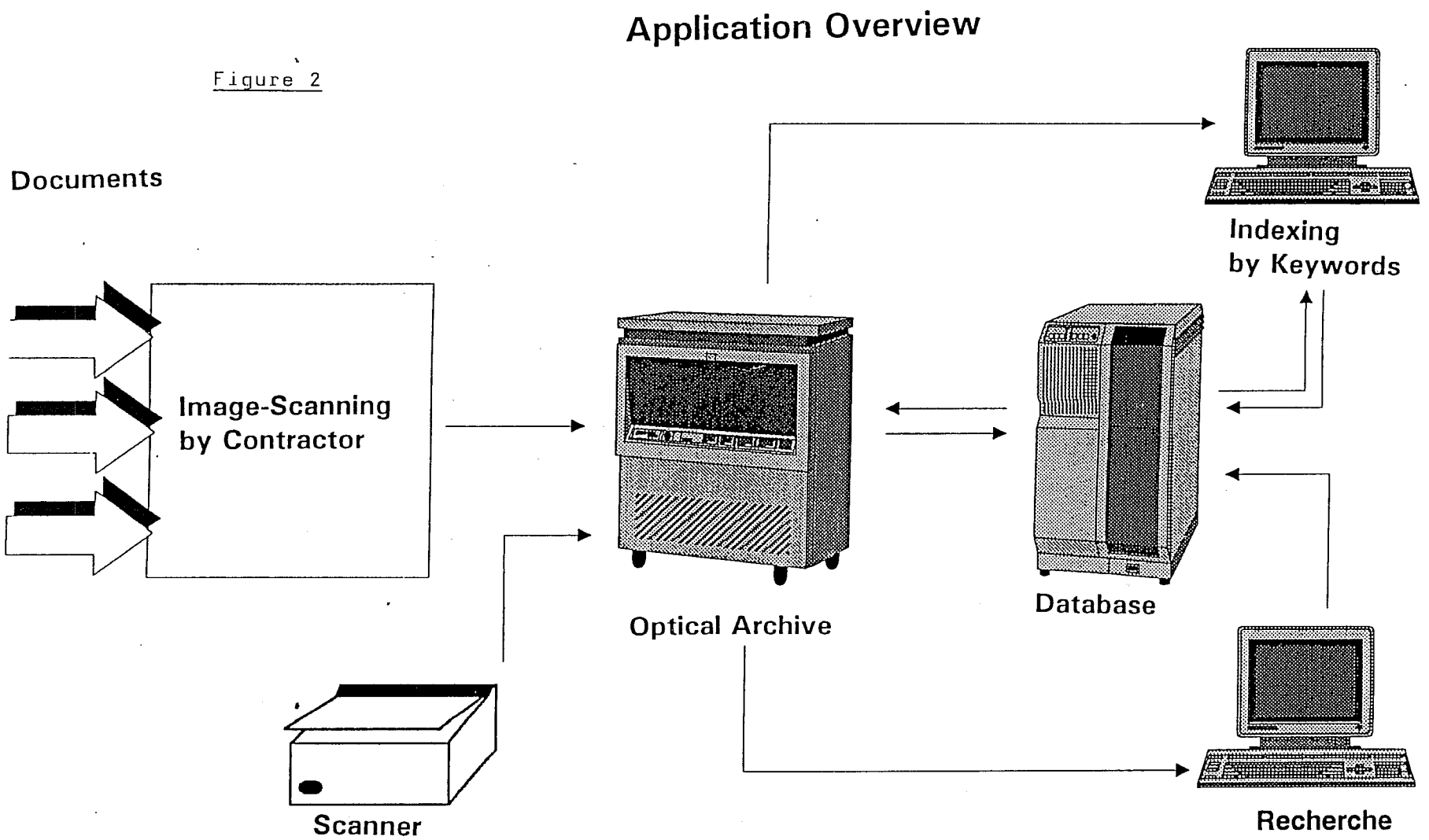


Figure 1

Figure 2


Application Overview
Documents
Image-Scanning
by Contractor
Scanner
Optical Archive
Database
Indexing
by Keywords
Recherche

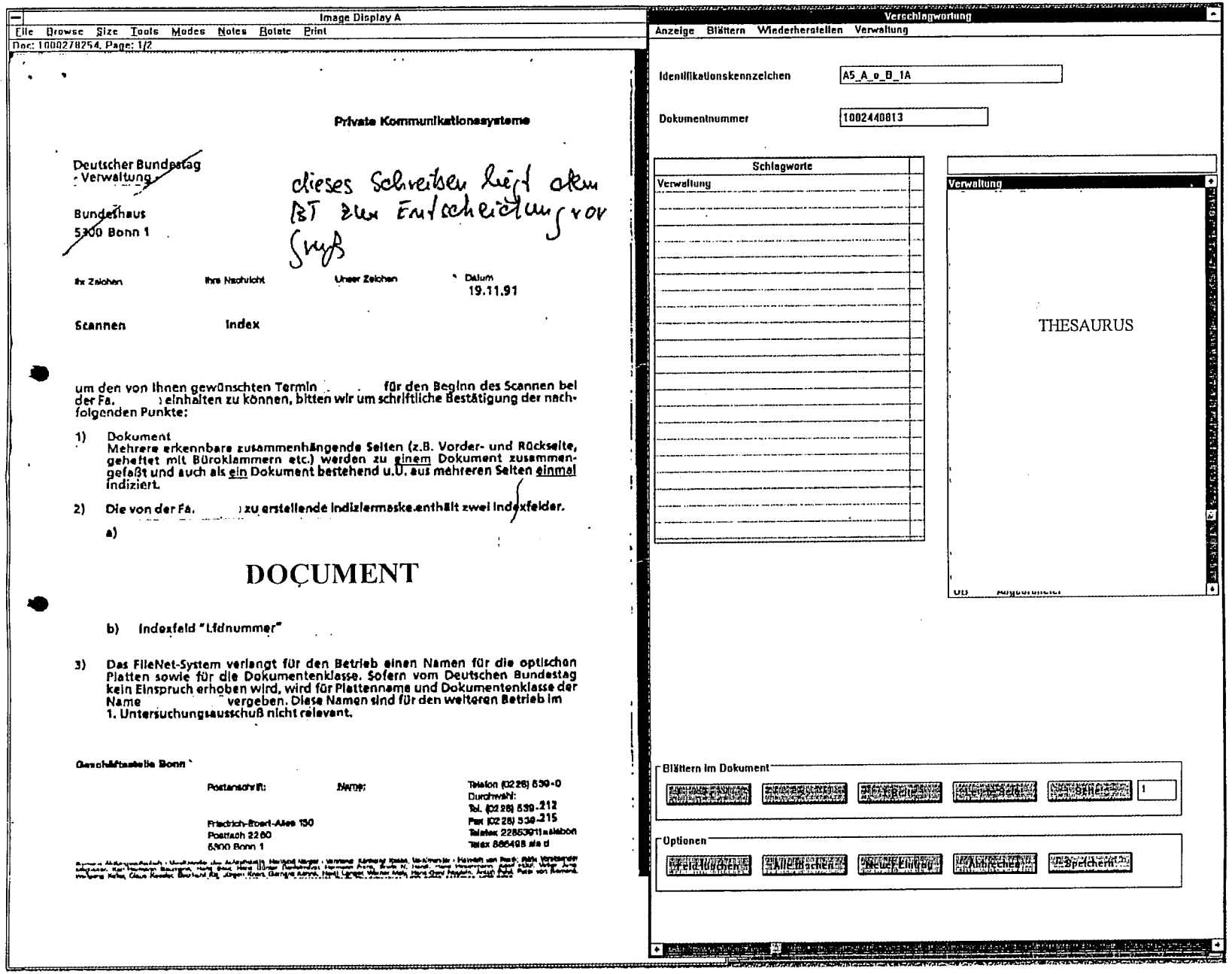


Image Display A
File Browse Size Tools Modes Notes Rotate Print
Doc: 1000278254, Page: 1/2
Private Kommunikationssysteme
Deutscher Bundestag
- Verwaltung -
Bundeshaus
5300 Bonn 1
dieses Schreiben liegt dem
BT zur Entscheidung vor
SPD
Ihr Zeichen
Ihre Nachricht
Unser Zeichen
Datum
19.11.91
Scannen
Index
um den von Ihnen gewünschten Termin für den Beginn des Scannen bei der Fa. einhalten zu können, bitten wir um schriftliche Bestätigung der nachfolgenden Punkte:
1) Dokument
Mehrere erkennbare zusammenhängende Seiten (z.B. Vorder- und Rückseite, geheftet mit Büroklammern etc.) werden zu einem Dokument zusammengefaßt und auch als ein Dokument bestehend u.U. aus mehreren Seiten einmal indiziert.
2) Die von der Fa. zu erstellende Indiziermaske enthält zwei Indexfelder.
a)
DOCUMENT
b) Indexfeld "Lfdnummer"
3) Das FileNet-System verlangt für den Betrieb einen Namen für die optischen Platten sowie für die Dokumentenklasse. Sofern vom Deutschen Bundestag kein Einspruch erhoben wird, wird für Plattenname und Dokumentenklasse der Name vergeben. Diese Namen sind für den weiteren Betrieb im 1. Untersuchungsausschuß nicht relevant.
Geschäftsstelle Bonn
Postanschrift:
Name:
Telefon (0228) 539-0
Durchwahl:
Tel. (0228) 539-212
Fax (0228) 539-215
Friedrich-Ebert-Allee 130
Postfach 2260
5300 Bonn 1
Verschlagwortung
Anzeige Blättern Wiederherstellen Verwaltung
Identifikationskennzeichen
A5_A_o_B_1A
Dokumentnummer
1002440813
Schlagworte
Verwaltung
Verwaltung
THESAURUS
Blättern im Dokument
Seite
1
Optionen
Neuer Eintrag
Ändern
Speichern

Figure 3

Electronic Mail pilot test in the German Bundestag
as at: 10.04.94

The installation of Electronic Mail in the Bundestag dates back to a decision taken by the Council of Elders in 1987, under which an electronic document exchange via PARLAKOM, the German Bundestag's communications network, is to be implemented after standardization has been completed.

In 1990, the Bundestag Administration was charged with setting up a pilot test. The idea was to make Electronic Mail available to a selected group of Members of the Bundestag and, to a limited extent, to staff of the Bundestag Administration for a specified period of time. The purpose of the pilot phase is to evaluate the feasibility and the acceptance of the medium by Members of the Bundestag and their office staff. Upon completion of the test the parliamentary bodies will decide whether and in what form the system should continue to be used.

Electronic Mail is intended to support the exchange of documents among all communications partners of the German Bundestag, in particular Members of the Bundestag and their constituency offices, the parliamentary groups, government agencies and the Permanent Representation of the Federal Republic of Germany in Brussels. One of the main features of the document exchange will be the further processing of documents in PCs.

Given the requirements specified and the technical environment, the system needs to be standard-based as far as possible - in this case in conformity with the CCITT (now: ITU) Recommendations X.4ff, and with POSIX.

A consulting firm helped to draw up the tender documents and coordinate them with those involved in the project. This approach has proved to be successful, since the subject matter is very complex both technically and organizationally. It should be stressed that intensive cooperation between the consultant and the relevant division of the Bundestag Administration is indispensable and itself requires time and effort.

Let me give you an idea of the time scale: it took about one year to coordinate details among the parliamentary groups, government agencies, the staff representation, the Data Protection Division, etc., to develop basic administrative elements such as addressing schemes, and to draft the specifications defining the functional requirements.

In the end the specifications covered 100 pages. I should now like to highlight a few of the main points.

The system is supported by the existing infrastructure of interworking ISDN facilities and X.25 sub-switching centres. The terminals are 486 PCs from different manufacturers, most of them integrated in small Ethernet LANs. The User Agent has to adapt to the complex software of these PCs.

Services intercommunication is required with Telekom's Telebox service, with Teletex (widely used in the Bundestag), and with Group 3 fax machines. As far as possible, the documents are to be transmitted true to the original layout.

To allow the greatest possible integration into the user software the body parts have to be structured. To this end, the first body part consists in a description of the documents (table of contents) agreed among the communications partners.

The number of exchange formats is limited to just a few (ASCII, T.61, ISO 6973 and Word for Windows with the body-part types 1, 2, 9 and 13). The most important exchange format is Word for Windows.

The availability of the system is a function of the telecommunications facilities. Adequate features regarding data protection and data security are required.

Tenders were invited for a system to be leased for approximately one year for the pilot phase, and for a full-fledged system to be purchased subject to decisions to this effect being taken. The timeframe for inviting tenders and implementing the system was extremely short (3 months/5 months).

The tendering procedures started in December 1992 with an EC-wide public invitation to tender to which 17 firms responded. Eight of them were excluded because they could not demonstrate their ability to deliver. The remaining firms were invited to submit a tender. Finally, four firms actually tendered for an X.400 system.

The tenders were evaluated on the basis of standardized performance criteria, such as level of target achievement, price/performance ratio and life-cycle costs over six years.

In April 1993, on the basis of these reference criteria, the Tandem company was awarded the contract as general contractor. Tandem and the other companies involved as subcontractors - MR (Dr. Rossbach), mbp and Alprange - all have experience in the field of Message Handling.

The central element of the system is the product called OSI/MHS, together with the Message Transfer Agent (MTA) and the Message Store (MS) functionally enhanced by MR Postoffice. Intercommunication of services is achieved by means of central servers. The Fax Gateway is from MR, the Teletex Gateway is based on a Retix MTA with mbp software. The Remote User Agent (RUA) is supplied by Alprange. The products largely meet the 88 standard of X.400.

The central software runs on a tandem CLX, equipped with 2 RISC processors, 32 MB core memory and 6 GB disc memory. The terminals communicate with the MTA via two X.25 ports with 8 connectors. 6 of these are used with 60 logical channels each. The data are routed via the packet switch to the ISDN facilities to be distributed from there by means of circuit switching. The network has been installed throughout the German Bundestag.

At present the network is terminated in the office by means of a Private Network Terminator (PNT). At this point the data stream of 64 kbps is converted into synchronous mode and passed on to the PC via the V.24 connection of the Eicon communications card. The Remote User Agent (RUA) runs on the PC, enabling the user to communicate logically with the MTA or MS. In the 88 systems the RUA interface is standardized; this software is thus autonomous and in principle exchangeable. Most RUAs, however, only support the TCP/IP protocol that is usually used for LANs; there are only a few suppliers of X.25 RUAs.

After successful testing of an ISDN termination by means of the SO bus and the corresponding card in the PC, new connections, in particular in the constituencies, will be established using this technology. Then the X.25 protocol will be handled on this card.

Let me make another remark about the RUA: Though its importance has been recognized, it is still not valued highly enough. Any strengths or weaknesses here will have major implications for the acceptance of Electronic Mail. All the products that I know so far are unfortunately not sufficiently user-friendly, functional, simple or reliable. The RUA is a piece of software designed by experts for experts. This is a major drawback of Electronic Mail.

In the system described here it is the user of Electronic Mail who must take the initiative for any communication. This means that, for example, incoming mail is notified only if the application "Electronic Mail" has been selected. In other programs this is not the case.

Other components of the Bundestag's Electronic Mail are the servers for intercommunication of services.

The Teletex Gateway is a dedicated MTA from Retix on a SCO Unix PC, connected to the central system via Ethernet. Some Members of the Bundestag frequently use the Teletex (Ttx)

service to communicate with their constituency offices; this feature can therefore not yet be dispensed with. In the medium term this service will be replaced by Electronic Mail.

The Fax Gateway is a straightforward PC with several Fax cards also connected via Ethernet. The conversion into the Group 3 Fax format will be handled centrally. The advantage of this configuration is that it reduces traffic on the network and ensures short response times at the user's end; the disadvantage is that only the programs and fonts available on the server can be used. At present there is no bottleneck here; in the long term, however, local conversion will become unavoidable on account of the variety of software.

Let me make a few remarks on the address structure. The structure of the Bundestag provides for a dedicated Private Management Domain (PRMD), integrated into the Administration Management Domains (ADMD) of both Telekom and the Federal Government. The parliamentary groups operate their own PRMDs which are directly linked to the Bundestag PRMD. The address scheme of the Bundestag reflects the hierarchical organization in terms of mnemonics to support the routing. Unfortunately, this makes the scheme incompatible with the widely used MS Mail, since the latter does not have the necessary conformity with standards.

At present there is no central directory. The addresses are kept centrally for routing, and locally for the RUA entries. Addresses may be exchanged with the communications partners by exchanging data files. This procedure makes sense only as long as the group of participants is small and only few addresses change. However, efficient compatible directory services - ideally they should, of course, be standardized - will soon have to be used by all partners. The Bundestag and the Government are now working on this. Address storage and linking of the Fax Gateway give every X.400 participant access to any fax, also outside the pilot test. This means, for example, that there is a simple way of dispatching a fax direct from Word for Windows, without having to change to another application or having to produce a printout.

Since the start of the pilot phase in November 1993 interoperability tests have been carried out which show that the number of communications partners is still relatively small and that both sides need to make great efforts to coordinate time-frames and contents. Almost every partner requires individual configuring. The tests concerning the document exchange formats are the most time-consuming. In the worst case not even ASCII texts could be exchanged.

The most frequently used format is Word for Windows. In the system described here T.61 and ISO 6973 are also supported (? oder "continue to be supported"). Experience has shown that it is imperative for DCA with its many ramifications to be included in the list of exchange formats as well. Standardized ODA/FOD converters are of no importance as yet.

To support the user, the documents are automatically preceded upon dispatch by a directory (first body part) describing the following body parts. Upon reception, the directory is analysed by the RUA software. Thus, for example, Word for Windows is called up, without the intervention of the users, as soon as a Word for Windows document has been received; then the document is notified and is immediately available for further processing. If the requested word-processing software cannot be loaded, an error message is generated. The table of contents enables the recipient to draw conclusions concerning the contents of the body parts. The user can subsequently load the document with the relevant editor or word-processing program.

Other operators of Electronic Mail also use support procedures which, however, are not - or not sufficiently - compatible with each other. Thus, for example, the Government's Electronic Mail calls up a **browser (?)** which automatically identifies and more or less correctly reproduces a series of formats on the screen and by means of the printer. This, however, does not allow any further processing of the document received.

One major requirement of users is the transmission of documents true to the original layout. This enhances confidence in the application; conversely, great confusion arises as a rule if identical documents look different after transmission. In our experience, the transmission of documents true to the original layout can be achieved only if both the sender and the recipient use the same format and the same font. As soon as a converter is involved or a different font is used, the recipient gets a document that looks different.

Difficulties arise at the Fax Gateway in particular. The most frequent source of difficulties is the use of a non-loadable font. Another source of trouble is the 200 dpi resolution in the case of Fax, which may cause minor mismatches with the printer when certain fonts are used, thus generating a different layout. Currently these problems cannot be solved.

Since November 1993, communications links have been established and tested, the system has been optimized and the system administrators trained. After initial instabilities the operating reliability of the RUA has been enhanced. After final improvements had been made to the user surface and the functionality, the training documentation for the participants in the pilot phase was prepared. In February 1994, training started. Since Windows and Word for Windows are being introduced at the same time as Electronic Mail, the amount of training required is considerable. Since March the first documents have been exchanged electronically between selected communications partners. The need to make the operation of the RUA considerably more user-friendly has been apparent time and again.

The requirements regarding data protection and data security have been kept to a minimum. The mainframe computers have been installed in a secure computer centre. The system is operated

exclusively by the Bundestag's own personnel. Remote maintenance is not permitted. Control of access to Electronic Mail is guaranteed by means of a password. At present encryption of documents is not planned as far as the Bundestag is concerned. During the pilot test participants have undertaken not to dispatch any confidential documents via Electronic Mail. Electronic addresses are not disclosed to the general public, they are only made available by the holder of the address.

A deliberate decision was taken to lay down only a few organizational rules for the X.400 test participants. The only thing worth mentioning in this context is the fact that mail which does not bear a clearly defined address or cannot be processed is destroyed. No attempt is made to identify the recipient from the contents. This is to ensure maximum confidentiality.

The decision on more far-reaching regulations concerning, for example, the issue of co-signing or the Federal Government's Rules of Procedure, was deferred, since they hardly concern the Members of the Bundestag, for whom the pilot test has been set up, and the aim is to achieve the highest possible level of acceptance of Electronic Mail during the short time available for the test.

Electronic Mail has proved to be very personnel-intensive, in particular as regards address management, ensuring interoperability, error detection and correction in all areas (centre, network, terminals), as well as training.

To sum up: standardized Electronic Mail does not solve the Bundestag's communications problems; rather, it is a tool to enable a swift exchange of documents at national and international level. The system tested offers many possibilities, but should be improved in terms of user-friendliness and reliability. Whether the considerable investment will be worthwhile mainly depends on the acceptance of the system by the users and on the availability and further development of standardized products.

European Parliament

FROM LIBRARY TO EPiCENTRE

A project to modernize parliamentary assistance in the European Parliament

INTRODUCTION AND CONTEXT

1. In early 1992, the Directorate General for Research of the European Parliament set up a "task force" to consider the optimum organization of the future library and documentation centre in Brussels. This provided a unique opportunity to rethink the provision of parliamentary information from zero.

2. The task force took into account many years of experience within the European Parliament, but also the organization of similar services in national parliaments, both inside and outside of the Community. Members of the task force have had the opportunity of studying other research services in detail and were able to select the best features of each for inclusion in the proposed service for the European Parliament.

3. Since the creation of the Directorate General for Research in 1973, there has been a clear distinction between the library and documentation services and the research services. Although they cooperate closely on a day-to-day basis, these have always been physically separate and organized independently. The most radical proposal of the task force was to combine the energies of the Directorate General into a single entity which would be able to satisfy the growing information needs of a modern parliament. The result was the EPiCENTRE (the European Parliament Information Centre) concept, which will combine all of the current library and documentation functions with the resources of the research divisions.

4. A distinctive feature of the EPiCENTRE is that it will provide a single point of entry for any information request from its clients (restricted to members, assistants, groups, services of the parliament and stagiaires). It is then the task of the EPiCENTRE to treat this request for information in the most efficient way possible, using any of the resources at its disposal. It will offer the services of highly qualified staff and state-of-the-art informatics equipment to provide the best possible service as rapidly as possible. It will also offer a range of online ready-made products (e.g. information packs on topics of wide political interest) to ensure that members are as fully briefed as possible on forthcoming developments in the Community. It will emphasise the provision of high-quality information to respond to the growing need for sophisticated briefings, particularly at short notice.

5. Although much information is still extracted from printed documents, this situation is changing fast. The tendency is now towards information being stored on computer, which makes it more easily accessible and is cost-effective. This trend will clearly continue and accelerate. The EPiCENTRE must be able to provide the means of accessing such information and making it available to clients. It will therefore need to be highly computerised and to be able to call on its own informatics resources to allow it to respond quickly to changing needs.

6. The EPiCENTRE does not mean the end of traditional library services - a wide range of newspapers and periodicals in comfortable surroundings will still be provided; a well stocked reference library will contain major sources from all member states. Qualified staff and user-friendly computer terminals will guide the client effortlessly to appropriate sources of information. However, this visible

part of the EPiCENTRE will represent the tip of the iceberg. The less visible part will be employing specialist staff to extract and synthesize information from a multiplicity of sources, and to make it easily available to clients, via informatics networks, whether they are at their desk in Brussels or anywhere else in the world where they have access to a computer terminal.

OVERVIEW OF EPiCENTRE INFORMATICS REQUIREMENTS

7. The EPiCENTRE is to be ***the*** information centre for the MEPs and their assistants adopting a very progressive approach to satisfying their information needs. At present the storage and retrieval of information depends heavily on paper based systems. Already the existing services are stretched. The need is for greater use of electronic storage and retrieval of information.

8. This paper describes the type of systems that may be implemented. It is important to note that this is illustrative only and **not** a schematic design. An important step is to define the requirements for the information systems and develop a suitable strategy as soon as possible in order for the necessary systems to be in place before the EPiCENTRE opens at the end of 1997 or beginning of 1998.

9. The increase in information service requirements of the EPiCENTRE is due to several factors including :

   a. an increase in the number of member states and hence MEPs. Norway, Sweden, Finland and Austria joining is imminent and other countries will follow;
   b. an increase in the powers and responsibilities of the European Parliament which will result in increase volume of documentation;
   c. growth in the volume of documentation produced be the EP;
   d. greater need to access huge amounts of information quickly and efficiently;
   e. storage and dissemination problems of paper documents;

10. The physical volume of documentation in paper format is already becoming unmanageable. With the increased demands of MEPs and increased volume of information the need for the provision and access to information in electronic format will increase. Another important factor is the increasing computer literacy of MEPs and their assistants. Their expectations for information delivery and access to a wide range of electronic data will increase.

11. This paper outlines the type of systems likely to be required in the EPiCENTRE. It is difficult to be precise since much of the technology to be incorporated is in its infancy, and standards are not yet defined.

    The ultimate goal is for all information, text, multimedia and other facilities to be available at the terminals in the EPiCENTRE and remotely. Providing similar facilities to remote terminals is still some way off. But the strategy to achieve this needs to be developed now.

    The technology will change the working practices of documentalists and all who need access to the information.

OUTLINE OF IT SYSTEMS

12. The IT systems required by the EPiCENTRE can be classified as the Local Area Network (LAN), the Wide Area Network (WAN), user workstation and information systems including electronic storage systems.

Local area networking

13. The LAN technology used by most EP organisation is based on Ethernet running at 10 Mbps. The EPiCENTRE networking needs will be an order of magnitude greater than most other EP Directorates. The high bandwidth needed by the EPiCENTRE to deliver voice, image and data will continue to increase and necessitate the implementation of faster networks. The detailed design and specification of the LAN should be left as late as possible to take advantage of the latest technological developments.

14. The communications cable infrastructure recommended is Category 5 twisted pair, capable of speeds up to 150 Mbps. This cable type will be suitable for the foreseeable local area networking requirements.

15. During the early periods of operation of the EPiCENTRE, Ethernet will satisfy some of the networking requirements. Other technologies, possibly switched Ethernet, providing faster speeds will also be required. Demand on the network will be high and each network segment should have a small number of PCs.

16. Fast technologies such as the 100 Mbps Fibre Distributed Data Interface FDDI will be required for the backbone and server networks. Some user workstations for specialist applications will also need such networking speeds to deliver voice, data and image to the workstation. There will be a progressive migration of workstations requiring connection to high speed networks.

Wide area networking

17. An important requirement is to allow users remote access to the new facilities of the EPiCENTRE. The intention is for the possibility that the services of the EPiCENTRE be made widely available, both internally to other EP organisations, and externally to remote users and external organisations.

18. An advantage of producing and storing information electronically is that it can be accessed remotely. This will bring about a fundamental change in how information is accessed. How this is achieved will depend on the type of wide area networks implemented. High speed links between major centres such as member state capitals will be essential to provide a useful service to remote users.

19. Remote users will not be able to enjoy all facilities of the EPiCENTRE immediately, due to restrictions of bandwidth. Access times will be slower and some multimedia facilities will not be available at all, at least, until the implementation of high-speed 'data highways'.

20. Essentially, there will be two types of wide area network link: high speed dedicated links to other networks both within the EP and to external

organisations; and slower, switched, dial-in access for remote users of the EPiCENTRE facilities.

21. There is growth in telecommunications services and systems in all sectors. The fall in network bandwidth costs, coupled with the increase in on-line services has brought about huge growth in telecommunications services. The users of the EPiCENTRE will come to expect more sophisticated services.

ELECTRONIC DATA STORAGE

CD-ROM Technologies and Applications

22. CD-ROM is one of several storage media which will be used in the EPiCENTRE. It is a versatile medium and has a growing number of applications. Its uses will be mainly for information bought on commercially produced CD-ROMs such as external catalogues, databases, back issues of newspapers, journals, etc. It can also be used as a cost effective way of distributing information produced by the EPiCENTRE to MEPs, or more generally. CD-ROM is becoming an important medium for multimedia applications which are very demanding on networks.

CD-ROM Authoring and retrieval system for the EPiCENTRE

23. It will be essential that the EPiCENTRE has the possibility of recording its own CD-ROMs for the efficient storage and access of material for the 'rapid response' service which is to be provided. One example of the sort of material entirely suitable for this purpose is the documentary filing system built-up by the documentalists, which consists of newspaper and periodical articles, as well as other documents. Another example of the material to be recorded on CD-ROM will be the research papers, 'information packs' and 'fact sheets' produced by the EPiCENTRE.

CD-ROM Networks

24. All information on CD-ROMs can be made widely and quickly available by providing multiple CD-disk drive servers and connecting these to the network. They can then be accessed by any user connected to the network and also remotely. The CD-ROMs stored in these servers would be for on-line access for commonly used sources of information.

25. Juke boxes which can store several hundred CD-ROMs and have only a small number of drives area a cost effective way to provide quick though not immediate access to a large amount of information. The juke box automatically loads the required CD ROM into the drive and replaces it after use. There is a short delay to load the disk and access the information.

Other storage media

26. The storage requirements of the EPiCENTRE will increase dramatically. A range of storage media, in addition to CD-ROMs, will be required to suit the different information format and access requirements. There will also be a hierarchy of storage systems to suit the requirements for access times. These will range from immediate access on RAM storage facilities, to on-line CD ROM and optical

storage, to off-line magnetic storage. The following table illustrates the storage requirements for the EPiCENTRE:

Storage Type	Access Time	Use	Type of Material
Archive material Optical Disk Magnetic Tape CD ROM	Off-line, slow, manual load following request	specialist research	Out of date material - back issues of journals, newspapers, Grey literature
Near-line: CD ROM Juke Box Optical Disk Juke Box	Several seconds delay while disk is loaded in drive	General information which needs to be readily available but not on-line	Telephone directories, catalogues, non essential EP information.
On-line: CD ROM Networked Servers File Servers	Very quick to immediate	Immediate access to EP documentation and databases	EPOQUE, OVIDE, on-line text, current information packs
Workstation: Hard disk RAM	Immediate	Documentalists	WIP

Workstations

27. Increasingly powerful workstations will be required for processing information in various formats. Initially most workstations will be PCs running DOS and Windows applications. As more multimedia applications become available the workstation will be required to deliver a range of text, data and image facilities to the desk. This will require more powerful workstations with larger memory capacity and high quality screen technology. The demands on the local area network will increase significantly.

28. High resolution CRT screens for staff and library users will be required for many workstation to view documents stored in image format. Large screens capable of displaying a full A4 page are essential for this application. LCD screen technology is not yet well enough developed for prolonged use or to view high resolution graphics. The cost of suitable LCD screens for ordinary PC work is still high. It will be several years before LCD screens replace the conventional CRT technology.

Library information systems

29. Library information systems are developing extremely rapidly at the moment. There is a range of library applications software packages for cataloguing and indexing information. A problem facing librarians and library users is the number of different software packages necessary to access information stored on CD-ROM and other storage media. Each organisation producing CD-ROMs

has its own software to search and select the information stored. No standards exist in this area as yet. Standard ways to access and retrieve information stored on CD-ROMs will emerge over the coming years though how quickly remains to be seen. However, different methods will always remain since different types of information will need to be accessed in different ways, e.g. searching back issues of newspapers will be different to searching catalogues on a CD-ROM.

30. An option is to develop a user friendly front-end system which will guide the user to the source of information required. This systems would probably use Artificial Intelligence and knowledge-base techniques. The system would provide a unified interface to the user which would be easy to use (eg a 'windows' graphic user interface, GUI).

BUILDING INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE

Building requirements

31. The EPiCENTRE must be designed as if it were a single separate building with its own IT infrastructure to deal with its own particular and intensive informatics requirements. The EPiCENTRE will require its own equipment rooms for local area networking equipment, file servers, CD-ROM, optical disks, magnetic tape and disk storage. Rooms will also be required for telecommunications services for remote users and links to other EP buildings.

32. All building spaces must be as adaptable and flexible as possible to allow specialist communications, computing and information systems equipment to be located where and when required. In particular the equipment areas must provide adaptable space to allow considerable expansion of these areas as the IT needs of the EPiCENTRE grow.

33. A raised floor throughout office areas, reading rooms and archive areas is essential. This will allow adequate cable routes for the volume of communications cable and will also provide flexibility in the locations of outlets. The ceiling void depth should be sufficient to allow ample space for electrical and mechanical services and equipment.

Communications cabling

34. The communications cabling will consist of primary cabling between the equipment areas and secondary cabling from the equipment areas to the outlet points. The primary cabling will be mainly optical fibre but a skeleton overlay of copper twisted pair will be useful for some applications. All twisted pair communications cabling, both primary and secondary, will be Category 5.

35. The secondary cabling system will be an equipment independent structured cabling system for all communications applications, including voice, data, video and image. A high density of communications outlets in all areas should be provided for maximum flexibility to allow new systems and services to be installed with minimum disruption.

36. The densities of outlets in each area should be as follows :

a. 4 no. per desk in the reading rooms
b. 8 no. per 10 m^2 in the open plan office areas
c. 4 no. per person in the cellular offices

All connectors will be the standard RJ 45 for all communications applications, including voice and data.

Communications cable distribution

37. The communications cable distribution must be coordinated with all underfloor services including the electrical distribution. Electrical power outlets and communications outlets should be provided at each point. Horizontal cable can be loose laid on the slab. There is no need for tray or trunking. This makes more effective use of the underfloor void. It is essential to mark out dedicated communications cable routes on the slab and coordinate these with other underfloor services.

38. Sufficient space should be provided in dedicated communications risers for vertical cable distribution to accommodate initial and future communications cabling requirements. Proper coordination and careful design of the communications cabling and electrical services - power, lighting, air conditioning - is essential to minimise the likelihood of possible interference and achieve electromagnetic compatibility.

39. Tertiary cable from the outlet point to the desk is the most visible part of the communications cabling system and needs careful consideration. In office areas the cables will terminate in floor boxes. Desks should be provided with cable management for power and communications cables. The desks will also require storage space for PC equipment and other equipment such as communications equipment, power supplies. Some desks may have a single PC, others may have several PCs. In the reading rooms the cables will terminate within the desks.

LIBRARY MANAGEMENT SYSTEM

40. The EPiCENTRE will require an automated library management system for the benefit of users and staff alike. The library management system will be fully integrated, computerised and run on the EPiCENTRE network. It will provide a 'user friendly' single point of entry to all EPiCENTRE computer facilities from a 'Windows' platform using a 'graphic user interface' (GUI). This will be available on all PC terminals in the EPiCENTRE.

41. The facilities will include access to:

a. the catalogue
b. the lending system
c. on-line databases
d. CD-ROM servers
e. file servers
f. software packages for word and data processing
g. electronic linking between libraries, library users and library suppliers

42. The library management system will be an 'open system' allowing flexibility in the selection and choice of hardware and software.

Management of existing resources

43. All existing data structures will be processed and converted to the new management system using tried and tested data migration techniques. The GUI will be the single point of access to all previously existing data structures. The seamless integration of the EPiCENTRE's existing resources with new facilities in 1997 and later is crucial to the success of the EPiCENTRE.

Access to remote services

44. The library management system will support the Z39.50 protocol for database enquiries across multiple databases, without the user needing to know the nature of the remote systems. Z39.50 is the current standard developed by the international library community for the purpose of searching unfamiliar data and has been supported by the European Union.

John Wittenberg
4 May 1994

European Parliament's

Informatics and Telecommunications Architecture

1. The Objectives

The informatics and telecommunication systems have to respond to the dispersion of the working places of the EP and the need for easy access for members, officials and European citizens, independent of their location.
The informatics system should respond to the need for handling all the official European languages correctly and equally.
The informatics system should integrate the various kinds of information : data, image and voice.
The informatics system should be : reliable, user friendly, available and secure.
The informatics system should respond to changing user needs and exploit new technology and services, with maximum cost-effectiveness.

2. The Infrastructure

The informatics system will consist of intelligent work-stations and servers connected via a robust network covering the Parliament working places and, through national networks, the whole EU territory.

The intelligent work-stations will dispose of user friendly interfaces and enough power to act as agents of the users (the user explains what he needs and the agent knows how to find it).

With today's state of the art, work-stations would be powerful PCs with graphical user interface, compatible market winner packages and tailored user agent software that will permit transparent access to information located in other environments.

The servers will be computers and basic software suitable for the services they offer, hosting related data and serving a group of users connected to them via the network.

With today's state of the art, servers would be minis with standard or market winner operating systems and RDBMS software chosen on the basis of suitability for the services offered, reliability, security, power and price criteria.

The network will consist of local area networks for local user communities, inter-building and inter-city high speed networks, all following international open standards, chosen and calculated to handle the Institution's data, images and voice traffic.

With today's state of the art, the network would consist of 10Mb/s LAN's, high speed (100Mb/s ?) LAN's and a high speed wide area network.

3. The services :

The services will be classified as common shared (for all users) or local (for specific user groups), or individual services.
Common shared services will be located on central servers, local services on local servers and individual services on the work-stations.

Reliable and efficient Applications Programming Interfaces should be adopted to assure program's communication between servers and/or work-stations in providing the services to the user.

Important common services :

* data dictionary containing all necessary attributes and location of the data of the institution so that everyone uses them correctly and accurately;
* general electronic mail service with users directory;
* uniform database access service (defining unique user interface and database interrogation language);
* general document repository where any user will easily find any document existing in the institution and for which he has the necessary authorization (joint with an archive system);
* library of application re-usable components for use by all application developers;
* central back-up service;
* disaster fall-back service.

4. The organisation :

a. A decentralised organisation should be implemented :
   * DIT will be responsible for defining the general strategy, architecture, rules for compatibility and integration, and for following the functioning of all central servers and common services.
     DIT will also be responsible for authorising local developments as compatible and matching the general informatics structure and verifying and certifying this compatibility.
   * Each local community will be responsible for the functioning of their servers and applications and for keeping the rules for compatibility and integration.
   * Users will own the applications they are using and be organised around a responsible user owner by application. User owners monitor the quality of the application and ask for improvements to the providers of applications (local or DIT developers).
   * For common services a users committee can be established by service to monitor the quality of the service, define new useful functions and consult DIT for useful improvements.
   * In the DIT and in the user support group a service manager will be nominated for each common service who, in collaboration with the users committee, will act as service owner.
   * At the level of the institution a steering committee will propose to the Secretary General each year the priorities for developments and monitor their execution each semester.

5. The basic rules of working.

The use of market packages is preferred over application development when possible.
Effort is made to use as much as possible the common shared services and keep separate the changing from the stable functionalities.
Applications development is done jointly with users in a cost effective way following the object oriented approach, using client-server model, case tools, program generators and prototyping.
The applications and/or services and the responsibility of their functioning should be located as close as possible to their users.
The data, although governed by the general data dictionary, will be located as close as possible to their users and under the responsibility of the users that create them.

6. Telecommunications

6.1. The EPINET network

EPINET II is a private, X.25 based, packet switched network, providing synchronous and asynchronous interfaces via PADs. It links in triangle the three working places of the EP and is the backbone for all data transfers. Routers for the interconnections of local networks, front end processors and communication servers are linked to it.

In the near future (2nd half year 1994) EPINET III will be installed. It will consist of 3 fully redundant multiplexors (hot stand-by) with an increased capacity of 2Mbps; it will connect the PABXs and support the X.25 and LAN data transfers. The capacity will be shared as follows:
512 Kbps for the connection of the LANS
128 Kbps for the connection of X.25
and the rest for the PABX: voice and fax.
This allocation will change according to the traffic.

6.2. The Local Area Networks

The local area networks for local user communities are of the ETHERNET type and are installed in practically all buildings. They are interconnected by Bridges between buildings and by Routers (ETHERNET/X.25 - EPINET) between Luxembourg, Strasbourg and Brussels.

It is planned
- to replace the Routers and Bridges by equipment supporting the SNMP (Simple Network Management Protocol);
- to increase the capacity, especially with regard to the success of EMAIL and its use for document exchange and the rapidly growing number of client/server applications;
- to change the cabling from "fine" Ethernet to twisted pair cables (10 Base T) and fiber optics.

Networks have to be managed with care. Adequate support and supervision is needed for:
- error detection and interventions
- management of configurations and heterogenous networks
- quality of services
- accounting (statistics)

7. Office systems

Office systems serve to create, process, transmit, print and archive documents. As the information management systems they rely on the same infrastructure as described: same networks, same hardware and the same general software.

The architecture's principal role is to define the manner in which documents can circulate efficiently.

a) Text processing

The EP has chosen Word Perfect and the WP format is in general use as an exchange format between the European Institutions. In order to harmonize the style of documents produced by the institutions, a set of norms has been defined, called EUROLOOK. A series of problems subsists for the exchange of composite documents comprising text, tabular material and graphics.

b) Documents not requiring revision are being exchanged as well by FAX because of its universality (e.g. the number of fax machines installed went up within 4 years from 120 to 1700).

c) Electronic Mail is the preferred medium for document exchange and several services analogue to those of postal services are being offered like mail boxes, forwarding mail. The obvious advantages are the speed and the wealth of formats.

At the moment two systems are in use:

- Word Perfect Mail
  The majority of officials are registered in WPMail and use this tool. Exchanges of parliamentary documents between various departments (committees and sessional services) are based on WP and WPMail.

- OVIDE Mail
  EP Members and some staff use the electronic mail of OVIDE, the videotex information system.

A gateway exists between these two E-Mail systems.

8. Exemples of the existing Information Systems

8.1. EPOQUE

EPoque (European Parliament On-line QUery system) is a comprehensive and public database of European Union documents and procedures. At the moment it is implemented on a Siemens mainframe.

EPOQUE contains:

- Bibliographic references to documents produced by Parliament and its Members including:

  * session documents
  * legislative and non-legislative procedures

* petitions
* questions posed by Members or Political Groups
* resolutions

(The total number of documents for which reference data is held exceeds 100.000).

- Documents forwarded to the European Parliament by other EU Institutions

- Studies produced by the European Parliament and national parliaments

- European Parliament library catalogue

- European Parliament factsheets.

8.2. OVIDE

OVIDE (Organisation du VIdeotex du Député Européen) is a computer system which has two main uses:

- It allows Members and their assistants to look at a vast range of Parliamentary information which is supplied by several different computer systems in a choice of four different languages - English, French, German or Italian. The information is frequently refreshed so that it is kept up to date and is presented to users in an easy to read form.

- It also has an electronic mail facility, whereby messages and text can be sent between other registered users of OVIDE. It should be noted however that only registered users can send and receive mail.

OVIDE supports the CEPT standards 1, 2 and 3: BTX, Télétel and Prestel; as well as 80 column Teletype. It is a multi-network based on the national videotex or telephone networks, X.25 networks, and EPINET.

Information provided by OVIDE

The core information and services which OVIDE provides are as follows:

1. Electronic messaging

2. Who's Who and on-line telephone directory:

   - a directory of Members, Ministers and Commissioners, Judges, Auditors, Civil Servants and political group staff;
   - the organization of services within the European Parliament and the political groups.

3. Calendar and Agendas:

   - part sessions, meetings of Parliamentary Committees, other European Parliamentary bodies, the political groups.

4. Press articles:

   - briefings of Parliamentary committees, press releases, briefings and record of proceedings at plenary sessions.

5. Press agencies:

   - AFP, Reuter, DPA, Belga, EFE, ANSA and Agence Europe, based on specific registration.

6. Documentation:

   - documentary research for EP documents, subject overviews;
   - available soon - catalogue of EP publications, contents of Official Journal, Commission documents (COM).

7. Electronic forms

   (for ordering documents and for obtaining the MEP communications allowance).

8.3. Management of Parliamentary Procedures

Legislative procedures are handled by several applications based on the above described infrastructure. The most important ones are:

AP/TEC (Actes Parlementaires/Travaux en cours)
manages, on the level of the sessional services and the committees, the parliamentary documents (reports, amendments, agenda, parliamentary questions, etc...) and the steering data concerning these documents; information from AP/TEC updates the EPOQUE database.

and

GEPRO (Gestion de la Production)
management of the production of those documents (the translation, printing and distribution).

The exchange of documents and control data (status, planning data, follow-up) between these applications is assured by a system called EPADES (European Parliament living Document Exchange Server).

Requirements for EPADES were especially

- it must be simple to use,
- give access to many people,
- notify the receiver.

As basis for that exchange, Word Perfect Mail is being used, taking into account that the documents are available in WP format or conversions from and to ASCII files take place.

	today	tomorrow
Operating Systems on mainframe	Siemens BS 2000 V 9	-
Operating Systems on file servers	UNIX V.4 (XPG4)	UNIX V.4
Operating Systems on database servers	Unix of suppliers: e.g. SUN Solaris	same policy: Unix according to the performance
Operating Systems on PC	DOS	WINDOWS 3.1
Word Processing Format for exchanges	Word Perfect 5.1/5.2 WP 5.1	Word Perfect 6.0 f, W. WP 6.0 -> ODA or SGML ?
Electronic Mail	Word Perfect Mail OVIDE Mail and gateway between	native X.400 or X.400 compliant?
Data Base Systems on minis: on PCs:	RDBMS: ORACLE V.6+7 ADABAS V.5 Paradox	RDBMS; Document Archiving (WP compatible) ?
Software infrastructure	4th Generation language: SQL*FORMS 4, NATURAL 2.2; Client/server technology	4GL; Object Oriented Tools; GUI; Client/server technology
Corporate network	EPINET II X.25	EPINET III X.25
Local area network File transfer	Ethernet, TCP/IP FTP: PCTCP 2.11	Ethernet, TCP/IP FTP:PCTCP 2.3

Republic of Macedonia

INFORMATION SYSTEM OF THE ASSEMBLY OF THE REPUBLIC OF MACEDONIA

- Silvija Kotevska, Ministry of Science -

Information System of the Republic of Macedonia

The basic concept of the system objectives, scope and organizational aspects of the Information System of the Republic of Macedonia, was stated in the Information System Development Basis and the Information System Development Program for the period 1987-1990, acts accepted by the Assembly of the Socialist Republic of Macedonia in 1987, at the time when Macedonia was still a part of the Socialist Federative Republic of Yugoslavia. These documents defined the participants of the Republic Information System (the Assembly, the Government, the committees (now ministries), local authorities and public administration), and elaborated the staff requirements for carrying out the system development. In 1990 began the staffing of the Common Information Center, a department formed under the Republic Comitee of Sciencs, Technological Development and Informatics (now Ministry of Science).

The first activities in this period were the designing of the computer - communication network of the Information System, where the technical and technological basis were defined, procurement and installation of the equipment (hardware and system software) for the first phase of the project and establishment of the data communication network.

The network consists from:

- a central system in the Common Information Center - VAX 6320, and a development system μVAX 3100
- a central system in the Republic Bureau of Statistics - UNISYS A12, a development system in the Bureau - UNISYS μA and 5 micro-systems for the local departments of the Bureau - UNISYS μA
- 5 mini-systems at the locations of concentration of several ministries - 2 μVAX 3600, 1 μVAX 3400 and 2 μVAX 3100
- 1 development system in the Ministry of Defence - UNISYS B39
- 9 mini-systems for the local authorities in the communes - μVAX 3100
- over 100 personal computers and 150 terminals.

The communication is carried out via public packat-switching network, leased lines and dial-up lines.

After the separation from Socialist Federative Republic of Yugoslavia and the recognition of Macedonia as an independent state, enormous changes in the political, social and economic sphere, affected also the Republic Information System. A lot of the initial assumptions needed to be redefined; changes of scopes occurred; new requirements aroused. All of these present a great motivation for the further development of the Republic Information System.

Development and Operation of the Asembly Information System

The Republic Information System is divided in two main groups of subsystems:

- functional subsystems, which cover the need for specific data processing, as a support to various ministries, bureaus, agencies etc. in performing their specialized tasks and
- common subsystems:
  - the Office Automation Subsystem
  - the Information and Documentation Management Subsystem and
  - the Subsystem for Asset and Finance Registries, Salary Calculation and Personnel Records,

which are shared between all public institutions - participants of the Republic Information System.

These common subsystems are currently being invoked in the Assembly of the Republic of Macedonia as a support to the modernization and effectiveness of administrative office management, information and documentation exchange and management.

The Office Automation Subsystem in the Assembly of the Republic of Macedonia

This subsystem supports the activities connected with the preparation and realization of Assembly meetings:

- registration of incoming, outgoing and internal documents (draft laws, parliament members questions, Government acts etc.)
- coordination of the internal distribution of incoming documents to competent commissions
- production of documents (agendas, minutes, opinions, reports, obligations, proposed decisions and conclusions) which result from commission meetings
- preparation of draft and proposed agenda and scenario of the Assembly meeting
- preparation of decisions, conclusions, minutes, and other acts of the Assembly.

The subsystem is based upon DEC's ALL-IN-1, which provides the functions of word and document processing, electronic messaging, desk management, time management, communication etc. Some of the existing functions were redesigned to suite the end-users needs, and others were added using ALL-IN-1 programming facilities. All interfaces to the end-user are in macedonian and use the cyrillic character set.

The Information and Documentation Management Subsystem in the Assembly of the Republic of Macedonia

The documents produced during the process of preparation and holding of commissions and Assembly meetings, are temporarily stored in local operational bases, and can be searched and retrieved using ALL-IN-1 select and search functions.

After adoption, full text of commissions and Assembly decisions is stored in a textbase, and they can be accessed using the date/number of the meeting and/or words used in it.

Another textbase is established from full text of legal documents which end the legislative process in the Assembly.

The subsystem is based upon STATUS/F2 from Harwell Computer Power Ltd (now STATUS/IQ Ltd). Searching facilities of this product are very powerful: interrogation can range from single word, truncated word, phrase to structured questions incorporating logical and positional operators.

Text searching and retrieval is organized through question caption panels and macros, using macedonian language and cyrrilic character set, in order to provide a user-friendly environment.

Current State of the Assebly Information System

The development of the Information System of the Assembly and whole support (consulting service, training courses, technical support), is currently being provided by the Common Information Center. As the number of users and their requirements increase, organizing a specialized unit within the Assembly should be considered.

The following hardware equipment is installed at the location of the Assembly:

- 10 terminals (VT220, VT420) connected to the central system VAX 6320 in the Common Information Center
- 4 personal computers (286, 386) and
- 4 printers (9-pin, laser).

As a technical support for the initiation of the functioning of the Assembly Information System, procurement of the following equipment is planned:

- 10 terminals
- 8 personal computers (486)
- 8 24-pin printers and
- 2 laser printers.

So far, the existing equipment is used for word processing and registration of incoming, outgoing and internal documentation, which is in effect for over two years. Interrogation of the textbase of the Government decisions (established via the same subsystems, which are fully operational in the Government for almost two years) also takes place frequently. In the summer of 1993, an access to the ECHO databases was provided.

After several recently held training courses, meetings and presentations of the possibilities of the Office Automation Subsystem, the Information and Documentation Management Subsystem and the Subsystem for Asset and Finance Registries, Salary Calculation and Personnel Records, the managing structures of the Assembly and the staff show increased interest for invoking the information technology in forming, managing and using information, required to accomplish modern and efficient work of the Assembly.

Republic of Hungary

Online Information Services to MPs offered by the Hungarian Parliamentary Library

Though the Hungarian Parliamentary Library functions as a research library open to the public, its most important users are Members of Parliament. It provides various library and documentation services for MPs.

Technical environment

The Hungarian Parliamentary Library has an Ethernet Novell LAN with a 486 file server. As workstations, over 35 AT-386 PCs are attached to the LAN. The network is connected to the Parliament's LAN, which means that library services can be accessed from each workstation of the parliamentary network. The 3 CD-ROM drives are not networked.
We have an X.25 connection distributed by a GBOX throughout the LAN.
There is a dedicated telephone line connected to a host PC through modem, enabling access to our services from the telephone network.
Software: Netware 3.11
Database management: TEXTAR for DOS
Windows 3.1

Services available on the Library's network

94-04-20	Wednesday	10:36:59
*******	SERVICES OF THE PARLIAMENTARY LIBRARY	******
PRESSDOK	Books Catalogues	Word Processors
Address of Self-Govnts		Acquisitions
	HUNPAK On-line Catalogue	Processing
HUNDOK - 1991-94	Purchased Books	Special Coll.
HUNDOK - current	Pre-acquisitioned Books	Reference Dept.
	UN & Parl. Collection	MPs Inf. Dept.
VPI	MPs books catalogue	Legal Dept.
	KardeX	Dir. list
Foreign Law		File list
Hungarian Law	Messages	File print 1
	E-mail	File print 2
	IIF Services	File print 3
KARTOTEK	Manci	File print 4
	T. Ház	
	function	
Hungarian Press Documentation Databases		

This is the main menu. (Of course, in reality it is in Hungarian)

Each entry on the left side of the menu screen represents an online database. Some of these databases are produced by the library, others come from outside. For our indexing and abstracting services we use TEXTAR as a textual database management software. It is a Hungarian program developed by a software house and used by several libraries. The applications that we have were worked out by our library. We defined the record structure, indexing modes, input and output forms etc.

For MPs the most popular databases created by the library are PRESSDOK and HUNDOK.

PRESSDOK is a database containing references to articles published in Hungarian newspapers, weekly magazines and journals. It is updated weekly and enables retrieval of citations by searching fields like journal title, authors, article title and brief abstract. For thematic search a subject code field is also included.

HUNDOK - in structure a very similar database - contains references to articles on Hungary and Central Europe published in international newspapers and weekly magazines.

When searching we can type query words connected with Boolean operators in any of the boxes below.

Source	Author/s
Newsweek+Time	**Smi?**
Words	Year
Parl?*election?	
Code/s	Subject

File name

The example shows a query that will retrieve articles on parliamentary elections written by author whose name starts with Smi and published in either Newsweek or Time magazine. (Note that **?** is used as a truncation mark, * stands for Boolean AND, + stands for Boolean OR.)

A very nice feature of the program is that in each field box we can brows through the index terms using the expand-key and see immediately how many hits we have.
Search results can be printed or downloaded into files for further processing like creating bibliographies for MPs.

There are three additional bibliographic databases available using the same retrieval software TEXTAR:

VPI - containing abstracts of international political journal articles
Foreign Law - containing abstracts of articles of international legal journals.
Hungarian Law - containing references to legal literature published in Hungary

KARTOTEK is a database maintained by the Ministry of Justice which is used to retrieve the Hungarian law in force. This is not a fulltext database. The library subscribes to a CD-ROM fulltext database of the actual legal code. Unfortunately, CD-ROM drives are not networked.

The Hungarian Parliamentary Library made its books catalogues available on the network. Since 1991 we have been entering our new acquisitions in our books database using the TEXTAR software. HUNPAK is an Online Public Access Catalogue (OPAC); the Purchased Books database contains all books purchased since 1991 in a preliminary phase of processing; the pre-acquisitioned books database contains titles that are related to the library's development policy. The library's Special Collections (United Nations documents, foreign parliamentary publications) department also has respective online catalogues. There is a separate database containing the books collection of the Members' Information Center situated in the Office Building for MPs.

Since 1990 serials check-in has been computerized, which allows users to find out if a certain issue of a newspaper or journal is available in the library.

Under the menu item IIF Services we can access the Hungarian packet-switched network. This is how we exchange electronic messages nationally and internationally. Through this X.25 line we can login into remote databases like the National Szecheny Library's OPAC or use online services of the national information infrastructure. We access different Hungarian and international gopher services. We plan to get direct Internet services on top of X.25 using PC/TCP.

The menu item T.Ház calls database containing information on Members of Parliament (age, sex, party affiliation, membership in committees etc.), and their activity in various parliamentary committees.

All online services of the Hungarian Parliamentary Library can be accessed through the telephone network. We use a communication software called Co/Session to enable remote access. In the library we have the host program of Co/Session running on a PC connected to the LAN as a workstation. The remote user running Co/Session remote can login to our LAN and use it as if he or she were sitting at a workstation in the library. (Of course, there is a little difference in speed due to the 2400 baud rate which can be upgraded later.)

Using the same communication software our LAN can also be accessed through X.25 line with 9600 bps at the moment.

On the right side of the main menu there are utility programs available for our users. Word processors under DOS and also Windows. Here are the proprietary applications for the various departments of the library. (Access protected by passwords and rights.)

In the bottom right the user can have a directory listing of his or her own home directory, can view a file, or print one with different code conversions. This is necessary because we use various printers and not all support the 852 code page.

Conclusion

The above mentioned services cover one part of MPs information needs. We are aware that Members' priority is getting information on the work of parliament which is covered by the parliamentary management system. However, the library can provide them with extremely useful background information. This is the way we have to go by making it even more up-to-date and complex.

Kingdom of Spain

History of the Information system of the Senate

The history of the information system of the Senate begins in november 1986, when the Computer Systems Direction is created.

The initial targets of the Direction were:

- Installation of office applications in order to support the administrative works in the Senate (mainly word processing).

- System to support and pursuit the parliamentary activity of the Senate.

- Database with Jurisprudence, Laws and other Norms related with the Regions (CALEX), in due to the character of regional representation that the Spanish Constitution grants to the Senate.

The first acquisitions were stations Questar 400 (BULL), with operating system STARSYS (not compatibles). The word processing STARTEXT was available in this systems. The necesary elements to connect with the mainframe of the Congreso de los Diputados were acquired too. This system is a DPS-8 (BULL), with operating system GCOS-8.

In this system were designed and developed the first data bases and applications, supported by the transactions monitor system DM-IV, and the database management system IDS-II (CODASYL).

In autumn 1988, a mainframe is installed in the Senate (BULL DPS 8000 with operatins system GCOS-8). This system let full utilization of the applications, and the conexion of users from the Parliaments of the Regions in order to use CALEX database.

A laser printing system was acquired too, in order to edit and publish information from the applications. The system elected was the printer XEROX 4050 with the edition system XEROX 6085.

Targets of the plan 1991-1993

In autumn 1990, subjects of the Senate activity (Parliamentary Groups and Departments of the Parliamentary Administration) were inquired in order to know what they needed: terminals, printers, applications and other software.

The reading of questionnaires told us that funcionalities, flexibility and ergonomy of applications had to be enhanced. On the other hand, the internal study of the Computer Systems Direction had detected this others targets to reach:

- To reduce the periods of implementation of applications.
- To improve the communication between the personal systems of the users and the applications in the departamental environments.
- To improve the interchange of information with other Institutions and make easier the access to our data bases.
- To reduce costs of our Information Systems.
- To observe, if possible, instructions of General Direction XIII of the Commission of the European Communities in order to evolve to open systems.

In order to fulfil all this targets the plan 1991-93 was designed. Several purchases of hardware and software were carried forward and applications were developed.

The main problems were related with the integration of all this new systems, and with the old systems that remained.

The purchases were achieved in two phases during 1991 and 1992 by means of call of tenders.

Servers

Hardware

8 servers IBM RS 6000/530 with 64 o 32 Mbytes of central memory and 1,3 Gbytes of hard disk memory were acquired.

Software

- The relational data base management system elected was ORACLE version 6, with SQL*FORMS V3, SQL*MENU and other products related.
- The documentary data base management system elected was BRS version 5.

Personal computers

Hardware

207 Hewlett packard personal computer were acquired. They contained 80386sx, 80386dx or 80486sx processors, depending on the needs of the users and the moment of the purchase. All of them had 4 Mbytes of central memory and differents hard disks, from 40 to 96 Mbytes, super VGA graphic controller and color monitor NEC.

The monitor required an special study of ergonomy because we wished to offer to our users the best conditions: low radiation, high frecuency screen to get images without vibrations, etc...

Graphic user interfaz (GUI)

The GUI that we elected was WINDOWS 3.1. On the other hand, the software XVISION 4.0 by VISIONWARE was installed in every personal computer. This product emulates a X-station in compatible personal computers under Windows. So, it is possible that applications of personal computers as WORDPERFECT, EXCEL, etc... coexist with a variable number of UNIX sessions with differents servers in the user screen.

The personal computers are defined as X-station for the server, and graphic and special functions are available in the UNIX applications.

Software

The word processor WORDPERFECT was elected, and licenses under DOS and Windows were acquired. The DOS licenses were installed in the personal computers of some users that didn't like WINDOWS and didn't need combine information from differents application, e. g. stenographers.

Other applications as EXCEL, HARVARD GRAPHICS, PC-TOOLS, etc..., were purchased too.

Printer systems

93 laser printers Xerox 4030 were acquired. This printers work with HP laserjet II emulation. They can be conected either to the network, or directly by means of parallel conector or with both conexions.

The network

This part of our system was carefully studied because we realized that, today, "*the mainframe is the network*".

The spanish Senate has two differents building close together: an old palace and a modern offices building. Both have a computer cabling system with 10baseT Twisted pairs (four pairs and earth wire).

850 computer conexion points were installed along the two buildings. Each one lets the conexion of two equipments (Pc's, printers, etc...), and two power plugs are included with protection by means of the U.P.S. described in the next paragraph of this report.

The data lines ends in differents distributing cabinets placed in every stage of the two buildings. The cabling system is totally passive, without any electronic active element. The central cabinet is placed in the mainframe room, where is connected with a number of hub's and bridges.

The system can emulate any topology as bus, ring, etc... Our configuration is Ethernet (norm. IEEE 802.3), with TCP/IP communications protocol.

Each element of the network and a wide range of events can be controlled with a network monitor, in order to know the exact situation of each one. Different alarms can be established and statistics of traffic can be obtained.

Uninterrumpted power system (U.P.S.)

This system has two targets: if the external power service interumpts, a variable period of, at least, 15 minutes is available to stop in a correct way all the systems, in order to avoid the problems of sudden crashes. On the other hand, the system protects against micro-oscilations of the power, that are not detected by people, but can damage information systems.

The mainframe, servers and personal computers are connected to the U.P.S. by means of the power plugs in the computer conexion points.

Optical disk storage system

One of the targets of the plan was to obtain a system that let to storage images of Oficial Publications of the Spanish Parliament. In due to the huge amount of information that requires the manage of images, installation of an optical disk storage system was decided.

The main requirement, besides of storage and speed of access, was that the system had to be opened. This meant that it had to serve images to any application under ORACLE, BRS, or written in lenguages used in our UNIX systems (basically C).

The software SCRIPNET, by the spanish enterprise FDM Corporation, was selected. To storage the images, ths system uses two multichargers LMSI mod. 4500. Each device contains five 12" laser disks. The entire system offers 56 Gbytes of storage on-line. This means, aproximately, one million of DIN A-4 pages, scanned with the standard 200 dpi resolution.

The system has two scanning images systems with:

- Hewlett Packard VECTRA 80486sx personal computer with 4 Mbytes RAM and 90 MBytes of hard disk, high resolution 19" screen, compression/decompression card by KOFAX and manipulation images software.
- Scanner Fujitsu M-3096E.
- Laser printer Fujitsu rx 7300.

The elements to access and show the images (compresion/descompression software and manipulation images software) have been installed in 25 personal computers.

Voting system

This system has been supplied by Philips and calculates the results of voting, that are transferred to a personal computer where are stored. The system can obtain different types of statistics and other informations.

During votings, two electronical boards show a geographical map indicating the vote of each Senator.

External access to databases of the Senate

The Senate is conected to public packet network IBERPAC (X-25), and 10 virtual circuits can be established.

The system is able to receive communications via X-28 or X-29 protocols and switched telephone calls.

Actually, 35 Spanish Public Institutions access to the databases of the Senate, and the system is going to be opened to the public.

Access form the Senate to external databases

The authorized users of the Senate access to several external databases:

- CELEX (Comission of the European Communities).
- EPOQUE (European Parliament).
- ARGO (Congreso de los Diputados).
- IBERLEX (Oficial bulletin of the Spanish Administration).
- Others.....

Aplications

Parliamentary activities of the Senate (GELABERT)

This is the main application of the Senate. It focuses the most important aspects of the activity of the Senate: the discussions of laws in Commisions and Plenary Sessions and the control of the Goverment.

This system is the best example of the use together of the different tools for the managing of information that the Senate has acquired.

The system has a relational database (ORACLE), with interactive screens in SQL*FORMS V.3, a documentary database (BRS), with non-experts menus under MNS, and it is conected with the image server of the Optical disc storage system. The main functions of the subsystems are:

- Entry and data management subsystem. This relational database covers the next parts:
  - General Register of the Senate.
  - Support to administrative works related with the Presidence and the "Mesa" (the Collective Direction of the Chamber). This includes edition of agendas and records of meetings, etc...
  - Database with personal, parliamentary and biographic information about Senators .
  - Register of interventions of speakers and report of proceedings.
  - Pursuit of steps of procedures in Comissions.
  - Edition of annual indexes of activities of the Chamber.
- Documentary database subsystem. As a consequence of the entry and manipulation of the information described, a documentary database is created.

The main characteristics of this subsystem is the query by multiple criterias and the use of menus that let non-expert users to recover different datas related with parliamentary activities, and the full text of Oficial Bulletins and Report of Proceedings by means of the access to their images in the Optical disk storage system.

The system storage the next information:

III Legislature (1986-1989):
- Parliamentary expedients: 30.000 documents.

IV Legislature (1989-1993):
- Parliamentary expedients: 35.000 documents.
- Interventions of speakers: 9.300
- Information about Senators: 300 (including incorporations an retreats)

V Legislature (1993-):
- Parliamentary expedients: 10.000 documents.
- Interventions of speakers: 2.800
- Information about Senators: 260

The Optical disk storage system has actually 14.000 Oficial bulletins and report of proceedings of the Senate and Congreso de los Diputados with almost 300.000 pages, of III, IV and V Legislatures.

Legislation and Jurisprudence related with the Regions (CALEX)

This database stores more than 51.000 references of Legislation of the State and the Regions (from the Parliaments and the Goverments). More than one thousand of processes in the Constitutional Court related with competences between the State and the Regions are stored too. The steps of the processes and the sentences are included in the database.

Information about activities in the Regional Parliaments (ALCA)

More than 900 references (since summer 1992) are stored in this documentary database.

General file of the Senate

The computer system has two parts:

- Historical. References to 13.600 historical expedients (XIX century) are stored in this documentary database, with 25.000 images of documents accesible from the users menu.
- Modern. 900 expedients of the Constituent Legislature, 4.000 of the First and 8.400 of the Second Legislature are stored.

Library

The integrated library system ABSYS v2.0, by the spanish enterprise Baratz, was installed to manage the library of the Senate.

The application manages acquisition of books, borrows and cataloguing using MARC format. There is a module to look up for readers.

16.000 MARC references are stored actually, and there is 30.000 references to volumes of Arteche colletion (XIX century) and 25.000 references of other books from the XIX century library.

Documentation related with European Communities

A documentary database has been implemented in order to manage information form different sources: CES and COM documents and other documentation related with European Communities. Actually, more than 20.000 references are stored in this subsystem.

Other Documentation

The catalog of periodical publications is managed by the Department of Documentation by means of a documentary database with 900 references. There is another documentary database with more than 12.000 references to articles, reports, and papers.

Thesaurus EUROVOC

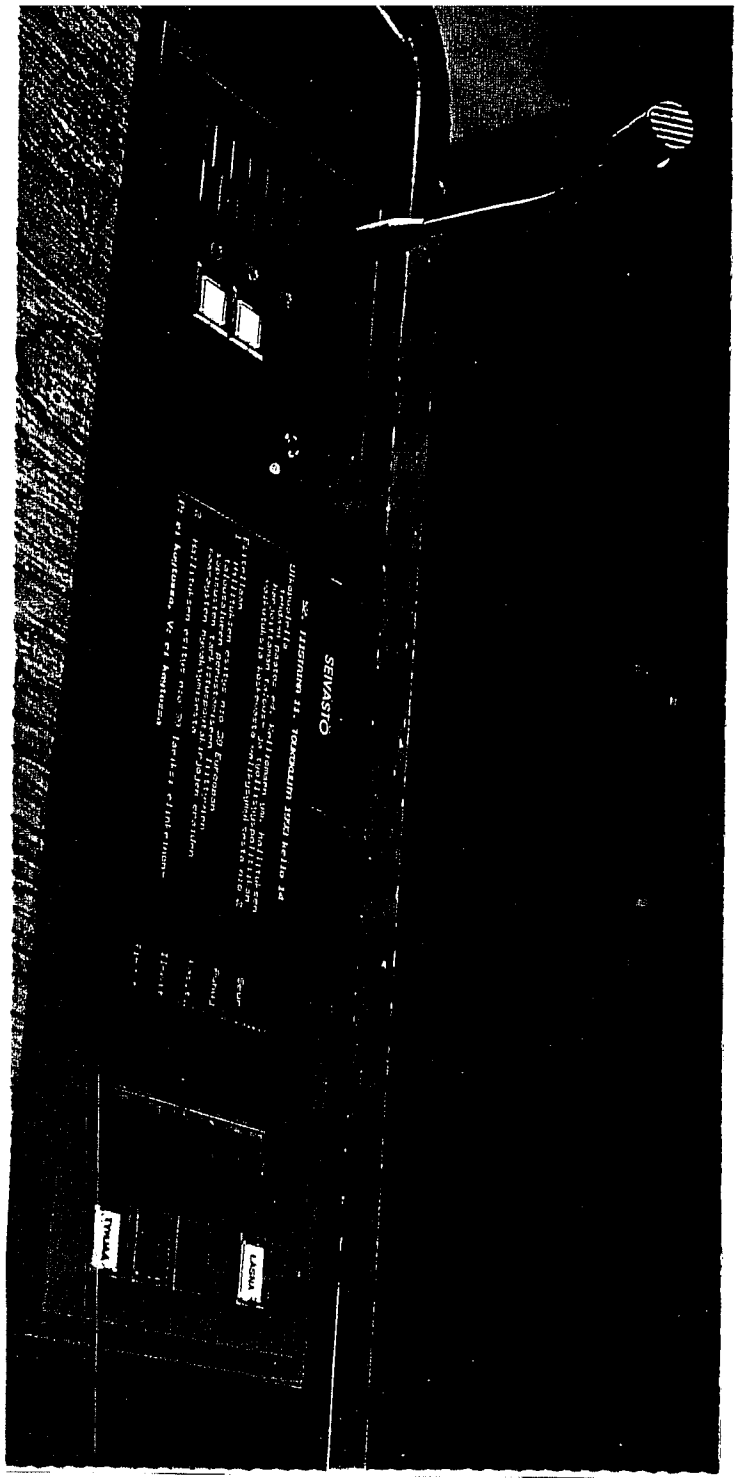
The thesaurus EUROVOC, by the Comission of the European Communities, was adopted by the Senate and Congreso de los Diputados for all the documentation systems . An ORACLE application was developed to manage it with the next features: the system accepts files in FORMEX format (actually version 2.1 with 11.000 terms is being used) and is able to accept other terms that complement the thesaurus: a list of cities and villages of Spain (almost 8.000), and a complementary list of terms and relations that are not included in EUROVOC but are necessary to catalog documents in the differents documentation systems of the Senate.

This thesaurus can be queried directly by the user or from the applications concerned.

Other applications

- Registers of different administrative units: Presidence, Parliamentary Groups, etc...
- Human resources management application.
- Payrolls
- Accounting
- Recruitment of some groups of personal
- General inventory of the Senate:
    - Colection of painting of the Senate (more than 175)
    - Other historical heritage
    - Inventory of office goods.
- File of medias (130) and newsmen authorized (2.300).

Republic of Finland



INFORMATION SYSTEMS IN THE ASSEMBLY HALL OF THE FINNISH PARLIAMENT

According to the Constitution Act of Finland, sovereign power shall belong to the people, represented by Parliament convened in session. This power is executed by plenary sitting in which all representatives participate.

Matters are brought before Parliament either by the Government or by initiatives from representatives. Government proposals constitute the main business of plenary sittings.

Before decision in plenary sittings, matters are prepared in committees responsible mainly for the same areas as the relevant ministries. A plenary sitting considers matters on the basis of proposals from the committee reports.

In voting, the parliamentary system is used where proposals are set in opposition to each other, a representative being free to vote "Yes", "No" or "Abstain".

In plenary sittings several hundreds of votes are carried out each year, meaning that proper functioning requires a fast and reliable vote-recording system.

F.G. Lönnberg 1993

The technical equipment of the assembly hall of the Finnish Parliament was replaced in Summer 1992. The new technology is based on three interlocking systems as follows:

VOTING SYSTEM

- records voting and results for the minutes of the plenary sitting
- records representatives present and lists them for the minutes
- displays voting results on the boards installed on the walls of the assembly hall
- records voting results on paper and in a data base.

The reliability of the voting system is ensured by a backup computer which switches in immediately in the event of failure.

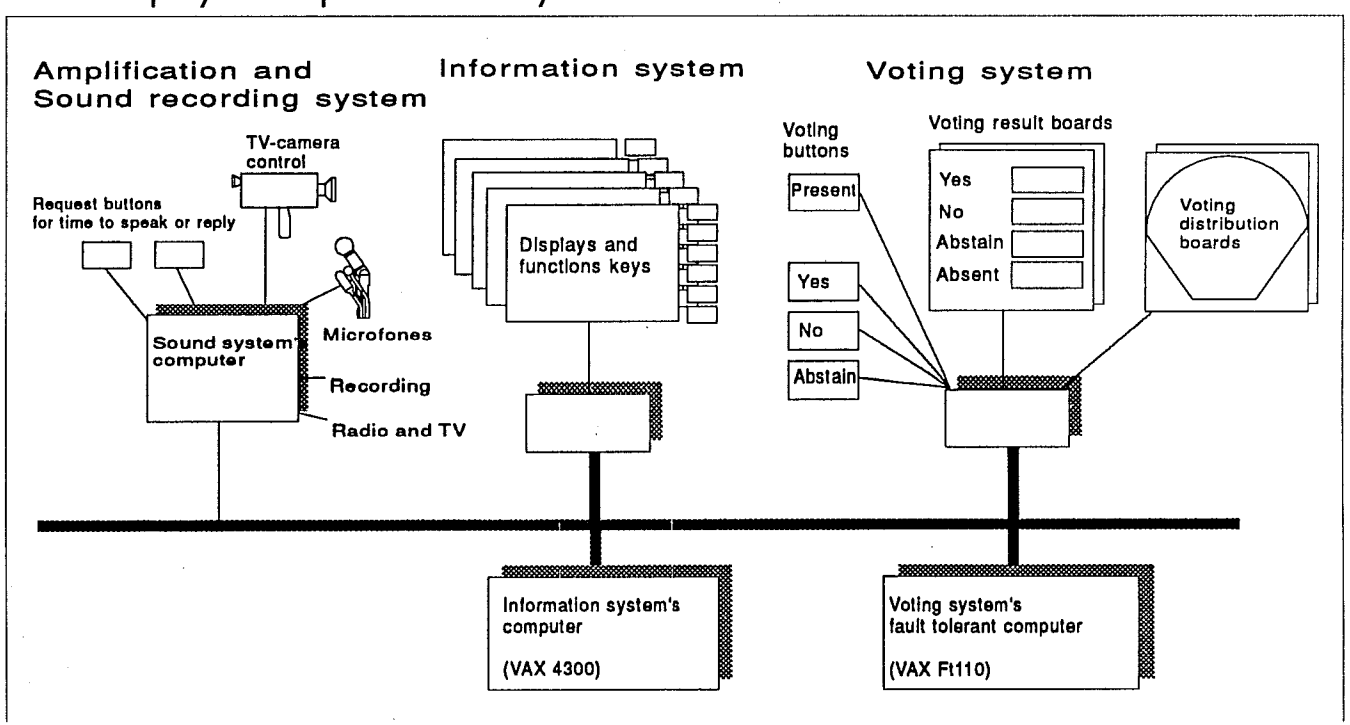
INFORMATION SYSTEM

provides representatives with
- agenda for the day's plenary sitting
- details of a matter for debate
- decisions already made in plenary sitting
- representatives' announced intentions to speak during the plenary sitting
- general communications and announcements.

Data available on the information system are called up through a recessed visual display and operation of keys.

AMPLIFICATION AND SOUND RECORDING SYSTEM

- provides amplification according to the assembly hall needs
- records speeches for the minutes of the plenary sittings and other purposes
- operates requests for time to speak or reply
- operates timing of speeches and the related warning lights
- operates the connections for the central radio, television and microphones.

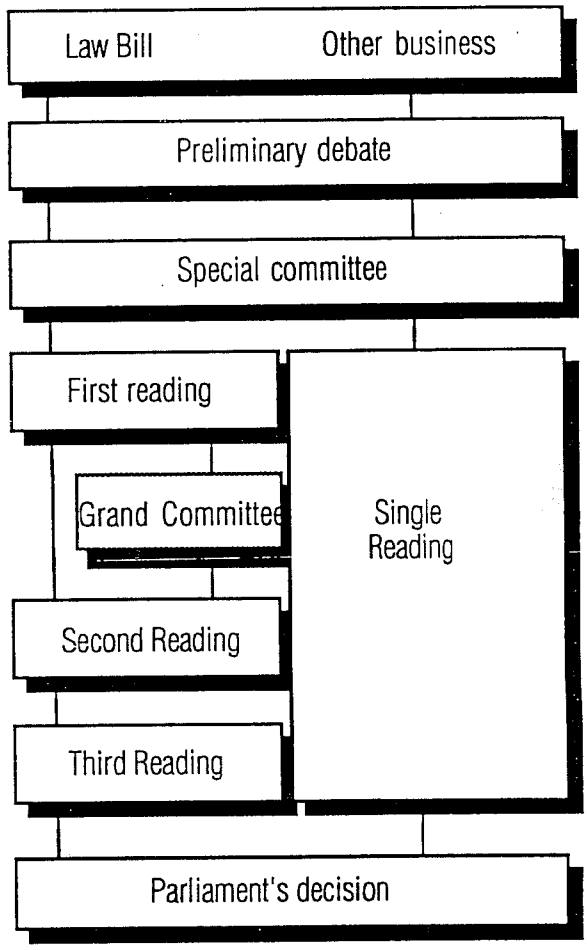


The main suppliers of the assembly hall data equipment were:
Tietotehdas Oy, Studiotec Ky, Teleste Oy and Digital Equipment Corporation Oy.

The Committees

Grand Committee
Constitutional Committee
Legal Committee
Foreign Affairs Committee
Finance Committee
Economic Committee
Labour Committee
Administration Committee
Education Committee
Agriculture and Forestry Committee
Committee for Social and Health Affairs
Communications Committee
Defence Committee
Environment Committee

Handling of Parliamentary Business



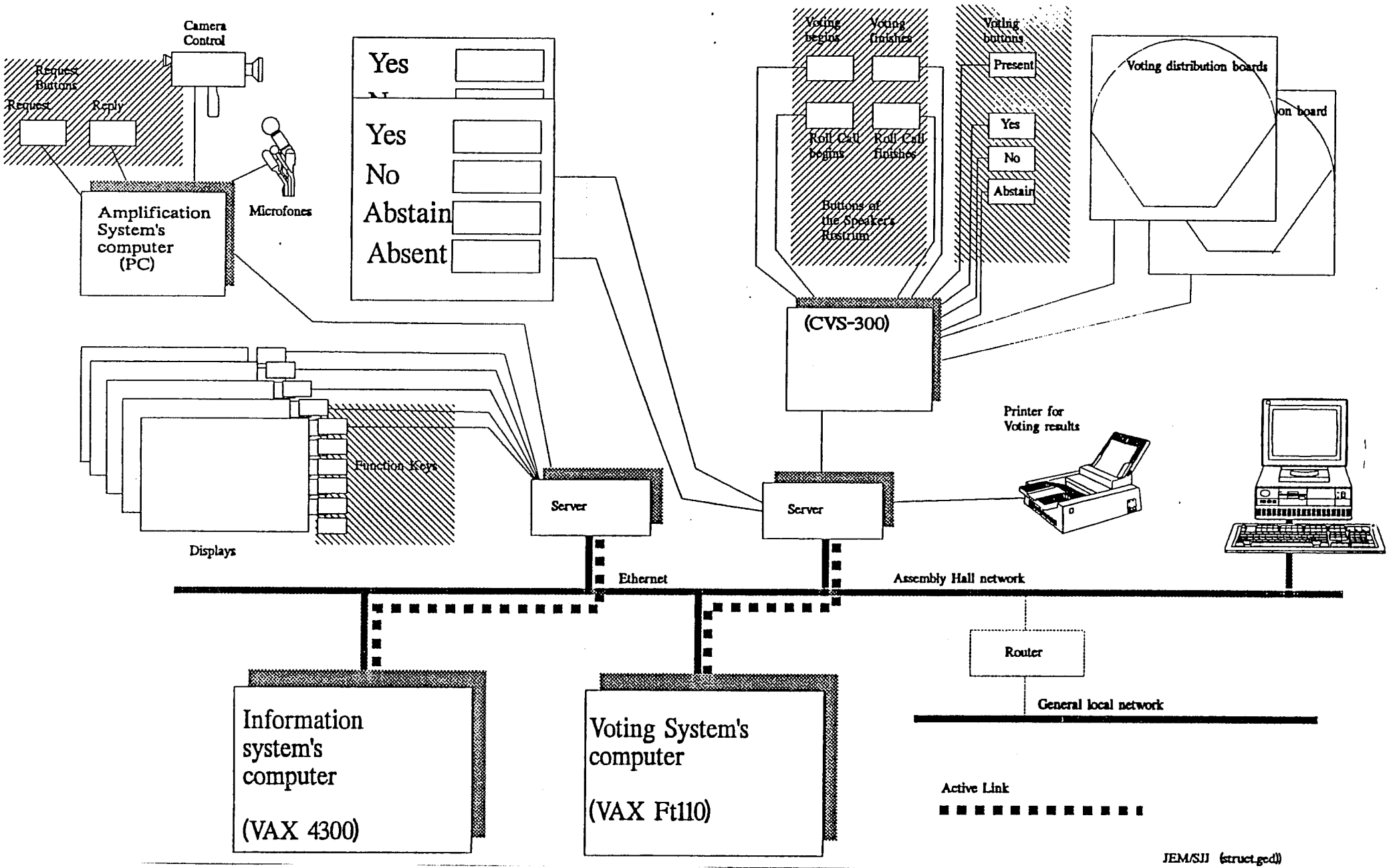
Relative strength of parties 1991

Centre Party	55
Social Democratic Party	48
National Coalition Party	40
Left-wing Alliance	19
Swedish People's Party	12
Green Parliamentary Group	10
Christian league	8
Rural Party	7
Liberal Party	1

Tietotehdas

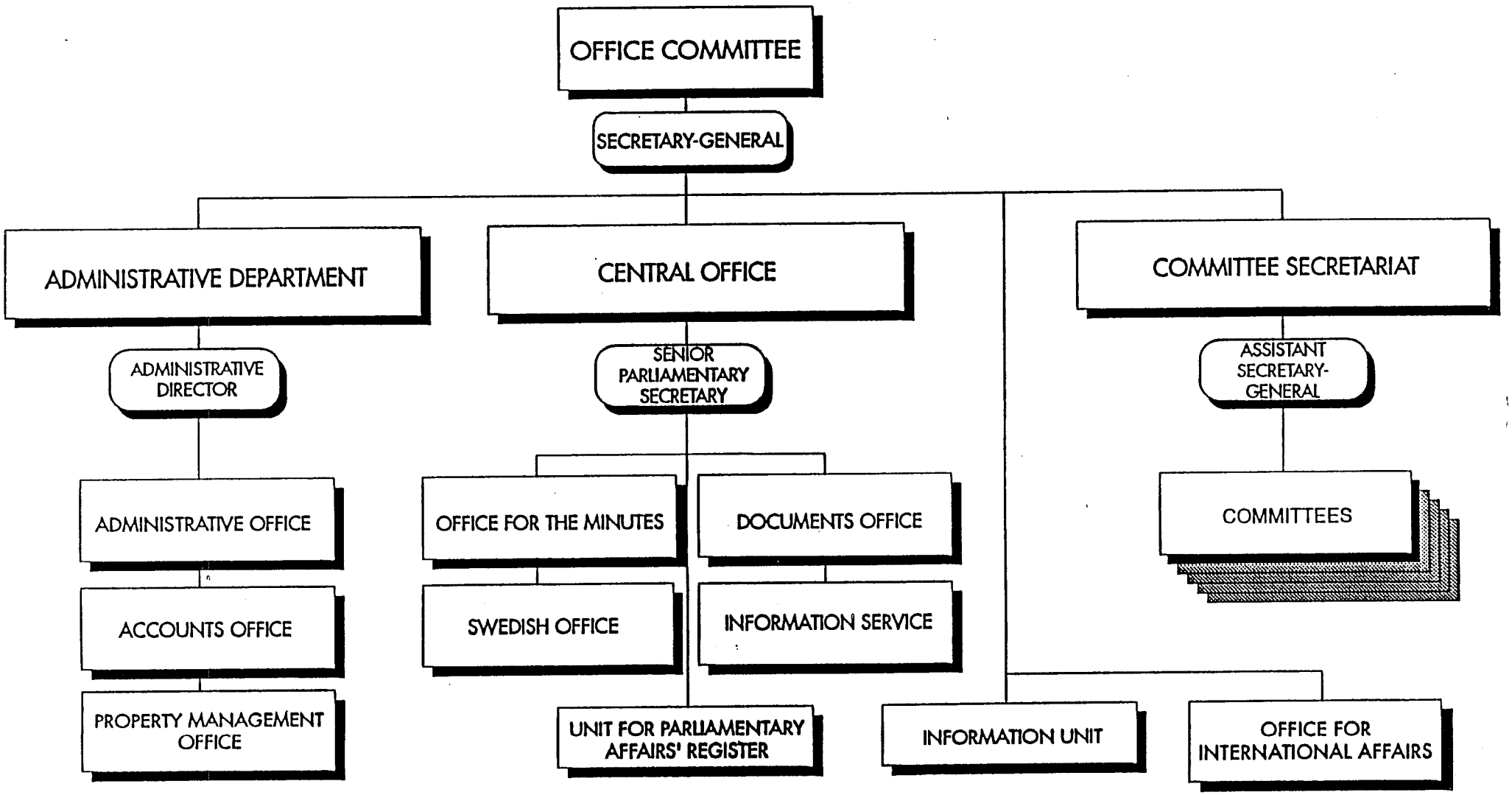
Structure of the Assembly Hall Systems

3.11.1993



JEM/SJJ (struct.ged)

ORGANIZATION OF THE PARLIAMENTARY OFFICE



United Kingdom of Great Britain and Northern Ireland

NETWORKING SERVICE LEVELS

by Richard Morgan, Computer Officer, House of Commons, United Kingdom

Paper Presented to the Information Technology in Parliaments Conference
Pułtusk, Poland, 20-22 June 1994

HISTORY OF THE PARLIAMENTARY NETWORK

The House of Commons has about 1,000 staff serving the needs of 651 Members and 1,300 staff working directly for the Members. Members can purchase equipment for themselves and their immediate staff out of an annual allowance known as the Office Costs Allowance. The House is not responsible for the provision of this equipment or of software and other services connected with it. Members can purchase whatever they like from this Allowance.

The House of Commons Commission (comprising half a dozen Members) is responsible for the overall management of the House and has a budget to cover expenditure for the 1,000 staff of the House (the administrative Departments of the House).

The House of Lords is an entirely separate body with its own structure and budgets. It includes at least 200 regularly attending Members (Peers) and about 310 staff.

In July 1990 the Select Committee on House of Commons Services issued a report entitled *Computer Services for Members* (Session 1989-90, HC614). The Report came to the view that:

> *the House should now adopt as long-term policy the aim of providing the best available information technology services for Members from central funds, while at the same time preserving a reasonable degree of individual discretion on the choice of system for use by Members and their staff.* (Report para 28(c)).

The Report went on to discuss a number of ways in which networking could be provided and recommended that the relevant Officers of the House and other bodies should identify

> *the type and capacity of cable required to meet the long-term needs of the House for the transmission of all forms of data and to produce costed proposals for installation of such a cable system.* (Report, para 44(i)).

On 8 July 1991, the Report was debated. During the Debate the Leader of the House proposed:

> *to ask the House of Commons Commission to authorise the limited amount of expenditure that is needed to allow the initial studies proposed by the [Computer] Sub-Committee to be undertaken as a matter of urgency.* (Col. 730).

The House of Commons IT Steering Committee, which represents the administrative Departments of the House, had already commissioned a network study to cover its own administrative requirements in linking together existing small networks (subnets) for the

Library, accounting functions, etc and the Commission agreed that this study should be expanded to cover the wider remit proposed by the Leader of the House. The study also included the House of Lords' requirements. In the Autumn of 1991, the consultants, Sema Group Consulting Limited, produced their study (*House of Commons Network Strategy*) which recommended the way forward, including separate data and video networks.

Preparatory work was undertaken on the network as proposed by the Leader of the House in the debate on 8 July 1991. This included the installation of flood wiring in a new Parliamentary building during its refurbishment and the procurement of the network equipment, while preserving the House of Commons Commission's position by making clear that the network, if it is to be installed, still requires full approval of the House.

Work on the pilot commenced in September 1992. The pilot provided a data network to Members and their staff in the one building, and administrative staff of the House of Commons. A few other Members were also connected, many of these by modem. The initial services provided were electronic mail, outgoing fax, access to retrieval services such as POLIS (the Parliamentary On-Line Information Service), and a Bulletin Board service.

The pilot PDVN ended at the beginning of March 1994 when the Information Committee concluded their programme of evaluation. By then, more than 420 users were making use of its facilities, considerably more than the 150 originally estimated. The new Report, entitled *The Provision of a Parliamentary Data and Video Network* (Session 1993/94, HC237) was published on 10th March 1994.

The House of Lords through its own Library and Computers Sub-Committee is also considering the network.

If the Commons Information Committee's recommendations are accepted, and the Lords approve the network, it could grow to encompass the Palace and the remaining outbuildings of the Parliamentary estate, bringing the total number of users to between 3,000 and 4,000.

2. THE PRESENT POSITION OF THE NETWORK

From such tentative and experimental beginnings the network has now grown till it has about 532 users of whom only 27 are Members and 130 their staff. There are also 29 users from the House of Lords, of whom 5 are Peers, 3 Peers' staff and the rest staff of the House, though at present the House of Lords has no structured cabling installed.

The Debate in the House of Commons is expected to take place in July 1994. If it is favourable, the potential number of users in the House of Commons could be perhaps as many as 3,000. The House of Lords has also to go through its approval process and could add up to another 1,000 users to the network. In the event that neither House approves the network for Members, it will presumably mean that the existing 100 Members and Members' staff in the House of Commons and three or four Peers would come off the network and the network would rise to no more than 1,000 users in both Houses among the administrative staff.

3. SERVICE LEVELS

The network has from the outset attempted to provide a service 24-hours a day, 7 days a week. We find, for example, that Members who return to their constituencies at the weekend can find it useful to be able to access the network on a Saturday or Sunday. One Member described how typically he might be contacted by a local radio station on his return to his constituency and need some urgent files to study before appearing on the radio station on Sunday morning. Scheduled down-time at weekends is therefore unpopular.

The same may be said for scheduled down-time when the House is in Recess. The Library of the House of Commons find that whereas when the House is sitting most Members leave for their constituencies by Friday afternoon, when the House is in Recess the demand for services often goes much later into Friday evening.

Nevertheless, scheduled down-time is essential and unscheduled down-time also occurs. Scheduled down-time includes a regular monthly test of the power generators in one of the buildings of the Parliamentary Estate. It includes other electrical and building maintenance work, and work required for the network itself when modifications are made to the hubs and secondary distribution points, uninterruptable power supplies are installed, major software changes take place, etc.

It is the nature of the network that it includes a large number of subnets within one or other of the Departments of either House. Although these subnets are as autonomous as possible, it is often convenient to link other users who are geographically in the same area to a secondary distribution point or hub within a subnet. Thus the maintenance required for the subnets may have an impact on the availability of the service in that area.

The fact that the service includes dial-in users as well as those directly cabled means that sometimes users can obtain access to the system while their local secondary distribution point is out of action by dialling in. We have also on occasions been able to offer users the use of our training room when their own particular area of the building is temporarily out of action.

Unscheduled down-time includes a variety of faults and problems. Difficulties we have encountered to date include the failure of a contractor to reconnect a cable which had been re-laid and the spilling of hydrochloric acid from a floor above into one of our secondary distribution points.

We run a helpdesk to collect information on all known faults and assist users in putting them right. In recent months we have received from 137 to 260 calls per month. We have as yet no simple explanation for the fluctuations. Of these about 30 or so related to the PCs and their applications software but were not to do with the network as such. Another 14 or so were simply enquiries from people not on the system about the availability of the network. This leaves about 90 to 210 calls and an average therefore of from 4.5 to 11 calls a day. This does not sound much, but some of these calls took an hour or more to sort out. In the heaviest month, one call took over 3 hours, 13 calls took 2 hours and 16 calls took over 1 hour. Some of these involved visits to the users to see at first hand what the difficulty was.

4. SERVICE LEVEL AGREEMENTS

Since our users obtain their PCs and their basic applications software such as wordprocessing from other sources, we need to define precisely what it is we are providing. It is no less important to be quite clear what the user is providing. We have, for example, had Members seeking to come on the system whose machines are frankly either inadequate or of such unusual architecture that we could not accommodate them without a disproportionate amount of work. We obtained approval from the Information Committee to take on the network only DOS, Windows and Apple Macintosh machines. This last was by way of an experiment to see what the problems were in accommodating machines which were not standard IBM PC-compatible. We have reported to the Committee that it costs about ten times as much to accommodate an Apple Mac as it does to accommodate an IBM PC-compatible and we have recommended that, if the network is approved for Members, support for Apple Macs should be phased out by the next General Election in approximately 2 years' time. There are no Apple Macs on the administrative side of either House.

The obligations of each side to the other are set out in a fairly formal document called a Service Level Agreement. It defines the availability of the service, it states what we on our side will do, and what the user will provide. It lists his hardware and software with the implication that we have checked and find this adequate for allowing him to come on the network. It imposes an obligation on him to inform us should this configuration change. We also specify security procedures with the possible sanction that a user who disregards these may be reported to the Information Committee with the recommendation that he be barred from the network.

It also lists the goods and services which we provide him. These include the network card for directly linked users or the modem for remote users as well as the network software. All of these remain the property of the House. So far we have had no necessity to recover these items from a Member who leaves the House, but I anticipate that we may possibly have some difficulty at some future date. It will be noted that the items may be taken by a Member to his constituency office or home for use there. We try to record where the items are but clearly this can never be perfect.

We also hold a list of those who are authorised to use the system on behalf of a Member. Connected with this is a separate list showing the training courses provided. When a user goes on a training course, we take the opportunity while he or she is away from the desk to put the network card on the machine and make the necessary software modifications. In this way the user can then return to his or her machine confident that the machine can immediately be used to put into practice what has been learned on the course.

When it comes to Departments of the two Houses and their various subnets, we do not have the problems that the equipment may no longer be on the Parliamentary Estate, but clearly the relationship between the subnet and the main network it more complicated. There will be

servers and gateways on the subnet which may also provide some services to other users in the same geographical area. There is more likelihood that the subnet may itself require to be down at certain times and we want to ensure that this is known and understood and that notice is given to any other users who will be affected. It is therefore essential to identify a key manager of the subnet who can act as a point of liaison and can attend meetings as often as are necessary to clarify these points. The precise configuration of both the network and its relationship to the subnet need defining and there must obviously be a greater emphasis on security since the relationship is more complicated than for a simple single user. There has also to be a mechanism whereby the Service Level Agreement can easily but formally be changed by agreement with both sides.

There have been areas of friction between ourselves and the subnets' users which have generally arisen from an imperfect understanding by one side of what the other side is trying to do. We have addressed these and will continue to do so in the hope that we can iron out these difficulties. Friction of this sort takes up a good deal of time and energy on the helpdesk and prevents us from proceeding with vital development work. I cannot pretend we have got all this right, but we are hoping to learn.

5. THE FUTURE

So far the pilot has been run with our own resources of 3 full-time IT staff, together with one member of staff from our own contractor and a separate member of staff simply taking the calls. The staff numbers should the network be fully approved and 3-4,000 users come on it would on this basis be very high. We have looked at ratios of users to network staff and find the most commonly used ratios are 50:1 or 100:1. Our own ratio which I regard as barely adequate is approximately 100:1. Unfortunately, comparisons are difficult in this area, since most networks offer assistance to cover users' PCs and their applications software such as wordprocessing as well as network applications.

I have made tentative enquiries with suitable companies as to whether the helpdesk facility can be outsourced. Preliminary indications are that it can and that there will be substantial savings in so doing. However, any decision on this must wait until the Houses have approved the full network.

23 May 1994 reports\may\service.lev\at

Republic of Slovenia

INFORMATION SYSTEM OF THE NATIONAL ASSEMBLY OF SLOVENIA

SUMMARY

The article describes the basic guidelines of the development of information system of The Parliament of the Republic of Slovenia (in short, the Parliament) in the processing of documents as well as the use of public data bases. The description also deals with how other systems are used in exploitation of information and in making business activities more economical, as well as with the prospects of the system development in future.

The premises of the National Assembly are the hub of large flow of often highly important information troughout the country.

THE GENERAL CHARACTERISTICS OF THE INFORMATION SYSTEM OF THE NATIONAL ASSEMBLY

The basic guidelines of the information system of the National Assembly are to process data only once, at its source. For this kind of work, it is necessary to standardize the procedures and documents, to unify code-books, and to assure a standardized technical and software foundation. These form the basis for preparing future uniform work in public administration and for treating unformatted documents, and they open up possibilities for more efficient data exchange in the state administration.

Another important guideline is that all larger databases of unformatted documents (full text) should be stored in the computer of the Government Information Centre, while standardised documents, code books, etc., should be accessible from any location via the computer network.

The third guideline in introducing information flow in the work of the National Assembly is to train users to use the information system. This requires that they be acquainted with the details of its functioning. For this approach to work, we will have to create an appropriate organization, and to found and information centre and a "help desk" (user assistance).

In the end phase, we would like gradually to provide, using a uniform methodology, all deputies with a uniform method of work and message and document exchange, regardless of where and when the information is received and transmitted.

THE TECHNICAL BASIS

We regularly augment our technical equipment in the National Assembly with new PCs, which we forward to users immediately after testing and installing standardized software. We are currently using PCs of various capacities. Since all organizational units are equipped, we have begun supplying equipment to leading staff of the National Assembly. For now, we have 240 PCs and 110 dot matrix and laser printers.

Last year, a local computer network was assembled, which is linked via X25 to the local computer network of the Government Information Centre. For the moment, 150 PCs are linked to the network.

Connection to the Information Centre allows; access to the host computer (STAIRS) and to E-mail (X 400); access to the public data network SIPAX, and through this to public databases at home and abroad; and access to the postal distribution office and applications on the local computer network at the Information Centre.

DATABASES

The National Assembly maintains three public databases, which are installed at the Information Centre. The bases are accessible to all those connected to the local computer network.

Initially, a DOKS base for the needs of the National Assembly and for the project of overseeing the work was constructed. In includes all incoming documents to be treated by the National Assembly and all documents made during their work - decision of the assembly and its bodies. Further, it includes all deputies' questions, proposals and initiatives and the corresponding answers. The documents are entered twice, the full text and summaries. The contents of Poročevalec (Reporter) are also entered.

The ZAKS base includes the full text of regulations accepted by the National Assembly. These are entered by item as independent documents. The database includes the full text of all regulations from 25.6.1991 on. We are gradually preparing a copy of this database translated into English, so that it will also be interesting for users outside Slovenia.

We entered the processed documents for the past four years into the database of the library information system in 1991; this database now includes 50,000 processed articles, and about 4,000 monographs. For the needs of inputting data into the database, we have written a program which automatically adapts data entered through PCs into a STAIRS format document. Documents from current political and economic life are processed daily. The database includes articles from 1.1.1987 onwards.

OTHER DATABASES

Apart from our own databases, we have an agreement on the possible use of the public databases of the government, the Constitutional Court and the Supreme Court. All resolutions of the government since 1980 and the court practice of the Constitutional and Supreme Courts are recorded in these databases.

The ZAKS and KINS databases, together with the database of the Constitutional and Supreme Court, are no more than complex judicial information used by a wide range of users.

For the needs of the library, we have tested the databases of NUK (National University Library) and CTK (Central Technical Library), facilitating the use of these databases.

We are not yet directly connected to international databases, but we are prepared for the installation of some databases of the European Community and the ATLAS databases. We use the German databases JURIS through the Constitutional Court.

In the second half of 1991, we began intensive testing of the VINET system, which was installed at PTT Slovenia. The system enables information, advertising, E-mail and telebanking. It also includes the telephone directory of Slovenia, amongst other services.

Since 1991, we have been connected to the DECNET (academic network - UNIVERZE) and some BBS systems, which are mostly private, in the ownership of smaller organizations.

THE SOFTWARE

We are currently using the word processor IBM DW5. All workstations have standardised directories and programs. All users have equal access to the programs and data through menus.

For all the accompanying activities of the National Assembly, we use programming tolls of the IV generation. We can thus computer-process the entire financial material management, personnel records with a calculation of personal incomes, the records of Poročevalec, address databases and records of deputies, amongst others. Computer processing is possible also in overseeing the presence of employees at the National assembly, the voting mechanism, etc.

We use the following software solutions;

- Complete financial material management
- Records of the presence of employees
- Records of the functioning of the buttons of the voting mechanisms in the large and small halls of the National Assembly
- Press review - program for processing press output
- Computer.aided addressing mechanism
- Library program
- Automatic preparation of material for Poročevalec
- Word analysis program (we have actively cooperated in drawing up a dictionary of several thousand word)
- Complete processing of documents for the Committee for applications and complaints, with all the statistics and other printouts
- Records for Poročevalec (subscribers and payers)
- Unified address book and telephone directory
- Program for processing documents in the main office (in preparation)
- Applications for solutions in individual segments of work
- Records of vacations
- Personnel decisions
- Overview of personal incomes of workers
- List of taxes by municipality
- Processing of a form on the structure of employees for statistical purposes
- Records of delegates
- Printouts from the personal income database by individual VPs
- Information on income taxes and other data for the Public Accounting Service

On the "host" for public use, we use STAIRS program tools.

In the local network, we use the Novell Netware 3.11 operating system.

Currently, we use uniform E-mail in the administration CC-MAIL, Connections with the public E-mail (X400 system have been tried and tested.

In a similar manner, it is possible to send or receive a fax from any PC on the network.

Currently, it is possible to use other software solutions and databases;

- Register of organizations in Slovenia (PIRS and INFC)

- Program with a description of data on all the countries in the world (PC GLOBE 5.0, also including data on Slovenia)

- Program MOJE MESTO, a map of Ljubljana with all important features, street names, etc.

- Telephone directory of Slovenia

- Teletext

UPGRADE THE INFORMATION SYSTEM AT THE NATIONAL ASSEMBLY

We are faced with the implementation of the following projects:

"Information flow in the work of the deputies". Through this project, we will enable the use of uniform technical equipment and software, thus allowing a more efficient use of the information system.

Following the project "Electronic meeting management", we anticipate a test run of a classroom for electronic management of meetings in Grimšče (SRC COMPUTERS d.o.o.). On the basis of these experiments, we will assess the costs, methods and possibilities of introducing this information tool.

In 1993, we aim to compile the basic information and perhaps test some systems and define the guidelines for a gradual implementation of the project "Multimedia systems of the National Assembly of Slovenia".

In the programme "Modernization of individual parallels software solutions", we have included:

a program for overseeing voting (on the basis of the new Protocol), a program for statistical processing of data on the work of the National Assembly, a program for records on how occupied the deputies are and for records of the sessions (this program is being tested), and an upgrading of the software with regard to the requirements of users.

All in all, I can fairly claim that we have a well-managed information system at the National Assembly, and by implementing new projects, with the parallels introduction of modern technologies and the establishment of information links with the Council of Europe and other countries, we will further raise the level of our information system.

Republic of Estonia

Databases related to law in Estonia

*** Legal acts of Estonia - ESTLEX**

This is a full-text database of laws, government orders and other acts, starting from Nov 16, 1988.
The database is in the status of a state register, kept by the State Computing Center. The founder of the register is Ministry of Justice.
This database contains citations of 11,000 legal acts and full texts of regulative acts. Texts are in current version, with all the amendments that have been made. These acts are searchable by numerical indexes. The classification is hierarchical according to the branches of law. It is possible to search acts also by words in their titles and by date of enactment. It is also possible to look the links between the acts (references, amendments).
The database is in Estonian. Preparations are made to create the Russian version of it and also the English one.
The database is offline at present. The clients get updates on disks twice a month. In about a year the database will be available online with full text search possibilities.
The program is written in Clipper, the authors of the database are Riina Vende (project manager) and Ivo Vana (programmer).

*** Bibliographical database of legal acts - SEADUS.**

This database is kept at the National Library of Estonia, started from 1989. It contains bibliographical data about legal acts published in Estonian, Russian or English in *State Gazette*, periodicals or collections. There are 2600 citations in it. The database has been created using bibliographical software ProCite. It is indexed with keywords. The database is offline.

*** Bibliographical database of Estonian legal literature - ÕIGUS94.**

Started at Jan 1, 1994, 1000 citations, legal articles in Estonian periodicals in Estonian, Russian and English. Keyword index. Offline.

*** Bibliographical database of Estonian legal literature - "Bibliographia Iuridica Estonica, 1918-1940".**

It contains 4100 citations of books and articles in Estonian and other languages, published in Estonia or abroad since 1918 until June 1940. Keyword index. Offline.

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