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INTIB Telecommunications

Progress from 9 January, 1989 - 7 April, 1989

Donna Patoprsty
7 April, 1989

I PROGRESS SUMMARY

1. Progress from 9 January, 1989 - 7 April, 1989

1.1 IBM INS using Screen Mail

- Menu driven installation procedures for installing pre-configured Screen Mail software were written;

- A pre-configured version of Screen Mail was created with a completed directory of Focal Points connected, to be connected in 1989 and those not yet requesting connection;

- Technical installation instructions were written covering basic software configuration, all Service Engine access numbers, Service Engine sign-on procedures and information on using a Public Packet Switching Data Network with Screen Mail including an appendix from the UN ICC on the PAD X.3 device profile for asynchronous connections;

- Service Engine ids were ordered for all National Focal Points requesting connection;

- An installation package consisting of the above, the INTIB/IBM telecommunications report and the PSPC Quick Reference was sent to all NFPs requesting connection;

- All miscellaneous correspondence from NFPs concerning connections was answered;

- IBM is currently working on a special assistance bid for INTIB to lower the costs that INTIB has to bear during the initial phase of connecting Focal Points.

1.2 GEISCO Using Quik-Comm

- Definition of INTIB's telecommunications needs were presented to GEISCO Vienna in the course of several meetings;

- User addresses for INTIB and four test Focal Points were established;

- A Schrack 1200 baud autodial modem was installed for testing purposes.

1.3 European Academic Research Network (EARN) through the IAEA mainframe.

- User instructions for electronic mail were written and included in the appendix of this report;

- A second INTIB address was established for EARN and the IAEA mainframe.

1.4 UN ICC

- The services offered by the UN ICC were reviewed with UNIDO's EDP & OA department;

- Test connections via the IAEA mainframe and a Public Packet Switching Data Network using the new CALL/ICC Workstation Program were made;

- Two user addresses for INTIB were established.

1.5 General

- Presentation of telecommunication findings for the Third Advisory Group Meeting of INTIB;

- Telecommunications demonstrations for Advisors and others;

- Dialcom user id for testing and review plus information on UNDP and UNICEF electronic mail were requested from Arleen Canata of LinkNet;

- Radio Austria Network User Identity for use of a Public Data Network in Packet Switching mode was established.

II BACKGROUND

The Industrial and Technological Information Bank (INTIB) disseminates information and assistance to approximately 54 locations in 46 countries.

The traditional means of communication between Focal Points and INTIB are telex, cable and the Postal Service. The slowness of these means of communication has led INTIB to an investigation and utilization of electronic mail services.

Electronic mail is most easily compared to the Postal Service. The participants have a mailbox kept at a host computer. Mail in the form of digitalized files is sent or received using usually a personal computer and modem.

III STATUS - December, 1988

A study was done by IBM Austria in conjunction with INTIB that led to an ongoing attempt to utilize IBM Personal Services PC Screen Mail and the IBM Information Network Service (IBM INS) as the total solution to INTIB's telecommunication needs. Sixteen National Focal Points currently have connections to the IBM INS. Comparisons are being drawn currently between this IBM service and others offering similar capabilities. The promising alternative is Quik-Comm using the General Electric Information Service (GEISCO).

Consideration is also being given to connecting Focal Points to the United Nations International Computer Centre (UN ICC) in Geneva, Switzerland. This would allow Focal Points access to data bases not available from INTIB and electronic mail subsystems within the United Nations.

IV OBJECTIVES - December, 1988

The major objective is to connect Focal Points with each other and INTIB via electronic mail with file transfer capabilities. A decision must be made as to whether IBM INS will be the system to use or a different service should be contracted. Secondary objects include:

- Connect all INTIB Focal Points to the UN ICC;
- Investigate and recommend a solution for peer-to-peer communications;
- Investigate and recommend a communications package (ie ProComm +)for INTIB and focal points to use to connect to commercial databases.

The following report contains preliminary findings in the comparison of electronic mail systems and user instructions that have been completed for INTIB to date.

V CONSIDERATIONS

1. Potential Locations to Connect (54)

COUNTRY	CITY	ORGANIZATION
ALGERIA	- Alger	ENORI
BELGIUM	- Brussels	BCE
BRAZIL	- Brasilia	IBICT
BULGARIA	- Sofia	CISTI
BURKINO FASO	- Ouagadougou	EDDI
CAMEROON	- Douala	CAPME
CANADA	- Ottawa	IDRC
CHINA	- Beijing	CIEIC
CHINA	- Beijing	ISTIC
CUBA	- Habana	IDICT
CZECHOSLOVAKIA	- Prague	CSJP
CZECHOSLOVAKIA	- Prague	SCST
CZECHOSLOVAKIA	- Prague	UTRIN
EGYPT	- Cairo	IDSC
ETHIOPIA	- Addis Ababa	IDSD
FINLAND	- Helsinki	FFIDC
FRANCE	- Paris	DII
GERMANY FR	- Frankfurt	KFW
GERMANY FR	- Eschborn	GATE
GHANA	- Accra	TTC
GREECE	- Athens	HOMHER
HUNGARY	- Budapest	OMIKK
INDIA	- New Delhi	DGTD
INDIA	- Bangalore	APCIT
INDONESIA	- Jakarta	AIRD
IVORY COAST	- Abidjan	SAPID
KENYA	- Nairobi	KIRDI
KOREA DPR	- Pyongyang	CSTII
MALAYSIA	- Kuala Lumpur	TTUID
MEXICO	- Mexico City	LANFI
MONGOLIA	- Ulan Bator	MSTIC
NIGERIA	- Ikeja	FIIRO
OMAN	- Muscat	IRID
PERU	- Lima	ALIDE
PERU	- Lima	ITINTEC
PHILIPPINES	- Makati	BSMBD
POLAND	- Warsaw	ISTEI
QATAR	- Doha	AIAMIA
RWANDA	- Kigali	DPI
SAUDI ARABIA	- Riyadh	MIE
SENEGAL	- Dakar	ARCT
SENEGAL	- Dakar	SONEPI
SYRIA AR	- Damascus	CI
TANZANIA UR	- Dar Es Salaam	TIRDO
TRINIDAD & TOBAGO	- Tunapuna	CARIRI
TUNISIA	- Tunis	API
TURKEY	- Ankara	TUBITAK
UNITED KINGDOM	- Melton Mowbray	PERA
URUGUAY	- Montevideo	CNPDI
USSR	- Moscow	VINITI
USSR	- Moscow	ICSTI
VENEZUELA	- Caracas	DGST
VIET NAM	- Hanoi	CISTI
ZAMBIA	- Lusaka	NCSR

2. INTIB Electronic Mail Requirements Identified

2.1 Uniform Solution

The major objective of this electronic mail system is to allow Focal Points to communicate and transfer files with each other and INTIB. Optimally, the Focal Points should be using the same software interface connected to the same network. This solution should take into account the wide range of UN and commercial telecommunication services that can be made available in the future by making the correct backbone network choice in 1989.

2.2 Most Cost Effective

Due to the minimal computer and communication configurations in a great number of these countries, the focus is on solutions that will run on PCs with modems through telephone lines. Basic monthly charges for keeping a user identification active will probably be born by INTIB at the outset and should be as low as possible. Cost effective, however, shouldn't mean sacrificing usability.

2.3 Ease of Installation With a Reasonable Software Interface

Installation in this sense refers to the configuration of the communication software to the Personal Computer, modem and line connection. The configuration process should be as simple as possible and flexible.

A facility to write a "script" file that automates a connection process should reside in the software interface chosen. Preferably, interactive, on-line help would be available with this facility. A second software package such as Procomm to automate the connection process shouldn't be necessary.

The need for a good script file writing facility is demonstrated by users of the Public Packet Switching Data Network (PPSDN). Only through the use of script files can the entry of Packet Assembler/Disassembler (PAD) settings, Network User Identification and the destination Network User Address be automated.

It is important to INTIB to advance beyond electronic mail interfaces that require a computer scientist to function.

2.4 Extensive Use of Local Connections or PPSDN

A local phone call and corresponding local phone bill is the optimal way to access an electronic mail system. The long distance line degradation reported from countries such as Nigeria make a local connection almost necessary. This requires either an already existing extensive network of local nodes and private data network such as GEISCO offers with MARK*NET or a service that is an absolute expert at utilizing the P?SDNs.

A secondary consideration in using a private data network such as the MARK*NET is whether the user is tied to that network only or can access other X.25 addresses such as the UN ICC in Geneva.

2.5 Available and Informed Support

It's not to be expected that local support for 46 far removed countries should be available. However, INTIB needs at least one connection in Vienna for software reference, subscription requests and technical information on PPSDNs.

2.6 Maximum Number of Connections

In the final analysis, an electronic mail system succeeds if it is capable of honoring subscription requests successfully and bring people on-line.

2.7 Future Transfer of Files

INTIB is an information bank and would like to make their resources available as quickly and efficiently as possible. In the future, the same electronic mail connection should be able to service data base transfer requests.

2.8 Future Access to Commercial Data Bases for Focal Points

Most "pay as you go" data base libraries such as DIALOG are available to all who have a phone, Personal Computer and modem. Of course, a local phone call would be nice. Heavy reliance on PPSDN connections for electronic mail gives subscribers a foot in the door.

2.9 Minimum Computer and Communication Configuration Requirements

Optimally, electronic mail should require no more than one Personal Computer with two diskette drives, one asynchronous 300 baud modem and a telephone.

2.10 Fast Transmission and Reception

Local PTTs will determine modem and line speed restrictions. Unless local PTT or geographical restrictions exist, at least 1200 baud full duplex asynchronous dial up should be available.

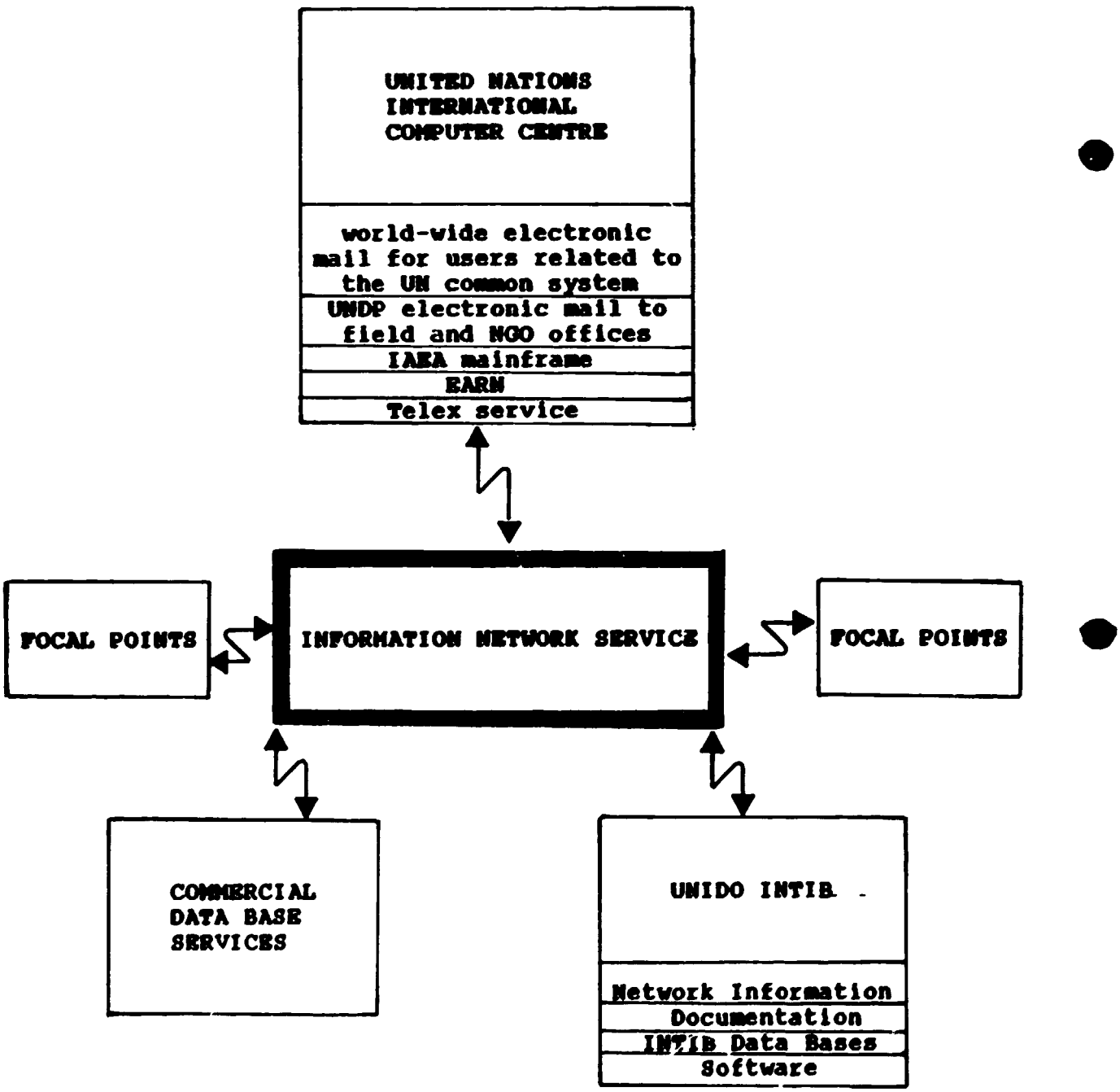
3. INTIB's Current and Future Telecommunications Needs Diagram

The following diagram represents a desirable telecommunications configuration for INTIB and National Focal Points. The information network in the center should provide access to the following:

- Information Network electronic mail services;
- Data and program file transfer;
- Access to the United Nations International Computer Center which can provide:
  - Electronic mail for the UN common system;
  - United Nations Development Program electronic mail;
  - International Atomic Energy Agency mainframe;
  - European Academic Research Network;
  - Telex service;
- Access to UNIDO INTIB which can provide:
  - Network information;
  - Documentation;
  - INTIB data bases;
  - Software;
- Access to commercial data bases such as DIALOG.

DIAGRAM I

INTIB TELECOMMUNICATIONS



4. Who Could Potentially Fulfill INTIB's Needs

As an introduction to who could potentially provide these services to INTIB, at least two possibilities on the 19th floor of the United Nations Industrial Development Organization (UNIDO) are being "beta tested". Quik Comm through GEISCO is being used by the International Centre for Genetic Engineering and Biotechnology (ICGEB) and INTIB is attempting to use Screen Mail through IBM INS.

Large Electronic Data Processing (EDP) centers using extensive networks in general such as UNIDO, the International Atomic Energy Agency (IAEA) and the International Institute for Applied Systems Analysis (IIASA) are listed due to the incredible resources in terms of information, alternatives, existing electronic mail services and employee expertise. The only question remains is as to whether they have a solution that "fits" INTIB and minimally configured Focal Point countries. The following services or institutions are considered in this report:

- PSPC Screen Mail through IBM INS
- Quik Comm through GEISCO
- European Academic Research Network (EARN) through the IAEA mainframe
- EARN through direct node asynchronous dial-up
- UN ICC through the IAEA mainframe
- UN ICC through PPSDN using the CALL/ICC Workstation Program
- UN ICC using British Telecom Dialcom
- United Nations Development Program (UNDP) EMAIL through British Telecom Dialcom System 41
- IIASA - connection possibilities for East Bloc

5. Comparison of Services to INTIB's Needs

TABLE 1 SUMMARY OF NEEDS POINTS 2.1 - 2.5

	Uniform Solution	Most Cost Effect.	Ease of Install. With Reasonable Software Interface	Ext.Use of Local Connect. or PPSDN	Available and Informed Support
*IBM	Y	N	Y	Y	Y
*GEISCO	Y	N	Y	Y	Y
*EARN	Y	Y	N	Y	N
*UW ICC	Y	Y	N	Y	N
*Dialcom	Y	-	-	Y	-
*IIASA	-	-	-	-	-

* Legend: Y=Fulfills Need N=Doesn't Fulfill Need - Info Not Avail. Yet*

TABLE 2 SUMMARY OF NEEDS POINTS 2.6 - 2.10

	Maximum Number of Connections	Future Transfer of Files	Future Access to Commericial Data Bases	Minimum Computer Config.	Fast Trans. and Recept.
*IBM	Y	Y	Y	Y	Y
*GEISCO	Y	Y	Y	Y	Y
*EARN	N	Y	Y	Y	Y
*UW ICC	-	Y	Y	Y	Y
*Dialcom	-	-	Y	Y	-
*IIASA	-	-	-	-	-

* Legend: Y=Fulfills Need N=Doesn't Fulfill Need - Info Not Avail. Yet*

TABLE 3 COST COMPARISON IBM AND GEISCO - AUSTRIAN SCHILLINGS

IBM		GEISCO	
ONCE-OFF CHARGES			
User id registrations: (769 x 54 users)	41,526.00	User catalog:	2,000.00
FIXED CHARGES - YEAR			
User id maintenance: (267 x 54 x 12 mos.)	173,016.00	User id maintenance: (63 x 2 user ids x 12 mos.) (54 users x 20 x 12 mos.)	14,472.00
TRANSMISSION CHARGE SAMPLE*			
Transmission charge: (.25 per 1,000 char x 78,000 char)	19.50	Transmission Charges: (9 X 260 per send)	2,340.00
Connect charge: (78 per hour x 21.67 hours)	1,690.00		
Send charge: (3.45 per x 260 sends)	897.00		
Storage charge:	118.00		
Total Sample tran. chrg.	2,724.50		

*Sample based on: 1 user; 1 use per day; 1 message sent; 1 page message; every working day; for 1 year; each message stored 1 day; at 5 minutes usage per message; to different land.

The connections that are currently available and considered not suitable as the backbone for the Focal Point telecommunications system will have user documentation in the Appendices by name. The connections currently considered suitable as a backbone network are IBM IMS and GEISCO and are compared in detail as follows. At this point, British Telecom Dialcom could be considered as a second best alternative with all connections through a PPSDN, but testing of this system has not been completed.

6. Comparing IBM INS

IBM Personal Services PC Screen Mail is a relatively new software package for the IBM Information Network Service

6.1 Uniform Solution - IBM feels confident that all of the countries including the east bloc have a chance for connection using PSPC Screen Mail through IBM INS;

6.2 Most Cost Effective - Prohibitively expensive. IBM charges 267 AS per user identification per month. However, their is no contract charge per year. The registration charge for a new user identification is 769 AS. In theory, the connect time will be paid by each Focal Point and IBM is currently working on a billing scheme.

6.3 Ease of Installation With a Reasonable Software Interface - Screen Mail is fairly straight forward and is accompanied by all the appropriate documentation for normal operations. It allows passwords, phone numbers and autodial modem strings to be entered directly into the program. Consideration for asynchronous and synchronous connections was taken. The aspects of configuration that the user is able to control are entered interactively.

There is no script file capability. No consideration has been taken for PPSDN users. The automatic logon capability does not function. It is, however, menu driven and definitely preferable to dot prompt driven interfaces. It is new. It is not perfect.

6.4 Use of Local Connections & PPSDN - There are only four connecting points (Austria, France, United Kingdom and the Netherlands) at the present time. IBM has promised that offices across the world will be opening up as local dial-up nodes for users. According to documentation, these nodes will be synchronous dial-up only. Most Focal Points are using inexpensive asynchronous modems which will not function with these nodes.

Due to the lack of a private data network, IBM relies on PPSDN X.25 protocol connections. For most countries it is advantageous to have this connection for future access to commercial data bases. The local IBM support are not absolute experts at connections involving PPSDNs.

6.5 Available and Informed Support - This appears to be erratic due to new assignments of personnel.

6.6 Maximum Number of Connections - IBM seems to have the capability of connecting all countries, but some without a PPSDN such as Nigeria will have to call France or the United Kingdom long distance. As mentioned before, the long distance line degradation may prevent any usable connection.

6.7 Future Transfer of Files - IBM offers a library function that allows storage of files at their mainframe computer. This allows a data base to be available to all users. No security scheme exists to prevent unauthorized changes to data bases. This leaves data base transfer to requestor only as the single possible use.

6.8 Future Access to Commercial Data Bases for Focal Points - IBM usually relies on synchronous only data bases of their own. This excludes countries with asynchronous connections. In order to reach a commercial data base, Screen Mail cannot be used. A second software package in conjunction with and existing PPSDN must be used.

6.9 Minimum Computer and Communication Configuration Requirements With a little juggling, one could run Screen Mail on an IBM or clone PC with two diskette drives, but the recommended configuration is at least 20mb fixed disk with 640k ram.

6.10 Fast Transmission and Reception - Excluding X.25 connections, the range of 1200 baud dial-up asynchronous connections is poor due to the use of only 4 entry points or Service Engines into the network.

7. Comparing GEISCO

Quik Comm is a fairly well established software package for the General Electric Information Services. The user catalog established for INTIB has telex and facsimile capabilities. For Focal Points not yet connected, Quik-Comm can be used to send a telex to any telex number and a data file to any facsimile machine. A special telex number has been established for INTIB. When a telex is sent to this number, it is automatically collected by the Quik-Comm system and made available on the PC in use at INTIB.

7.1 Uniform Solution - A listing of connection possibilities for National Focal Points was received from GEISCO. They feel confident that all the Focal Points can be connected. The MARK*NET private data network with local entry points in conjunction with PPSDNs increases the connection possibilities dramatically for National Focal Points.

7.2 Most Cost Effective - One contract between UNIDO and GEISCO has already been signed exempting INTIB from the 39,000 AS per year contract cost. Establishment of a catalog represents a once-off charge of 2,000 AS. There is no user registration fee. Unused ids for Focal Points can be re-assigned without charge. The charge per month for each of the two user numbers is 63 AS with a 20 AS charge for addresses connected to the user number. Transmission charges are estimated as slightly less than the IBM IBS. Copied versions of Quik-Comm cannot be used due to a built-in software protection function. The price for Quik-Comm software is about 250 US$. However, GEISCO has offered free software to INTIB for all Focal Points connecting until the end of 1989.

7.3 Ease of Installation With a Reasonable Software Interface - Quik Comm is very straight forward. It is menu driven with a command key only interface. It runs as a system of displayed boxes which visually represent incoming/outgoing mail and other functions.

Basic script files for a good selection of modems come with the software package. These script files can be modified to include PPSDN information, autodial modem strings and messages to the user. An on-line help facility that explains many of the script keywords is available. Quik-Comm can be used in ways similar to Procomm or Xtalk for reaching X.25 host addresses not involved with the GE network.

7.4 Use of Local Connections & PPSDNs - GEISCO has its own data network called MARK*NET. GEISCO offices are being used as dial-up nodes for Quik Comm. These nodes are concentrated mostly in the United States, but many are available throughout the world. While local connections are desirable, it is not clear if X.25 addresses such as the UN ICC can be reached with GEISCO's local MARK*NET phone numbers or if a separate subscription to a PPSDN will still be required.

7.5 Available and Informed Support - GEISCO has demonstrated in its dealings with the ICGEB good response time for subscription requests. There seems to be good communication between support offices in the United States and Vienna. In its dealings with INTIB, GEISCO has provided a new PTT approved autodial modem for testing and expressed the intention of pre-configuring Quik-Comm software in Vienna for Focal Point use. Their knowledge of the use of PPSDNs with asynchronous terminals appears to be far superior to current IBM support.

7.6 Maximum Number of Connections - GEISCO feels confident that all National Focal Points can be connected.

7.7 Future Transfer of Files - Quik Comm has an attach function which transfers files of any size without alteration and usable at the receiving end with the software package that created the file.

7.8 Future Access to Commercial Data Bases for Focal Points - GEISCO offers data base files of their own in the Business Talk Service, but not the Quik-Comm Service.

7.9 Minimum Computer and Communication Configuration Requirements Quik Comm requires no juggling to function on an IBM or clone PC with two diskette drives and 640k ram.

7.10 Fast Transmission and Reception - GEISCO has an asynchronous dial-up user orientation at a usual speed of 1200 baud.

VI RECOMMENDATIONS

Recommendations concerning a backbone information service are made taking the time and money invested into the IBM INS by INTIB into consideration.

1. Continue working with the IBM INS

   - Support from INTIB and IBM should be continued through 1989 until all sixteen National Focal Points with valid user ids and installation packages have successfully connected OR fail to connect;
   - Continue putting pressure on IBM to arrange a reasonable charging structure through special assistance for INTIB;
   - Prepare a formal document of Screen Mail Program Product changes that could be made to better accomodate INTIB NFP special needs;
   - Find an alternative solution for NFPs that are unable to use Screen Mail due to their mainframe orientation;
   - Make it clear that INTIB expects a reasonable amount of connections in 1989;
   - Make no more NFP promises of Screen Mail until the final decision on which information network service will be used;
   - Investigate use of telex connections for NFPs with no PPSDN.

2. Continue current limited GEISCO connections for comparison and as a possible alternative to IBM INS.

   - Create an installation package similar to the one done for the IBM INS;
   - Connect 4 NFPs using GEISCO to Quik-Comm for their input on comparison;
   - Continue investigating GEISCO in terms of features and services offered that are not available from IBM;
   - Further investigate the transfer of billing back to the NFP possibilities;
   - Find out definitely if local MARK*NET phone numbers can be used to reach any X.25 Network User Address or the GE service only.

3. Expand and make attractive the "total" network solution (Based on the INTIB Telecommunications diagram)

- For MFP requesting Screen Mail, establish UN ICC pass codes;

- Develop abbreviated documenation for skeletal use of the UN ICC CALL/MAIL, CALL/NEWYLBUR, CALL/TELEX, CALL/EARN, UNDP electronic mail connections and the UN Common electronic mail system;

- For MFP using a Public Data Network and requesting telecommunication connections, distribute the UN ICC Workstation program with documentation;

- Outline a training program for National Focal Points;

VII APPENDICES

1. PSPC Screen Mail through IBM IMS

PSPC Test Programs for Screen Mail
Installation Instructions

INDEX

PSPC Test Programs for Screen Mail

1. Contents of This Package

- P3PC Test Programs Diskettes, IMENU installation aid and root directory procedures PSPCRUN.bat and PSPCTUT.bat for starting Screen Mail and Screen Mail Tutor from the root directory;

- IBM literature describing PSPC Screen Mail, the IBM Information Network Services and telecommunication connection possibilities;

- PSPC Screen Mail Quick Reference Guide.

2. Copying the PSPC Screen Mail Test Programs from Diskettes to the PC Fixed Disk.

2.1 Automatically Using IMENU

Turn on the PC and boot it in the normal fashion. To run IMENU, insert PSPC Test Program Diskette 1 in drive A: and proceed as follows from the current drive prompt:

```
A:                          [Press Enter]
CD \                        [Press Enter]
IMENU                       [Press Enter]
```

The following will display:

```
        PSPC Screen Mail Test Program Set-Up Menu (1)

  1.  Verify that operating system is at release DOS 3.3 or higher
  2.  Check for CONFIG.SYS minimum statements of FILES=15 BUFFERS=16
  3.  COPY PSPC Screen Mail Test Programs from "A:" to "C:"
      (Intended for initial loading of the programs and for
       reloading programs to obtain original configuration)

      Please choose "1"-"3" and press "Enter"
```

IMENU Option 1 - Verify that operating system is at release DOS 3.3 or higher.

This option runs the VER DOS command, displays the current DOS level and returns to the IMENU. If the DOS Version is less than 3.3, please obtain 3.3 or higher and refer to the DOS Manual under installing a new release of DOS.

IMENU Option 2 - Check for CONFIG.SYS minimum statements of FILES=15 BUFFERS=16.

This option displays the contents of CONFIG.SYS to the screen and returns to IMENU. If CONFIG.SYS does not exist or files and buffers statements are less than 15 and 16, respectively, CONFIG.SYS must be created or modified.

To create a new CONFIG.SYS file, proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    C:                          [Press Enter]                           *
*    CD \                        [Press Enter]                           *
*    COPY CON CONFIG.SYS         [Press Enter]                           *
*    FILES=15                    [Press Enter]                           *
*    BUFFERS=16                  [Press F6]  [Press Enter]               *
*                                                                        *
**************************************************************************
```

To modify a CONFIG.SYS file, proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    C:                          [Press Enter]                           *
*    CD \                        [Press Enter]                           *
*    TYPE CONFIG.SYS             [Press Enter]                           *
*    COPY CON CONFIG.SYS         [Press Enter]                           *
*                                                                        *
*    (Enter each line of the currently existing CONFIG.SYS file          *
*     exactly as it appears pressing Enter to advance between lines)     *
*                                                                        *
*    FILES=15                    [Press Enter]                           *
*    BUFFERS=16                  [Press F6]  [Press Enter]               *
*                                                                        *
**************************************************************************
```

IMENU Option #3 - COPY PSPC Screen Mail Test Programs from "A:" to "C:"

If the operator is unable to use diskette drive A: or fixed disk drive C:, please refer to Section 2.2 copying files manually using DOS.

This procedure uses DOS MD to make directories \PSPC.SYS, \PSPC.M, \PSPC.DOC, \PSPCSWAP and \PSPCTUT on fixed disk drive C: if they do not exist. The PSPC Test Programs Diskettes will then be requested in numerical order for insertion in diskette drive A: as they are needed. The files will be copied into their respective directories. To re-start IMENU to restore files at a later date, please refer to the beginning of Section 2.1.

2.2 Manually Using DOS

This should only be necessary if IMENU installation aid cannot be used with diskette drive A: and/or fixed disk drive C:.

The general idea is to make the directories \PSPC.SYS, \PSPC.M, \PSPC.DOC, \PSPCSWAP and \PSPCTUT on the fixed disk drive of choice and then copy the files from the PSPC Test Programs diskettes into these directories.

The following demonstrates the steps necessary to copy PSPC Test programs from diskette drive A: to fixed disk drive C: using MD for making directories and COPY for copying files. These two commands are further clarified in the DOS Reference Manual.

Step #1 - Making Directories

Turn the PC on and boot it in the normal fashion. Proceed as follows from the current drive prompt:

```
C:                          [Press Enter]
CD \                        [Press Enter]
MD PSPC.SYS                 [Press Enter]
MD PSPC.M                   [Press Enter]
MD PSPC.DOC                 [Press Enter]
MD PSPCSWAP                 [Press Enter]
MD PSPCTUT                  [Press Enter]
```

Step #2A - Copying the Files From Four DSDD 5 1/4 Inch Diskettes

Diskette #1/4 containing:

- PSPCRUN.bat - Batch file to start Screen Mail
- PSPCTUT.bat - Batch file to start Screen Mail Tutor
- PSPCSWAP - Directory containing memory swap file

Insert PSPC Test Programs Diskette 1/4 in diskette drive A: and proceed as follows from the current drive prompt:

```
COPY A:\PSPCRUN.BAT C:\*.*              [Press Enter]
COPY A:\PSPCTUT.BAT C:\*.*              [Press Enter]
COPY A:\PSPCSWAP\*.* C:\PSPCSWAP\*.*    [Press Enter]
```

PSPC Test Programs for Screen Mail

Diskette #2/4 containing:

- \PSPC.SYS - Directory of system programs
- \PSPC.M - Directory of nickname and file cabinet index files

Insert PSPC Test Program Diskette 2/4 in diskette drive A:
and proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    COPY A:\PSPC.SYS\*.* C:\PSPC.SYS\*.*    [Press Enter]               *
*    COPY A:\PSPC.M\*.* C:\PSPC.M\*.*        [Press Enter]               *
*                                                                        *
**************************************************************************
```

Diskette #3/4 containing:

- \PSPC.SYS\PSPCMAIN.EXE - Main Screen Mail program

Insert PSPC Test Program Diskette 3/4 in diskette drive A:
and proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    COPY A:\PSPC.SYS\*.* C:\PSPC.SYS\*.*    [Press Enter]               *
*                                                                        *
**************************************************************************
```

Diskette #4/4 containing:

- \PSPCTUT - Directory containing Screen Mail Tutor programs

Insert PSPC Test Program Diskette 4/4 in diskette drive A:
and proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    COPY A:\PSPCTUT\*.* C:\PSPCTUT\*.*      [Press Enter]               *
*                                                                        *
**************************************************************************
```

PSPC Test Programs for Screen Mail

Step #2B - Copying the Files From Two DSDD 3 1/2 Inch Diskettes

Diskette #1/2 containing:

- PSPCRUN.bat - Batch file to start Screen Mail
- PSPCTUT.bat - Batch file to start Screen Mail Tutor
- \PSPC.SYS - Directory containing PSPC system files
- \PSPC.M - Directory containing PSPC index files

Insert PSPC Test Programs Diskette 1/2 in diskette drive A:
and proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    COPY A:\PSPCRUN.BAT C:\*.*              [Press Enter]               *
*    COPY A:\PSPCTUT.BAT C:\*.*              [Press Enter]               *
*    COPY A:\PSPC.SYS\*.* C:\PSPC.SYS\*.*    [Press Enter]               *
*    COPY A:\PSPC.M\*.* C:\PSPC.M\*.*        [Press Enter]               *
*                                                                        *
**************************************************************************
```

Diskette #2/2 containing:

- \PSPCSWAP - Directory with memory swap file
- \PSPCTUT - Directory with Screen Mail Tutor

Insert PSPC Test Programs Diskette 2/2 in diskette drive A:
and proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    COPY A:\PSPCSWAP\*.* C:\PSPCSWAP\*.*    [Press Enter]               *
*    COPY A:\PSPCTUT\*.* C:\PSPCTUT\*.*      [Press Enter]               *
*                                                                        *
**************************************************************************
```

Step #2C - Copying the Files From One DSHD 5 1/4 Inch Diskette

Diskette #1/1 containing:

- PSPCRUN.bat - Batch file to start Screen Mail
- PSPCTUT.bat - Batch file to start Screen Mail Tutor
- \PSPC.SYS - Directory containing PSPC system files
- \PSPC.M - Directory containing PSPC index files
- \PSPCSWAP - Directory containing memory swap file
- \PSPCTUT - Directory with Screen Mail Tutor

PSPC Test Programs for Screen Mail

Insert PSPC Test Programs Diskette 1 in diskette drive A: and proceed as follows from the current drive prompt:

```
COPY A:\PSPCRUN.BAT C:\*.*                  [Press Enter]
COPY A:\PSPCTUT.BAT C:\*.*                  [Press Enter]
COPY A:\PSPC.SYS\*.* C:\PSPC.SYS\*.*        [Press Enter]
COPY A:\PSPC.M\*.* C:\PSPC.M\*.*            [Press Enter]
COPY A:\PSPCSWAP\*.* C:\PSPCSWAP\*.*        [Press Enter]
COPY A:\PSPCTUT\*.* C:\PSPCTUT\*.*          [Press Enter]
```

If after copying the files manually using DOS the fixed disk directory containing the PSPC Screen Mail Programs is not C: and for example is D:, proceed as follows from the current drive prompt:

```
D:                          [Press Enter]
CD \                        [Press Enter]
PSPCRUN                     [Press Enter]
```

Once inside the PSPC Program choose:

```
Menu Option 7 USER DEFAULTS from the Main Tasks Menu PS/PC:2
Menu Option 1 DISK PATHS from the User Defaults Menu PS/PC:5
```

PSPC Test Programs for Screen Mail

The top half of the screen will display as:

```
**********************************************************************
*PS/PC:8                    DISK DEFAULTS                            *
*Send                                                                *
*Drive\Path          C:\PSPC.DOC\                                    *
*                                                                   *
*Receive                                                            *
*Drive\Path          C:\PSPC.DOC\                                    *
*                                                                   *
*File Cabinet                                                       *
*Drive\Path          C:\PSPC.M\                                      *
*                                                                   *
*Local Face Log                                                     *
*Drive\Path          C:\PSPC.SYS\                                    *
*                                                                   *
*Find Results                                                       *
*Drive\Path          C:\PSPC.M\                                      *
*                                                                   *
*Memory Swap                                                        *
*Drive\Path          C:\PSPCSWAP\                                    *
*                                                                   *
**********************************************************************
```

In this example, the drive would have to be changed to D: while the directories remain the same.

3. Starting PSPC Screen Mail

3.1 From the Root Directory Using PSPCRUN.bat

Providing the PSPC Test Programs were copied to the fixed disk drive C:, the batch file PSPCRUN.bat resides the root directory. To start PSPC Screen Mail, proceed as follows from the current drive prompt:

```
C:                          [Press Enter]
CD \                        [Press Enter]
PSPCRUN                     [Press Enter]
```

3.2 From the \PSPC.SYS Directory Using PSPC Screen Mail PSPCRUN.bat

Providing the PSPC Test Programs were copied to fixed disk drive C:, the batch file PSPCRUN.bat provided by the regular Screen Mail Programs resides in the \PSPC.SYS Directory. To start PSPC Screen Mail proceed as follows from the current drive prompt:

```
C:                          [Press Enter]
CD \PSPC.SYS                [Press Enter]
PSPCRUN                     [Press Enter]
```

4. Starting PSPC Screen Mail Tutor

4.1 From the Root Directory Using PSPCTUT.bat

Providing the PSPC Test Programs were copied to fixed disk drive C:, the batch file PSPCTUT.bat resides in the root directory. To start PSPC Screen Mail Tutor, proceed as follows from the current drive prompt:

```
C:                          [Press Enter]
CD \                        [Press Enter]
PSPCTUT                     [Press Enter]
```

4.2 From the \PSPCTUT Directory Using PSPCTUT.exe

Providing the PSPC Test Programs were copied to fixed disk drive C:, the program PSPCTUT.exe resides in the \PSPCTUT directory. To start the PSPC Screen Mail Tutor, proceed as follows from the current drive prompt:

```
C:                          [Press Enter]
CD \PSPCTUT                 [Press Enter]
PSPCTUT                     [Press Enter]
```

5. PSPC Screen Mail User ID and Host Password

The User Id and Host Password were pre-entered as per the cover letter for this package.

To view these defaults, proceed as follows from the current disk drive prompt:

```
*************************************************************************
*                                                                       *
*   C:                          [Press Enter]                           *
*   CD \                        [Press Enter]                           *
*   PSPCRUN                     [Press Enter]                           *
*                                                                       *
*************************************************************************
```

Once inside the PSPC Program choose:

```
*************************************************************************
*                                                                       *
*   Menu Option 7 USER DEFAULTS from the Main Tasks Menu PS/PC:2        *
*   Menu Option 2 PERSONAL from the User Defaults Menu PS/PC:5          *
*                                                                       *
*************************************************************************
```

The top half of the screen will display as:

```
PS/PC:6                 PERSONAL DEFAULTS
*************************************************************************
*User Information Defaults                                              *
*   User's Name                             Name, Location              *
*   User ID                                 XXYYYNNN                    *
*                                                                       *
*Host Defaults                                                          *
*   Host Address                            GBIHHH00                    *
*   Type of Password                        1                           *
*   Host Password                           XXYYYNNN                    *
*************************************************************************
```

The important entries are User Id and Host Password. These are assigned by INTIB and registered by IBM. For simplicity, the User Id and Host Password for each connection within a country are the same. The convention for choosing these are XXYYYNNN where XX is the two letter standard UNIDO country code, YYY is UNI for UNIDO and NNN is the sequential number for each connection within a country.

6. Service Engine Information

The Service Engine is a node or location that is capable of receiving messages and sending them to the host computer in the United Kingdom. There are four Service Engines available located in the United Kingdom, Netherlands, Austria and France. It is necessary to logon to the Service Engine assigned by entering a special User Id, Account and Password. There are usually two ways to reach a Service Engine: dial-up connection via telephone only and a connection via telephone through the local Packet Switching Telephone Network (PSTN) into the Public Packet Switching Data Network (PPSDN).

6.1 Public Packet Switching Data Network Users

The IBM IBS relies heavily on connections to PPSDNs in most countries. Following is a list of terms that may be used:

- Packet Switching Telephone Network (PSTN);
- Public Data Network (PDN);
- Public Packet Switching Data Network (PPSDN);
- Network User Identity (NUI);
- Network User Address (NUA);
- X.25 Protocol (X.25);
- X.28, X.29 Protocol (asynchronous X.25);
- Packet Assembler/Disassembler (PAD);
- Device X.3 Profile (PAD parameter settings);
- PTT - Post, Telegraph, Telephone.

Most countries have a PPSDN controlled by their national PTT. To gain access to this service, the institution must approach their PTT and ask for a Network User Identity. This Network User Identity functions as a password to the network. If a PPSDN is not available within the Focal Point country, arrangements with the PTT of a neighboring country with a PPSDN for a Network User Identity should be attempted.

PSPC Test Programs for Screen Mail

The national PTT will likely have a list of questions as to how, why and with whom the institution wants to communicate. Most Focal Point countries are using inexpensive 300/1200 asynchronous baud modems. Using this assumption, they will want an asynchronous attachment to their national PPSDN.

An asynchronous attachment to a PPSDN is referred to as: a connection to an X.25 service with asynchronous support; X.28 protocol connection; X.29 protocol connection.

The important point is to obtain a Network User Identity into the PPSDN that reflects the asynchronous or synchronous capability of the modem in use and a telephone dial number that reflects the speed the modem will be using.

The PTT will issue a telephone number to dial into the service. A separate telephone number will be issued depending on the transmission speed required (ie 300 or 1200 baud).

The telephone number received from the PTT should be entered into the Screen Mail program on Panel PS/PC:9 as indicated in Section 7 of this report for autodial modems.

When the send or receive options are taken in Screen Mail, the program will dial the phone number for the local PPSDN or request the operator to dial depending on the modem in use.

Most communication with the PPSDN will consist of a dot or asterisk prompt indicating that it is waiting for user input or error messages after the input is entered. The national PTT usually has some documentation on logon procedures for their network.

The first issue to be addressed in using the PPSDN is setting PAD parameters for asynchronous connections. Each software package has a different set of optimal PAD settings. The PAD settings for using Screen Mail are listed in the UNIDO Telecommunication report page 8.

To determine the current pad settings for the PPSDN, type PAR? at the asterisk prompt and they will be listed. These can be compared to the settings for Screen Mail to determine which ones need to be reset. A description of what each PAD parameter controls can be found in Appendix I of this report. Experience to date has shown that setting PAD parameter 2 to 0 is probably all that is necessary to run Screen Mail with a PPSDN.

The PPSDN Network User Identity issued by the national PTT will be entered second. The Network User Address for one of the four Service Engines is entered third and can be found in the UNIDO Telecommunication report pages 7 or 12.

A sample logon dialog with a PPSDN is as follows:

```
**********************************************************************
*                                                                    *
*    ATML1DP,,53490                                                  *
*    CONNECT                                                         *
*                                                                    *
*    Enter speed detection character "="                             *
*    =                                    [Press Enter]              *
*    Radio Austria Packet Switching Exchange PSX please logon        *
*    11900473                                                        *
*    *PAR?                                [Press Enter][Optional]    *
*    *1:1,2:1,etc.                                     [Optional]    *
*    *SET 2:0                             [Press Enter]              *
*    *Mxxxxxx,02322623102105              [Press Enter]              *
*                                                                    *
*    20-MAR-89   14:51:10                                            *
*    PAC:                                                            *
*    02322623102105                                                  *
*    COM                                                             *
*                                                                    *
**********************************************************************
```

The two lines listed as optional will only be entered while still trying to determine the optimal PAD settings for the PPSDN in use.

The components of the access codes following the PAD setting are as follows: M indicates that the Network User Identity will follow and is entered by the operator; xxxxxx is where the NUI is entered; a comma separates the NUI from the Network User Address; the series of numbers following is the Network User Address. The logon screen for the IBM IHS will display next as described in the Service Engine logon sections.

6.2 Vienna - Connections. The following table summarizes the dial-up phone numbers and Network User Addresses in use in Austria.

Communication Type	Baud Rate	Protocol	Modulat. Type	Connected Through	Telephone Nos./ Network User Address
Asynchronous	300/ 300	V.21	Full Duplex	Modem	X 43 1 26 25 06 X 43 1 26 25 07
Asynchronous	1200/ 1200	V.22	Full Duplex	Modem	X 43 1 26 25 06 x 43 1 26 25 07
Asynchronous	300or 1200	X.29	PPSDN	Modem	a b 2623102105
Synchronous	2400	V.22bis	Full Duplex	Modem/ SDLC/ 3270 EM	X 43 1 24 36 07
Synchronous	2400	V.26bis	Half Duplex	Modem/ SDLC/ 3270 EM	X 43 1 26 25 01 X 43 1 26 25 71 X 43 1 24 05 06
Synchronous	2400 4800 9600	X.25	PPSDN	Modem/ SDLC/ X.25 EM	a b 2623102103

Legend: a=International Access code from local PTT - usually 0
b=Austrian Network Identification Code from PTT - usually 232

The telephone number components are: X = the two digit prefix before the country code usually 00; 43 is the country code for Austria; 01 is the area code for Vienna recently changed from 0222 which is still valid.

6.3 Vienna - Logon to the Service Engine

After requesting send or receive from the P&PC Screen Mail Program, it will be necessary to logon to the Service Engine by entering the User Id, Account and Password.

A sample logon session is as follows:

```
*********************************************************************************
*                                                                               *
*Willkommen in IBM Informationsnetz.                                            *
*System: PARZSVM Termid: PWTC01L4 89/02/06  17:09:05                            *
*Benutzerservice: (0222) 211 10-2339,2442 DW                                    *
*Mit "HELP" erhalten Sie weitere Logon-Informationen.                           *
*                                                                               *
*Eingabe: 'userid account'                                                      *
*UNID0001 ATUNI                  [Press Enter]                                  *
*Eingabe: 'password'                                                            *
*++++++++++++++++++++++++++DUMMY [Press Enter]                                  *
*SYSTEM: PARZSVM LOGON COMPLETE FOR UNID0001 (ATUNI).                           *
*                                                                               *
*ENTER REQUEST                                                                  *
*SCRMAIL                         [Press Enter]                                  *
*    DMSCICS 16:09:39            [Press PF5]                                    *
*                                                                               *
*PF5 = COMPLETED                                                                *
*PF9 = CANCEL                                                                   *
*PF2 = TURN ECHO ON/OFF                                                         *
*                                                                               *
*********************************************************************************
```

Every 40 days, the Service Engine will respond that your password must be updated. The prompt requests that your old password and new password be entered as: DUMMY/XXXXX where XXXXX is a five or six letter combination of your choice. This password cannot be a predictable series such as DUMMY1, DUMMY2 and cannot be re-used for 24 months. Keeping track of old passwords in some fashion to avoid re-use is suggested. Once the password is successfully updated, the new password will have to be re-entered to access the Service Engine. During the course of normal logon as demonstrated above, the following will display:

```
*********************************************************************************
*                                                                               *
*Password ist abgelaufen.  Bitte Password aendern.                              *
*Bitte 'aktuelles Password/neues Password', "HELP" oder                         *
*"CANCEL" eingeben.                                                             *
*                                                                               *
*++++++++++++++++++++++++++DUMMY/XXXXX    [Press Enter]                         *
*                                                                               *
*********************************************************************************
```

6.4 United Kingdom - Connections.

The following summarizes the dial-up phone numbers and a Network User Address for Warwick:

Communication Type	Baud Rate	Protocol	Modulat. Type	Connected Through	Telephone Nos.
Asynchronous	1200/ 1200	V.22	Full Duplex	Modem	X 44 926 497 030
Asynchronous	300or 1200	X.29	PPSDN	Modem	a b 60200126
Synchronous	2400	V.22bis	Full Duplex	Modem/ SDLC/ 3270 HH	X 44 926 411 144
Synchronous	2400	V.26bis	Half Duplex	Modem/ SDLC/ 3270 HH	X 44 926 496 383
Synchronous	4800			Modem/ SDLC/ 3270 HH	X 44 926 314 488

Legend: a=International Access code from local PTT - usually 0
b=UK Network Identification Code from PTT - usually 2342

The telephone number components are as follows: X is the two digit prefix before the country code usually 00; 44 is the country code for the UK; and 926 is the area code for Warwick.

Please note that the PPSDN Network User Address for the United Kingdom does not yet function. If the Service Engine assigned was for the UK and the PPSDN will be used, please refer to the following section on the Holland Netherlands temporary bypass.

6.5 United Kingdom - Logon to the Holland Netherlands Temporary Bypass for Public Packet Switching Data Network (PPSDN) Users

The PPSDN Network User Address listed for the United Kingdom does not function. The United Kingdom Gateway was still assigned for some users of PPSDN because of the English interface for Screen Mail.

Until this address functions, a temporary arrangement has been made to connect through the Holland Netherlands Gateway. When the PPSDN address for the United Kingdom functions again, the user will encounter the logon procedures as detailed in section 6.6. The Holland Netherlands Network User Address is a b 179010 where a is the International Access Code provided by the local PTT usually 0, b is the Netherlands Network Identification Code from the PTT usually 2041.

Under normal circumstances, the Service Engine checks the the user identification, account and password entered directly by the user at the connection point. These identification codes will not have to be entered using the Holland Netherlands bypass. Instead, the Service Engine will check the PSPC Screen Mail software user identification and host identification that has been pre-enter by INTIB.

A sample of the logon dialog encountered with this bypass follows:

```
*********************************************************************
*                                                                   *
*        **************************************                     *
*        *          INFORMATION NETWORK       *                     *
*        **************************************                     *
*                                                                   *
*        TYPE NEW LETTER ON DRUK OP 'ENTER'                         *
*                                                                   *
*        LOGON APPLID(D77ZPEMS)          (Press Enter)              *
*                                                                   *
*        EMSCICS 14:32:42                (Press F5)                 *
*                                                                   *
*********************************************************************
```

LOGON APPLID(D77ZPEMS) is entered by the operator. This bypass was tested from Vienna and Jakarta, Indonesia. It tends to be a bit sensitive and LOGON APPLID(D77ZPEMS) must be entered exactly as it appears. If a mistake is made, the operator will probably have to cancel the session and begin again.

6.6 United Kingdom - Logon to the Service Engine

After requesting send or receive from the PSPC Screen Mail Program, it will be necessary to logon to the Service Engine by entering the User ID, Account and Password.

A sample logon session is as follows:

```
**********************************************************************
*WELCOME TO THE IBM MANAGED NETWORK SERVICE.
*SYSTEM: MANIPRSM TERMID: UOYRA107 89/02/10 14:35:58                 *
*CUSTOMER ASSISTANCE: .                                              *
*ENTER "HELP" FOR LOGON ASSISTANCE.                                  *
*                                                                    *
*ENTER USERID ACCOUNT.                                               *
*UNID0001 ATUNI                [Press Enter]                         *
*                                                                    *
*ENTER PASSWORD                                                      *
*DUMMY                         [Press Enter]                         *
*                                                                    *
*SYSTEM: MANIPRSM LOGON COMPLETE FOR UNID0001 (ATUNI)                *
*                                                                    *
*ENTER REQUEST                                                       *
*MAIL                          [Press Enter]                         *
*    EMSCICS 16:09:39          [Press F5]                            *
*                                                                    *
*F5 = COMPLETED                                                      *
*F9 = CANCEL                                                         *
*F2 = TURN ECHO ON/OFF                                               *
**********************************************************************
```

Every 40 days, the Service Engine will respond that your password must be updated. The prompt requests that your old password and new password be entered as: DUMMY/XXXXX where XXXXX is a five or six letter combination of your choice. This password cannot be a predictable series such as DUMMY1, DUMMY2 and cannot be re-used for 24 months. Keeping track of old passwords in some fashion to avoid re-use is suggested. Once the password is successfully updated, the new password will have to be re-entered to access the Service Engine. During the course of normal logon as demonstrated above, the following will display:

```
**********************************************************************
*                                                                    *
*PASSWORD HAS EXPIRED; PLEASE CHANGE PASSWORD.                       *
*ENTER CURRENT PASSWORD/NEW PASSWORD, "HELP", OR "CANCEL."           *
*                                                                    *
*DUMMY/XXXXX                   [Press Enter]                         *
*                                                                    *
**********************************************************************
```

6.7 France - Connections. The following table summarizes the dial-up phone numbers and Network User Address for Paris.

Communication Type	Baud Rate	Protocol	Modulat. Type	Connected Through	Telephone Nos./ Network User Address
Asynchronous	1200/ 1200	V.22	Full Duplex	Modem	X 33 1 43044246
Asynchronous	300or 1200	X.29	PPSDN	Modem	a b 9306074305

Legend: a=International Access code from local PTT - usually 0
b=French Network Identification Code from PTT - usually 2080

The telephone number components are: X = the two digit prefix before the country code usually 00; 33 is the country code for France; 01 is the area code for Paris.

6.8 France - Logon to the Service Engine

After requesting send or receive from the PSPC Screen Mail program, it will be necessary to logon to the Service Engine by entering the User Id, Account and Password.

A sample logon session is as follows:

```
*****************************************************************************
*                                                                           *
*BIENVENU SUR LES RESEAUX ET SERVICES INTERNATIONAUX IBM.                   *
*                                                                           *
*SYSTEM: DP2SVM00 TERMID: XDF50450 09/03/20 16:41:25                        *
*                                                                           *
*ASSISTANCE CLIENTS: .                                                     *
*                                                                           *
*ENTREZ "HELP" POUR L'AIDE A L'OUVERTURE DE SESSION.                        *
*                                                                           *
*ENTREZ L'ID UTILISATEUR ET LE NUMERO DE COMPTE                             *
*====>USID0001 ATUMI                                  (Press Enter)        *
*                                                                           *
*ENTREZ LE MOT DE PASSE                                                     *
*====>DUMMY                                           (Press Enter)        *
*                                                                           *
*    ENSCICS 16:09:39                                 (Press F5)           *
*                                                                           *
*****************************************************************************
```

Every 40 days, the Service Engine will respond that your password must be updated. The prompt requests that your old password and new password be entered as: DUMMY/XXXXX where XXXXX is a five or six letter combination of your choice. This password cannot be a predictable series such as DUMMY1, DUMMY2 and cannot be re-used for 24 months. Keeping track of old passwords in some fashion to avoid re-use is suggested. Once the password is successfully updated, the new password will have to be re-entered to access the Service Engine. During the course of normal logon as demonstrated above, the following will display:

```
*****************************************************************************
*                                                                           *
*LE MOT DE PASSE EST ARRIVE A EXPIRATION; MODIFIEZ-LE.                      *
*                                                                           *
*ENTREZ MOT DE PASSE EN COURS/NOUVEAU MOT DE PASSE, "HELP" OU "CANCEL"*     *
*                                                                           *
*====>DUMMY/XXXXX                                                          *
*                                                                           *
*****************************************************************************
```

7. Viewing or Changing the Communications Equipment Defaults in the PSPC Screen Mail Program for Asynchronous Connections

For synchronous connects, please refer to the enclosed UNIDO Telecommunications report sections 7.2 through 7.4

Proceed as follows from the current disk drive prompt:

```
**********************************************************************
*                                                                    *
*   C:                          [Press Enter]                        *
*   CD \                        [Press Enter]                        *
*   PSPCPROG                    [Press Enter]                        *
*                                                                    *
**********************************************************************
```

Once inside the PSPC Program choose:

```
**********************************************************************
*                                                                    *
*   Menu Option 7 USER DEFAULTS from the Main Tasks Menu PS/PC:2     *
*   Menu Option 4 COMMUNICATIONS from the User Defaults Menu PS/PC:5 *
*                                                                    *
**********************************************************************
```

The top half of the screen will display as:

```
PS/PC:9            COMMUNICATIONS EQUIPMENT DEFAULTS
**********************************************************************
*                                                                    *
*3270-PC connection information                                      *
*                                                                    *
*Short Name      E                                                  *
*                                                                    *
*Asynchronous connection information                                *
* Host Phone Number                          00431262506            *
* Modem Dial Type                            1                      *
* Port Number of PC Communications Adapter   1                      *
* Line Speed                                 0300                   *
* Line Parity                                2                      *
* Number of Stop Bits                        1                      *
* Dialing Modem Control String               ATDP,,,                *
* Answering Modem Control String             ATS0=1                 *
*                                                                    *
**********************************************************************
```

This example demonstrates the communication equipment defaults used for long-distance dial-up to Vienna at 300 baud, Full Duplex, with an asynchronous autodial modem.

Possible changes that will have to be made are as follows:

- Host Phone Number - If the Public Packet Switching Data Network is being used, this phone number is not for the host, but for the local carrier allowing access to its Network.

- Modem Dial Type - This setting will be 1 for an Autodial modem or 2 for manual dial. If a manual dial modem is in use and problems occur making a connection with this setting at 2, proceed as follows: change this setting to 1 for an autodial modem; dial the phone number manually when a blank screen appears; wait for a high pitched tone; press the data button on the modem; hang up the phone and the "connected" message will appear on your screen.

- Port Number of PC Communications Adapter - Usually this is 1 for Port COM1. Refers to the asynchronous port where the modem is connected.

- Line Speed - Check the dial-up phone number in use to make sure the speed corresponds with the number being dialed.

- Line Parity - 2(even) for asynchronous connections.

- Number of Stop Bits - 1 for asynchronous connections.

- Dialing Modem Control String - Refer to the manual for the modem in use. For Hayes compatible modems, AT gains the modem's attention, DP is for dial pulse, DT is for dial tone.

- Answering Modem Control String - Refer to the manual for the modem in use.

  For information on changing these parameters, please consult the local PTT or call INTIB in Vienna.--

8. PSPC Nickname Directory

The directory has been filled in with those presently connected to Screen Mail and those to be connected. As focal points are successfully connected, we will make every effort to inform you via Screen Mail. Please note that these focal points in the connection process are described as NA(not active) after the focal point name and country.

To view this directory, proceed as follows from the current disk drive prompt:

```
*************************************************************************
*                                                                       *
*   C:                          [Press Enter]                           *
*   CD \                        [Press Enter]                           *
*   PSPCNEW                     [Press Enter]                           *
*                                                                       *
*************************************************************************
```

Once inside the PSPC Program choose:

```
*************************************************************************
*                                                                       *
*   Menu option 6 Directory from the Main Tasks Menu PS/PC:2            *
*   Menu option 1 Nicknames from the Directory Menu PS/PC:51            *
*                                                                       *
*************************************************************************
```

The top half of the screen will display as:

```
PS/PC:45                      NICKNAMES
*************************************************************************
*Nickname(s)   1   -   10 of xx                                         *
*                                                                       *
*NICKNAME  USER'S NAME              USER ID     ADDRESS OR PHONE NUMBER *
*                                                                       *
*ADWOA     A. Sey, TTC, Ghana  NA GHUNI001    GBIBNN00                 *
*AIA       Al-Maliki, AIA,QatarNA QAMNI001    GBIBNN00                 *
*                                                                       *
*************************************************************************
```

9. Please Demonstrate Your Success

When you succeed in your connections, please send a message to INTIB. We answer the mail every day and will help complete your testing by responding with our congratulations. Our phone numbers are in the nickname directory at the end of the list should you require help or clarification.

APPENDIX I

Excerpts from The PC Workstation Program
United Nations International Computer Centre
Device X.3 Profile

X.3 Parameters

CCITT Recommendation X.3 standardizes the interface between ASCII-type asynchronous terminals, such as a PC, and the X.25 packet switching data networks. The PAD parameters are collectively referred to as the "Device X.3 Profile".

As the PC Workstation is capable of simultaneous two-way data traffic (it can send and receive data at the same time), all echoing of data from the PAD requires to be suppressed by means of the X.3 parameters.

You can normally request a list of the X.3 parameters when connected to the X.25 PAD by giving the X.28 command "PAR?".

<1> X.3:PARM.1-20 Index of X.3 Parameters 1-20

Help X.3-PARAMETERS

X.3 Parameters 1-20

<1>	X.3/P1:PAD-X.28	PAD Recall Character
<2>	X.3/P2:ECHO	Echo Enable
<3>	X.3/P3:FORWARD	Packet Forwarding
<4>	X.3/P4:FWRD-IDLE	Packet Forwarding Idle Timer
<5>	X.3/P5:PC-FLOW	PC Flow Control by PAD
<6>	X.3/P6:PAD-MSG	Service Signal Control
<7>	X.3/P7:BREAK	Break Signal Support
<8>	X.3/P8:PARM8	Parameter 8 (nonconfigurable)
<9>	X.3/P9:CR-NULs	Carriage Return Padding
<10>	X.3/P10:LINE-LEN	Line Folding
<11>	X.3/P11:DATARATE	Data Rate
<12>	X.3/P12:PAD-FLOW	PAD Flow Control by PC
<13>	X.3/P13:LF-INS	Line Feed Insertion
<14>	X.3/P14:LF-NULs	Line Feed Padding
<15>	X.3/P15:EDIT	Edit
<16>	X.3/P16:CHAR-DEL	Character Delete
<17>	X.3/P17:LINE-DEL	Line Delete
<18>	X.3/P18:LINE-DSP	Line Display
<19>	X.3/P19:EDIT-MSG	Editing Service Signals
<20>	X.3/P20:ECHOMASK	Echo Mask

Help X.3:PARM.1-20

X.3 Parameter 1 -- PAD Recall Character

The Pad Recall Character parameter allows you to specify which character will cause the PAD you are connected to to return to X.26 control mode:

0 =	X.28 mode not possible
1 =	Possible by DLE character (Control P)
2-127 =	Decimal value of the ASCII character used to access X.28 mode

Help X.3/P1:PAD-X.28

X.3 Parameter 2 -- ECHO Enable

The ECHO Enable parameter allows you to enable the PAD to echo the received characters back to the PC.

0 =	Disable Echo
1 =	Enable Echo

Help X.3/P2:ECHO

X.3 Parameter 3 -- Packet Forwarding

The Packet Forwarding parameter defines when a packet should be sent from the PC to the host.

0 =	No Data Forwarding
1 =	Alphanumeric characters
2 =	CR (carriage return)
4 =	ESC, BEL, ENQ, or ACK
8 =	DEL, CAN, or DC2
16 =	EOT or ETX
32 =	HT, LF, VT or FF
64 =	Other ASCII control codes (0-31)
xxx =	Any combination of above values

Help X.3/P3:FORWARD

X.3 Parameter 4 -- Packet Forwarding Idle Timer

The Packet Forwarding Idle Timer parameter causes a packet to be sent from the PC to the host at the end of an idle time period.

0 =	No idle timer
1-255 =	Multiples of 0.05 seconds (maximum 12.75 seconds)

Help X.3/P4:FWRD-IDLE

X.3 Parameter 5 -- PC Flow Control by PAD

The PC Flow Control by PAD parameter determines whether or not the PAD uses XON/XOF to control the data flow from the PC.

0 = No flow control by PAD
1 = XON/XOF flow control by PAD

Help X.3/P5:PC-FLOW

X.3 Parameter 6 -- Service Signal Control

The Service Signal Control parameter allows you to turn off PAD messages and/or PAD service prompts.

0 = No PAD messages or service prompt
1 = PAD outputs messages only
4 = PAD outputs service prompts only
5 = PAD outputs both prompts and messages

Help X.3/P6:PAD-MSG

X.3 Parameter 7 -- Break Signal Support

The Break Signal Support parameter determines the action of the PAD upon detection of a BREAK signal from the PC.

0 = No action
1 = Interrupt packet sent
2 = Reset packet sent
4 = Indication of break PAD message
8 = Escape to X.28 mode
16 = Discard output to device

Help X.3/P7:BREAK

X.3 Parameter 8 -- (nonconfigurable)

Parameter 8 is nonconfigurable.

Help X.3/P8:PARM8

X.3 Parameter 9 -- Carriage Return Padding

The Carriage Return Padding parameter causes the PAD to send a specified number of null characters to the PC following the transmission of a carriage return (CR) to the PC.

0 = None
1-255 = Number of padding characters after CR

Help X.3/P9:CR-NUL

X.3 Parameter 10 -- Line Folding

The Line Folding parameter allows you to lim. the length of a line sent to the PC from the PAD by selecting how many characters will be output to the PC before the PAD automatically inserts a carriage return (CR).

0 = None
1-255 = Number of characters that trigger line folding

Help X.3/P10:LINE-LEN

X.3 Parameter 11 -- Data Rate

The Data Rate parameter allows you to select the channel data rate.

0 =	110 bits per second (bps)
1 =	134.5 bps
2 =	300 bps
3 =	1200 bps
4 =	600 bps
5 =	75 bps
6 =	150 bps
7 =	1800 bps
8 =	200 bps
10 =	50 bps
11 =	(invalid)
12 =	2400 bps
13 =	4800 bps
14 =	9600 bps
32 =	AUTOBAUD (110-9600, EXCEPT for 134.5 bps)

Help X.3/P11:DATARATE

X.3 Parameter 12 -- PAD Flow Control by PC

The PAD Flow Control by PC parameter determines whether or not the PC uses XON/XOF to control the data flow from the PAD.

0 =	No flow control by PC
1 =	XON/XOF flow control by PC

Help X.3/P12:PAD-FLOW

X.3 Parameter 13 -- Line Feed Insertion

The Line Feed Insertion parameter causes the PAD to insert a line feed (LF) character in to the data stream on detection of a carriage return (CR).

0 = No line feed insertion
1 = LF after CR received from host
2 = LF after CR sent to host
3 = LF after CR from or to host
4 = LF after CR when ECHOing
5 = LF after CR to PC when ECHO or host sends CR
6 = PAD transmits LF when ECHOing or transmitting CR
7 = PAD transmits LF after all CRs

Help X.3/P13:LF-INS

X.3 Parameter 14 -- Line Feed Padding

The Line Feed Padding parameter causes the PAD to output a specified number of NUL characters following the transmission of a line feed (LF) to the PC.

0 = No line feed padding
1-127 = Number of padding NULs after LF

Help X.3/P14:LF-NUL

X.3 Parameter 15 -- Edit

The Edit parameter controls the use of editing characters defined by parameters 16. 17, and 18.

0 = No editing
1 = Editing enabled

Help X.3/P15:EDIT

X.3 Parameter 16 -- Character Delete

The Character Delete parameter specifies the ASCII character that the PC uses to request a character deletion service.

0-127 = Decimal value of character used for character delete

Help X.3/P16:CHAR-DEL

X.3 Parameter 17 -- Line Delete

The Line Delete parameter specifies the ASCII character that the PC uses to request a line deletion service.

0-127 = Decimal value of character used for line delete

Help X.3/P17:LINE-DEL

X.3 Parameter 18 -- Line Display

The Line Display parameter specifies the ASCII character that the PC uses to request the PAD to display the current input.

0-127 = Decimal value of character used for line display

Help X.3/P18:LINE-DSP

X.3 Parameter 19 -- Editing Service Signals

The Editing Service Signals parameter specifies the type of device for the editing control signals.

1 = Hard copy device
2 = Video display device

Help X.3/P19:EDIT-MSG

X.3 Parameter 20 -- Echo Mask

The Echo Mask parameter allows echoing of selected characters when Parameter 2, ECHO, is enabled.

0 = No characters echoed
1 = Alphanumeric characters
2 = Carriage Return (CR)
4 = ESC, BEL, ENQ, ACK
8 = DEL, CAN, DC2
16 = ETX, EOT
32 = HT, LF, VT, FF
64 = All other ASCII control codes (0-31)
128 = All remaining characters
xxx = Any combination of the above values

Help X.3/P20:ECHOMASK

Installation Batch File for Configured

PSPC Software

```
a:
cd \
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *  "IBM Personal Computer DOS Version 3.3" should display following             *
echo *  this frame.  It the version is lower than 3.3, please obtain                *
echo *  at least 3.3 and refer to you computer reference manual for installing      *
echo *  a subsequent version of DOS.                                                *
echo *                                                                              *
echo ********************************************************************************
ver
pause
imenu
```

Installation Batch File for Configured
PSPC Software

```
a:
cd \
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *      PSPC Screen Mail Test Program Set-Up Menu (1)                           *
echo *                                                                              *
echo *  1.  Verify that operating system is at release DOS 3.3 or higher            *
echo *  2.  Check for CONFIG.SYS minimum statements of FILES=15 BUFFERS=16          *
echo *  3.  COPY PSPC Screen Mail Test Programs from "A:" to "C:"                   *
echo *      (Intended for initial loading of the programs and for                   *
ECHO *       reloading programs to obtain original configuration)                   *
echo *                                                                              *
echo *      Please choose "1"-"3" and press "Enter"                                 *
echo ********************************************************************************
```

Installation Batch File for Configured
PSPC Software

```
a:
cd \
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *  This procedure creates directories \PSPC.SYS, \PSPC.M, \PSPC.DOC,           *
echo *  \PSPCSWAP and \PSPCTUT on fixed disk "C:" if they do not exist.             *
echo *  Files from the diskette in drive "A:" are then copied into these            *
echo *  directories.                                                                *
echo *                                                                              *
echo *  If the fixed disk or diskette drive are not labeled "C:" and "A:"           *
echo *  respectively, please stop this procedure by pressing "Ctrl C" and           *
echo *  refer to MAKE DIRECTORY and COPY in the DOS Manual to copy these files.     *
echo *  To return to the menu after "Ctrl C" type "IMENU" and press "Enter"         *
echo *                                                                              *
echo ********************************************************************************
pause
IF NOT EXIST C:\PSPC.SYS\*.* MD C:\PSPC.SYS
IF NOT EXIST C:\PSPC.M\*.* MD C:\PSPC.M
IF NOT EXIST C:\PSPC.DOC\*.* MD C:\PSPC.DOC
IF NOT EXIST C:\PSPCSWAP\*.* MD C:\PSPCSWAP
IF NOT EXIST C:\PSPCTUT\*.* MD C:\PSPCTUT
ECHO OFF
CLS
echo ********************************************************************************
echo *                                                                              *
echo *    Now copying files on Diskette 1/4 from "A:" to "C:"                       *
echo *                                                                              *
ECHO ********************************************************************************
copy a:\pspcrun.bat c:\pspcrun.bat
copy a:\pspctut.bat c:\pspctut.bat
copy a:\pspcswap\*.* c:\pspcswap\*.*
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *  Please insert Diskette 2/4 in diskette drive "A:" and press "Enter"         *
echo *                                                                              *
echo ********************************************************************************
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo * Now copying files on Diskette 2/4 from "A:" to "C:"                          *
echo *                                                                              *
echo ********************************************************************************
copy a:\pspc.m\*.* c:\pspc.m\*.*
copy a:\pspc.sys\*.* c:\pspc.sys\*.*
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo * Please insert Diskette 3/4 in diskette drive "A:" and press "Enter"          *
echo *                                                                              *
echo ********************************************************************************
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *  Now copying files on Diskette 3/  from "A:" to "C:"                         *
```

Installation Batch File for Configured
PSPC Software

```
a:
cd \
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *   The display following this frame will show the contents                    *
echo *   of the CONFIG.SYS file if it exists.  Please check for the                 *
echo *   FILES and BUFFERS parameters.  If the CONFIG.SYS file is                   *
echo *   not on disk or these two parameters need to be added, please               *
echo *   refer to the DOS manual on creating/editing a CONFIG.SYS                   *
echo *   file with EDLIN or COPY CON and add these two statements:                  *
echo *                FILES=15                                                      *
echo *                BUFFERS=16                                                    *
echo *                                                                              *
echo ********************************************************************************
c:
cd \
type config.sys
pause
a:
cd \
imenu
```

Installation Batch File for Configured
PSPC Software

```
copy a:\pspc.sys\*.* c:\pspc.sys\*.*
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo * Please insert Diskette 4/4 in diskette drive "A:" and press "Enter"          *
echo *                                                                              *
echo ********************************************************************************
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo * Now copying files on Diskette 4/4 from "A:" to "C:"                          *
echo *                                                                              *
echo ********************************************************************************
copy a:\pspctut\*.* c:\pspctut\*.*
pause
echo off
cls
echo ********************************************************************************
echo *                                                                              *
echo *      Restoration of Files is Completed...                                    *
echo *                                                                              *
echo ********************************************************************************
pause
```

VII APPENDICES

2. Quik-Comm through GEISCO

UNIDO

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

VIENNA INTERNATIONAL CENTRE
P.O. BOX 300, A 1400 VIENNA, AUSTRIA
TELEPHONE 26 310 TELEGRAPHIC ADDRESS UNIDO VIENNA TELEX 135612

REFERENCE Electronic Mail DATE 16 February, 1989

Dear Mr. Haberbusch,

The Industrial and Technology Information Bank(INTIB), UNIDO, is currently comparing electronic mail systems for connecting focal points internationally. The International Centre for Genetic Engineering and Biotechnology(ICGEB), UNIDO, is currently using GE Quik Com and it appears suitable for inclusion in the comparison. Following are points of consideration that I would like to discuss with you or your representative at your earliest convenience:

1. Connection Possibilites For Focal Points(see attached list)

   1.1 How many of those listed could reach a GE node or the Mark*Net by making a local phone call?

   1.2 For those listed that cannot reach a GE node with a local phone call, what are their connection possibilites?

   1.3 Does the GE system include the East bloc countries and if so what are the restrictions for connection?

2. GEISCO Charges

   2.1 Contract/Costs

      2.1.1 Could the basic charges(approximately 83 AS per user number, 63 AS per address) plus the contract charges be assumed by INTIB with separate billing to each focal point for usage time?

      2.1.2 Could the connections be established as such with one contract?

      2.1.3 What is cost per year per contract?

      2.1.4 What is the cost for registering each new user?

UNITED NATIONS NATIONS UNIES

3. Technical Considerations

3.1 INTIB focal points generally use 300/1200 asynchronous modems. Does this present connection problems for Quik Com?

3.2 Are peer to peer(direct user to user) connections possible using the Quik Com software?

3.3 For Quik Com users using Apple machines and Apple Link, is it possible to transfer files and/or send/receive mail to an IBM PC or compatible. Is special software needed?

I have tried to reach you at 65 97 11 with no success. Please call me at 26 31 3700 at your earliest convenience or write to the above address. Thank you for your time and consideration.

Sincerely yours,

Joy Ralston
Industrial Information Officer
Industrial and Technological
Information Section

Mr. Edmund Haberbusch
Prinz Eugen-Strasse 8/8
A-1040 Vienna, Austria

Potential Focal Points to Connect

COUNTRY	CITY	ORGANIZATION
ALGERIA	- Alger	ENORI
BELGIUM	- Brussels	BCE
BRAZIL	- Brasilia	IBICT
BULGARIA	- Sofia	CISTI
BURKINO FASO	- Ouagadougou	EDDI
CAMEROON	- Douala	CAPME
CANADA	- Ottawa	IDRC
CHINA	- Beijing	CIEIC
CHINA	- Beijing	ISTIC
CUBA	- Habana	IDICT
CZECHOSLOVAKIA	- Prague	CSJP
CZECHOSLOVAKIA	- Prague	SCST
CZECHOSLOVAKIA	- Prague	UTRIN
EGYPT	- Cairo	IDSC
ETHIOPIA	- Addis Ababa	IDSD
FINLAND	- Helsinki	FFIDC
FRANCE	- Paris	CFCE
GERMANY FR	- Frankfurt	KFW
GERMANY FR	- Eschborn	GATE
GHANA	- Accra	CSIR
GREECE	- Athens	HOMMEH
HUNGARY	- Budapest	OMIKK
INDIA	- New Delhi	DGTD
INDIA	- Bangalore	APCIT
INDONESIA	- Jakarta	AIRD
IVORY COAST	- Abidjan	SAPID
KENYA	- Nairobi	KIRDI
KOREA DPR	- Pyongyang	CSTII
MALAYSIA	- Kuala Lumpur	TTUID
MEXICO	- Mexico City	LANFI
MONGOLIA	- Ulan Bator	NSTIC
NIGERIA	- Ikeja	FIIRO
OMAN	- Muscat	IRID
PERU	- Lima	ALIDE
PERU	- Lima	ITINTEC
PHILIPPINES	- Makati	BSMBD
POLAND	- Warsaw	ISTEI
QATAR	- Doha	AIAMIA
RWANDA	- Kigali	DPI
SAUDI ARABIA	- Riyadh	MIE
SENEGAL	- Dakar	ARCT
SENEGAL	- Dakar	SONEPI
SYRIA AR	- Damascus	CI
TANZANIA UR	- Dar Es Salaam	TIRDO
TRINIDAD & TOBAGO	- Tunapuna	CARIRI
TUNISIA	- Tunis	API
TURKEY	Ankara	TUBITAK
UNITED KINGDOM	- Melton Mowbray	PERA
URUGUAY	Montevideo	CNPDI
USSR	Moscow	VINITI
USSR	Moscow	ICSTI
VENEZUELA	Caracas	DGST
VIET NAM	Hanoi	CISTI
ZAMBIA	Lusaka	NCSR

VII APPENDICES

3. European Academic Research Network (EARN) through the IAEA mainframe

European Academic Research Network
Through the IAEA Mainframe

User Instructions For Electronic Mail

Donna Patoprsty
27 February, 1989

INDEX

The European Academic Research Network (EARN) connects more than one thousand universities throughout the world to an electronic mail system with file transfer capabilities. The Vienna International Centre (VIC) uses EARN as an internal and external mailbox system via the International Atomic Energy Agency (IAEA) mainframe computer.

The Industrial and Technological Information Bank (INTIB) has a direct coax cable connection to the IAEA mainframe computer that allows usage of several services including EARN. The cost in this arrangement is paid as a lump sum fee by the United Nations Industrial Development Organization (UNIDO) to the IAEA for the use of the mainframe computer.

Communication between the IAEA mainframe and the IBM PS/2 Model 60 currently connected via coax cable requires a software emulation package and a 3278 adapter card in the PC. The emulation software package in use at INTIB is the IBM PC 3270 Emulation Program Version 3.00.

1. Starting the 3270 Emulation software

Turn on the PC and boot it in the normal fashion. To begin the 3270 emulation program, proceed as follows from the current drive prompt:

```
**************************************************************************
*                                                                        *
*    CONNECT                          [Press Enter]                      *
*                                                                        *
**************************************************************************
```

The following will display:

```
**************************************************************************
*                                                                        *
*    CONNECTING TO THE IAEA MAINFRAME ... PLEASE WAIT !                  *
*                                                                        *
*    The 3270 TASK SELECTION menu will display after this frame.         *
*                                                                        *
*    To begin IAEA logon procedures, type "a" at the TASK menu prompt    *
*    line and press the numeric pad Enter key.                           *
*                                                                        *
*    To return to the 3270 TASK menu from the IAEA INITIAL menu,         *
*    press Alt and hold then press F8 and release both.                  *
*                                                                        *
**************************************************************************
Strike a key when ready . . .
```

After striking any key to continue, the IBM logo for the PC 3270 Emulation will appear and request "Press any key to continue." After pressing any key, the 3270 Task Selection Menu will then display as follows:

```
*******************************************************************************
*                                                                             *
*                                        ext 101                              *
*                      3270 TASK SELECTION                                    *
*                                                                             *
*                      ID    ITEM                                             *
*                                                                             *
*                      a     Communicate                                      *
*                      b     Communication Profile Tasks                      *
*                      z     EXIT                                             *
*                                                                             *
*Type ID letter to choose ITEM; press ENTER                                   *
*                                                                             *
*******************************************************************************
```

Upon display of this screen, the keyboard attached to the PC will have been re-mapped. Re-mapping means that all but the letter keys on the keyboard have a new function in order to simulate a mainframe terminal. The keys required by the user for the EARN electronic mail are listed below:

KEY	OLD FUNCTION	NEW FUNCTION
Letter Pad Enter	Send Command to PC/ Advance Lines	Advance Lines Only
Numeric Pad Enter	Send Command to PC/ Advance Lines	Send Commands Only
Ctrl	In combination with other keys, for ext-ended functions	Reset Screen Error Key
F3	Dependent on Software	Return to Previous Screen
F7	Dependent on Software	Page Backward
F8	Dependent on Software	Page Forward
Alt F8	Dependent on Software	Cancel Emulation

To reach the IAEA mainframe type "a" on the 3270 Task Selection Menu and press the numeric pad Enter key.

2. Logging On to the IAEA Mainframe

After typing "a" to communicate on the 3270 Task Selection Menu, the following will display:

```
*************************************************************************
*                                                                       *
*IAEAVT00I          INITIAL MENU                                        *
*IAEAVT11I          I A E A - C O M P U T E R  S E C T I O N            *
*                                                                       *
*    THE FOLLOWING APPLICATIONS ARE AVAILABLE:                          *
*                                                                       *
*    APPLICATION    TERMINAL-INPUT TO CONNECT / TO LEAVE APPLICATION     *
*    -----------    ---------------------------------------------       *
*                                                                       *
*    TSO            LOGON OR LOGON UID / LOGOFF                        *
*                                                                       *
*    CICS           CICS / CSSF                                        *
*                                                                       *
*IN CASE OF PROBLEMS,PLEASE CONTACT THE DATA CENTRE EXTS. 2910 OR 2929* *
*PLEASE ENTER HERE==========>                                           *
*                                                                       *
*************************************************************************
```

Interaction with the EARN electronic mail is controlled by the Time Sharing operating system (TSO). To logon to TSO for EARN, type "LOGON XXX" where XXX is INTIB's user identification and press the numeric pad Enter key. The user identification code is kept by the Industrial Information Officer. A sample system message follows as:

```
*************************************************************************
*    ACF82004 ACF2, ENTER PASSWORD -                                    *
*************************************************************************
```

The password is kept by the Industrial Information Officer in charge. Enter the password and press the numeric pad Enter key. The password will not display as it is typed. To change the password, use the format XXXXX/YYYYY at the password prompt where XXXXX is the old password and YYYYY is the new password then press the numeric pad Enter key. A sample system logon message follows as:

```
*************************************************************************
*    ACF82000 ACF2, LOGON IN PROGRESS                                   *
*    ACF01137 XXX LAST SYSTEM ACCESS 09.12-20/02/89 FROM IBMEG015       *
*    ***                                                                *
*************************************************************************
```

The *** is TSO's signal that it expects input from the user. Type "spf" and press the numeric pad Enter key. A sample system response message follows:

```
*************************************************************************
*    XXX LOGON IN PROGRESS AT 11:54:04 ON FEBRUARY 23, 1989             *
*    YOUR CURRENT PREFIX IS ULJBR                                       *
*************************************************************************
```

At odd times, READY may appear upon logon. Should this be the case, type "spf" again and press the numeric pad Enter key.

3. Mail System Menu Basics - Getting Started

The Mail System has an on-line tutorial that is a good resource for user questions. This tutorial can be accessed at most times by typing "HELP" on the Option or Command prompt lines and pressing the numeric key pad Enter key. It can be referenced directly from the Mail System Primary Option Menu by choosing menu option "T".

After the logon process is completed, the user is shown the Mail System Primary Option Menu or the ISPF/PDF PRIMARY OPTION MENU. To obtain the Mail System Primary Option Menu from the ISPF/PDF PRIMARY OPTION MENU, type "M" on the prompt line and press the numeric key pad Enter key as displayed below.

```
*****************************************************************************
*                                                                           *
*------------------  ISPF/PDF PRIMARY OPTION MENU  --------------------*
*OPTION ===>M                                                               *
*                                                                           *
*    0    ISPF PARMS      -Specify terminal and user parameters             *
*    1    BROWSE          -Display source data or output listings           *
*    2    EDIT            -Create or change source data                     *
*    3    UTILITIES       -Perform utility functions                        *
*    4    FOREGROUND      -Invoke language processors in foreground         *
*    5    BATCH           -Submit job for language processing               *
*    6    COMMA           -Enter TSO command or CLIST                       *
*    7    DIALO  'EST     -Perform dialog testing                           *
*    8    LIBRA  AN       -Librarian Master File Management                 *
*    A    ASM2            -ASM disk space management system                 *
*    B    SDSF            -Spool display and search facility                *
*    I    INFO            -System Information(FLASH,XEROX,SDSF)             *
*    L    LM UTILITIES    -Perform library management utility functions*
*    N    CHANGES         -Display summary of changes for this release *
*    M    MAIL            -E.A.R.N. mail system                             *
*    T    TUTORIAL        -Display information about ISPF/PDF               *
*    X    EXIT            -Terminate ISPF using log and list defaults       *
*                                                                           *
*Enter END command to terminate ISPF.                                       *
*                                                                           *
*************** ***************************************************************
```

The Mail System Primary Option Menu displays as follows:

```
*****************************************************************************
*                                                                           *
*----------------------Mail System Primary Option Menu ---------------------*
*Option ===>                                                                *
*                                                                           *
*     0     OPTIONS    -Select your MAIL options                            *
*     1     MAILBOX    -Look into MAIL-box                                  *
*     2     SEND       -Compose and send MAIL                               *
*     3     NAMES      -Edit Nickname Dataset                               *
*     4     NOTEBOOK   -Browse the Notebook                                 *
*     5     RESUME     -Resume previously suspended mail editing            *
*     6     NODES      -Display Nodes which can be reached via MAIL         *
*     7     USERS      -Display IAEA Users using this Mail System           *
*                                                                           *
*     N     NEWS       -Latest News about the Electronic Mail System        *
*     T     TUTORIAL   -Display information about the Electronic Mail Sys*
*                                                                           *
*****************************************************************************
```

A brief description of the most frequently used menu options on the Mail System Primary Option Menu follows with examples where needed. For all menu options, type the desired option on the prompt line and press the numeric pad Enter key.

To move around on any of the following displays use the following keys:

Letter Pad Enter	-	Advance Lines
Numeric Pad Enter	-	Send Commands
Tab	-	Advance Fields
F3	-	Return to Previous Screen
F7	-	Page Backward
F8	-	Page Forward

1 MAILBOX -Look into MAIL-box(receive)

The mail will automatically be put into your mailbox. To check the mail from the following display, position the cursor on the first comma of the item to check and type "s" for see and press the numeric pad Enter key. To delete an item from the following display, position the cursor on the first comma of the item to check and type "d" for delete and press the numeric pad Enter key.

```
*****************************************************************************
*                                                                           *
*     ---- ------ Pending Mail Index - ----------Item 1 of X*
*Command ===>                                          SCROLL ===> PAGE*
*                                                                           *
*               Date       From           Subject                         *
*,,,,           17 Nov     UC5            Bitnet/EARN                     *
*                                                                           *
*---- ----------End of Mail Index---------- ----------                     *
*****************************************************************************
```

2 SEND

The first step of the SEND option is addressing the mail. The Send a Note - Envelope menu will display as follows. The required entries on this screen are Receiving users and Subject. The receiving user can be a Nickname that was previously established (see menu option 3 NAMES) or the actual EARN address. To fully identify a receiving user, type the assigned user name, @ and the user node address. Users established with the IAEA can be found with Mail System Primary Option Menu number 7 USERS. After entering the receiving user and subject press the numeric pad Enter key.

```
***********************************************************************
*                                                                     *
*----------------------Send a Note - Envelope Menu ------------------*
*Command  ===>                                                        *
*                                                                     *
*(Enter Nicknames or full address, or "*" to reuse the last note):   *
*                                                                     *
*Receiving user(s)  ===>                                              *
*Subject            ===>                                              *
*                                                                     *
*Carbon Copy (CC to ===>                                              *
*Blind Copy (BCC)to ===>                                              *
*                                                                     *
*------------------------Override your Mail Options------------------*
*                                                                     *
*LOG the mail when sending ==>  YES   NOTEBOOK name ==> MISC          *
*Send a self copy          ==>  NO                                    *
*NICKNAME data set name    ==>  NAMES.TEXT                            *
*Adress format             ==>  NORMAL                                *
*                                                                     *
***********************************************************************
```

The Send a Note screen will display as follows. Enter the text beginning at line 6. The first four lines displayed come from the Envelope Menu and can be changed if desired during note entry. To send the note, press the numeric pad Enter key twice, type "send" and press the numeric pad Enter key again. To quit note entry entirely, press the numeric pad Enter key twice, type "cancel" and press the numeric pad Enter key again. To suspend note entry and return later, press the numeric pad Enter key twice, type "suspend" and press the numeric pad Enter key again. Use the letter key pad Enter key to move around the note.

```
***********************************************************************
*                                                                     *
*  ------------------- Send a Note --------------    ---COLUMNS 001 072*
*Command        SEND                                   SCROLL ===> CSR*
*000001 Date:          Fri, 24 Feb 89 14:29 CET                       *
*000002 From:          "JOY RALSTON"          <xxx>                   *
*000003 To:            xxx@iaea1                                      *
*000004 Subject:       test                                           *
*000005                                                               *
* NOTE      - Use SEND to send the Note, CANCEL to abort     <--      *
*000006                                                               *
***********************************************************************
```

3 NAMES

The NAMES file editing screen is displayed as follows. To find a name, position the cursor on the Nickname entry field with the letter pad Enter key, type the nickname to find, position the cursor on the Command line, type "f" and press the numeric pad enter key. To add a nickname, positon the cursor using the letter pad Enter key, type the nickname and node information, position the cursor on the Command line, type "a" for add and press the numeric pad Enter key.

```
*********************************************************************
*                                                                   *
*------------XXX's NAMES file editing - NAMES.TEXT -----------------*
*Command ==>                                                         *
*                                                                   *
*Enter: F (or blank) - Find  A - Add     C - Clear input fields     *
*       N (or PF20)  - Next  D - Delete  Cancel - Exit without update *
*       P (or PF19)  - Prev  U - Update  EDIT,E - Edith the NAMES data*
*                                                                   *
*Nickname  ==>              Name   ==>                              *
*Electronic Mail Address (one of the lines - required):             *
*  Node Name  ==>         Userid  ==>                               *
*    -- or --                                                       *
*  Full Network Address ==>                                         *
*    -- or --                                                       *
*  Distribution list (Nicknames) ==>                                *
*Optional fields:                                                   *
*    Phone   ==>                                                    *
*    Address ==>                                                    *
*********************************************************************
```

5 RESUME

If the suspend command was used with menu option 2 SEND, the Pending Suspended Mail screen will appear as follows. To resume note entry, position the cursor on the first comma of the note to resume, type "r" and press the numeric pad enter key.

```
*********************************************************************
*                                                                   *
*-------------------------- Pending Suspended Mail    -----Item 1 of 1*
*Command ==>                                           SCROLL == PAGE*
*                                                                   *
*Select with: S or B - Browse R - Resume D - Delete                 *
*                                                                   *
* Cmd    Date        Time       To/Subject                          *
* ---    ----------  --------   ----------------------              *
*,,,,    24 Feb 89   14:43:13   xxx@local                           *
*                    subject    test                                *
*************************** BOTTOM OF DATA *************************
*                                                                   *
*********************************************************************
```

4 Logging Off the IAEA Mainframe

Return to the Mail System Primary Option Menu usually by pressing F3 to return to the previous screen. From this menu, press F3 to return to the ISPF/PDF PRIMARY OPTION MENU. From this menu, type "X" for exit and press the numeric pad Enter key. On occasion, the SPECIFY DISPOSTION OF LOG AND LIST DATA SETS screen will appear as follows. At the process option for list options for this session prompt type "k" for keep data set and press the numeric pad Enter key.

```
*******************************************************************************
*                                                                             *
*---------- SPECIFY DISPOSTION OF LOG AND LIST DATA SETS ---------------------*
*COMMAND ==>                                                                  *
*                                                                            *
*LOG OPTIONS FOR THIS SESSION      LIST OPTIONS FOR THIS SESSION              *
*--------------------------       ------------------------------             *
*Process option  ===> D            Process option  ===>                      *
*SYSOUT class    ===> A            SYSOUT class    ===> A                    *
*Local printer ID===>              Local printer ID===>                      *
*                                                                            *
*VALID PROCESS OPTIONS:                                                      *
*    PD - Print data set and delete                                          *
*    D  - Delete data set without printing                                   *
*    K  - Keep data set (allocate same data set in next session)             *
*    KN - Keep data set and allocate new data set in next session            *
*                                                                            *
*  Press ENTER key to complete ISPF termination.                             *
*  Enter END command to return to the primary option menu.                   *
*                                                                            *
*JOB STATEMENT INFORMATION:  (Required for system printer)                   *
*  ===> //xxxF     JOB  (ACCOUNT), 'NAME'                                   *
*  ===> //*                                                                  *
*  ===> //*                                                                  *
*******************************************************************************
```

A logoff message will appear as follows:

```
*******************************************************************************
*    XXX LOGGED OFF TSO AT 11:54:04 ON FEBRUARY 23, 1989                      *
*******************************************************************************
```

On occasion, READY will appear on the screen. Should this occur, type "logoff" and press the numeric pad Enter key.

The IAEA INITIAL MENU will display again at this point. Press Alt and hold then press F8 and release both. After some seconds, the 3270 Task Menu will appear. At the prompt line, type "z" to exit and press the numeric pad Enter key. Normal PC operations can be resumed.

VII APPENDICES

4. EARN through direct node asynchronous dial-up

VII APPENDICES

5. UN ICC through the IAEA mainframe

VII APPENDICES

6. UW ICC through PPSDN using the CALL/ICC Workstation Program

VII APPENDICES

7. UN ICC using British Telecom Dialcom

VII APPENDICES

8. United Nations Development Program (UNDP) EMAIL through British Telecom Dialcom System 41

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

VIENNA INTERNATIONAL CENTRE
P.O. BOX 300, A-1400 VIENNA, AUSTRIA
TELEPHONE 26 310 TELEGRAPHIC ADDRESS UNIDO VIENNA TELEX 135612

REFERENCE Electronic Mail DATE: 17 February, 1989

Dear Sir,

The Industrial and Technology Information Bank(INTIB), UNIDO, is currently considering connecting their global focal points to the United Nations International Computer Centre(UN ICC) in Geneva. Dialcom was recommended as a service that allows access to the UN ICC and operates globally.

It would be of great interest to receive documentation or information on the following points:

- Dialcom application procedures;
- Contract costs for individuals or by group;
- Connection charges for time used;
- Packet Switching Networks(Carriers) that can be used(i.e. Telenet, Tymnet) to reach Dialcom;
- Availability of these carriers to the focal points listed especially restrictions that may exist with East Bloc countries(see attached);
- Normal procedures for acquiring access to these Carriers;

Thank you for your time and consideration. Please feel free to contact me in Vienna at 0222 26 31 3700. I would be very interested in meeting any local representative in this area for further discussion of the matter.

Sincerely yours,

Joy Ralston
Industrial Information [illegible]
Industrial and Technological [illegible]
Information [illegible]

ITT Dialcom
1109 Spring Street
Silver Spring, MD [illegible]

Potential Focal Points to Connect

COUNTRY	CITY	ORGANISATION
ALGERIA	Alger	ENORI
BELGIUM	- Brussels	BCE
BRAZIL	- Brasilia	IBICT
BULGARIA	- Sofia	CISTI
BURKINO FASO	- Ouagadougou	EDDI
CAMEROON	- Douala	CAPME
CANADA	- Ottawa	IDRC
CHINA	- Beijing	CIEIC
CHINA	- Beijing	ISTIC
CUBA	- Habana	IDICT
CZECHOSLOVAKIA	- Prague	CSJP
CZECHOSLOVAKIA	- Prague	SCST
CZECHOSLOVAKIA	- Prague	UTRIN
EGYPT	- Cairo	IDSC
ETHIOPIA	- Addis Ababa	IDSD
FINLAND	- Helsinki	FFIDC
FRANCE	- Paris	CFCE
GERMANY FR	- Frankfurt	KFW
GERMANY FR	- Eschborn	GATE
GHANA	- Accra	CSIR
GREECE	- Athens	HOMMSH
HUNGARY	- Budapest	OMIKK
INDIA	- New Delhi	DGTD
INDIA	- Bangalore	APCIT
INDONESIA	- Jakarta	AIPD
IVORY COAST	- Abidjan	SAPID
KENYA	- Nairobi	KIRDI
KOREA DPR	- Pyongyang	CSTII
MALAYSIA	- Kuala Lumpur	TTUID
MEXICO	- Mexico City	LANFI
MONGOLIA	- Ulan Bator	NSTIC
NIGERIA	- Ikeja	FIIRO
OMAN	- Muscat	IRID
PERU	- Lima	ALIDE
PERU	- Lima	ITINTA
PHILIPPINES	- Makati	BSMBD
POLAND	- Warsaw	INTEI
QATAR	- Doha	AIAMIA
RWANDA	Kigali	
SAUDI ARABIA	Riyadh	
SENEGAL	Dakar	
SENEGAL	Dakar	
SYRIA AR		
TANZANIA UR		

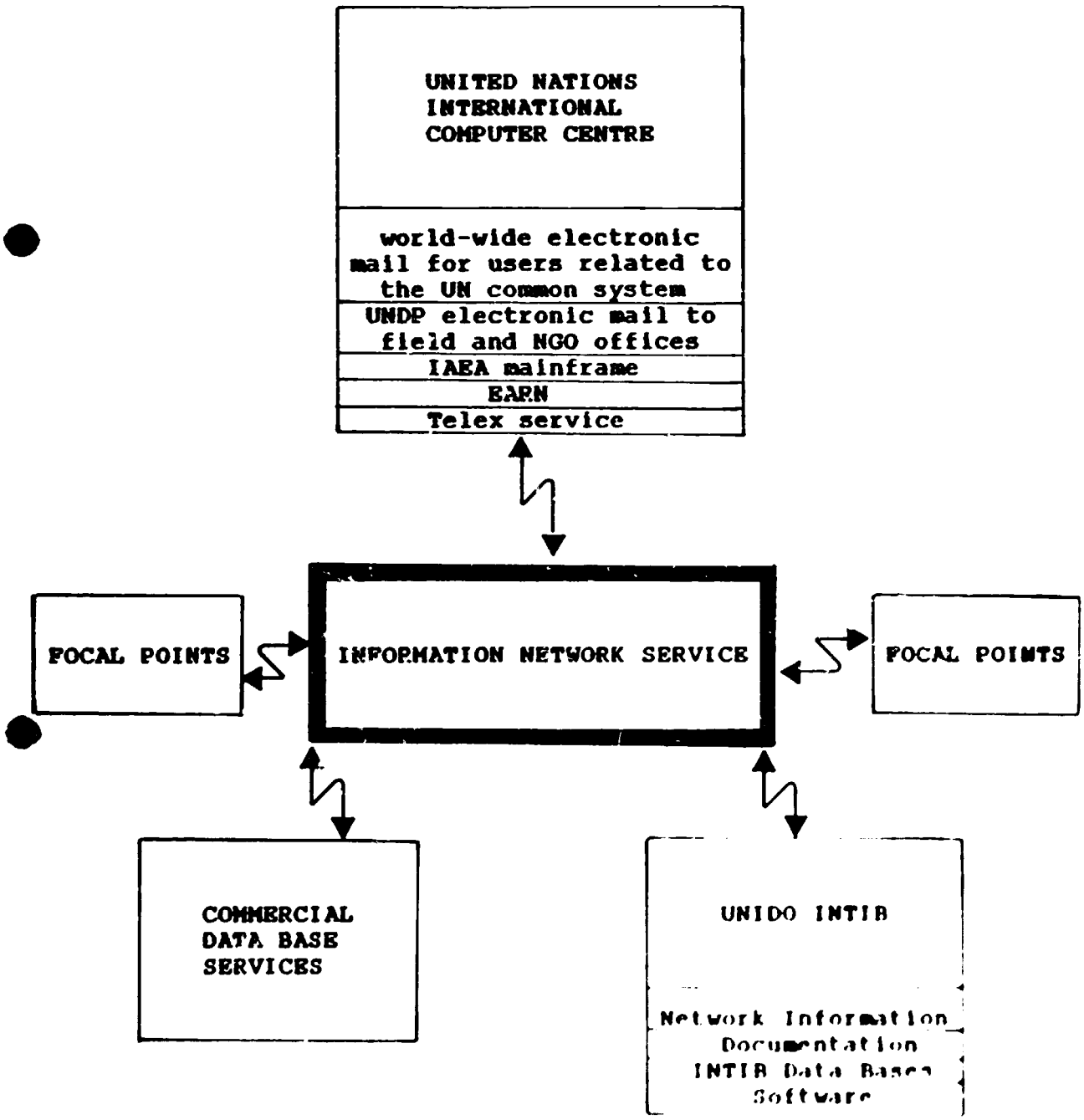
VII APPENDICES

9. IIASA - connection possibilities for East Bloc

VII APPENDICES

10. INTIB Third Advisory Group Meeting Presentation

INTIB TELECOMMUNICATIONS



INTIB TELECOMMUNICATIONS

CURRENT OBJECTIVES

- FOCAL POINT AND INTIB CONNECTIVITY;
- INCREASE THE SPEED OF THE COMMUNICATIONS EXCHANGE PROCESS.

FUTURE OBJECTIVES

- DISSEMINATION OF INTIB DOCUMENTS AND DATA BASES;
- NATIONAL FOCAL POINT ACCESS TO UN AND COMMERCIAL DATA BASES.

TELECOMMUNICATION NEEDS

- UNIFORM SOLUTION;
- COST EFFECTIVE;
- USER FRIENDLY SOFTWARE INTERFACE FOR THE NETWORK;
- EXTENSIVE USE OF PUBLIC PACKET SWITCHING DATA NETWORK OR;
- PRIVATE DATA NETWORK WITH ACCESS TO X.25 HOSTS;
- AVAILABLE AND INFORMED SUPPORT;
- MAXIMUM NATIONAL FOCAL POINT CONNECTIVITY;
- TEXT, DATA BASE AND PROGRAM FILE TRANSFER CAPABILITY;
- MINIMUM COMPUTER AND COMMUNICATION EQUIPMENT.

COMPARING NETWORKS

IBM INFORMATION NETWORK SERVICE USING PSPC SCREEN MAIL

ADVANTAGES

- EXCELLENT MENU DRIVEN SOFTWARE PACKAGE FOR USING NETWORK;
- RELIANCE ON PUBLIC PACKET SWITCHING DATA NETWORK.

DISADVANTAGES

- PROHIBITIVELY EXPENSIVE;
- LACK OF AUTOMATIC LOGON FACILITY FOR PPSDN;
- MAINFRAME AND HIGH SPEED TRANSMISSION ORIENTATION.

COMPARING NETWORKS

GENERAL ELECTRIC INFORMATION SERVICE CO. USING QUIK-COMM

ADVANTAGES

- EXPERIENCE;
- SIMPLE MENU AND COMMAND KEY SOFTWARE FOR USING NETWORK;
- REASONABLE CHARGES;
- MARK*NET PRIVATE DATA NETWORK;
- ABILITY TO REACH ANY X.25 HOST;
- INEXPENSIVE ASYNCHRONOUS CONNECTION ORIENTATION;
- TELEX SERVICE;
- FAX SERVICE;
- LIMITED CONFERENCING SERVICE;
- AUTOMATIC LOGON FACILITY FOR PPSDN.

COMPARING NETWORKS

EUROPEAN ACADEMIC RESEARCH NETWORK USING KERMIT

ADVANTAGES

- INEXPENSIVE;
- WIDE RANGE OF UNIVERSITY CONNECTIONS IN US AND EUROPE;
- USED BY THE IAEA AS INTERNAL/EXTERNAL MAILBOX SYSTEM;
- AVAILABLE THROUGH UN ICC.

DISADVANTAGES

- SOFTWARE INTERFACE IS FOR EXPERIENCED USERS;
- UNIVERSITY OPERATING SYSTEMS ARE OFTEN USER VICIOUS

COMPARING NETWORKS

UN INTERNATIONAL COMPUTER CENTRE USING CALL/ICC WORKSTATION PROGRAM

ADVANTAGES

- INEXPENSIVE;
- INTIB USER IDS AVAILABLE THROUGH UNIDO'S EDP;
- EXCELLENT DOCUMENTATION ON USING PPSDN WITH PCS;
- WIDE RANGE OF SERVICES:
  - UN COMMON SYSTEM ELECTRONIC MAIL;
  - ACCESS TO UN DATA BASES;
  - UNDP ELECTRONIC MAIL FOR FIELD AND NGO OFFICES;
  - TELEX SERVICE;
  - HELP DESK;
  - ONLINE TUTORIALS;
  - ACCESS TO IAEA MAINFRAME;
  - ACCESS TO EARN.

DISADVANTAGES

- BLANK SCREEN SOFTWARE INTERFACE;
- REQUIRES AN EXPERIENCED OR DETERMINED USER

INTIB TELECOMMUNICATIONS

THANK YOU

I'd like to thank the chairman for allowing me to speak today on the progress in the area of INTIB Telecommunications.

CURRENT OBJECTIVES

The current objective in the area of telecommunications is to connect INTIB National Focal Points with each other and INTIB via an information network service.

The initial use of this network will be to increase the speed of the communications exchange process by circumventing telex, cable and the postal service.

FUTURE OBJECTIVES

Looking toward the future, this same network will be used for multi-directional dissemination of INTIB document, data base and program files.

This network must provide flexibility in allowing National Focal Points access to data bases and services provided by the United Nations system and commercially.

TELECOMMUNICATION NEEDS

Based on these general objectives and experience with various networks, INTIB has identified several requirements for an information network service which are as follows:

1. Uniform solution;
2. Cost effective;
3. User friendly software interface for use with the network;
4. Extensive use of the Public Packet Switching Data Network or a private data network that is designed to allow access to UN System and commercial data bases;
5. Available and informed support;
6. Maximum National Focal Point connectivity;
7. Text, data base and program file transfer capabilities;
8. Minimum computer and communication configuration requirements.

COMPARING NETWORKS

Input on possible network solutions has been received from UNIDO's Electronic Data Processing Department, IBM - Austria, General Electric - Austria, United Nations International Computer Centre - Geneva, United Nations Development Programme and the International Atomic Energy Agency.

I'd like to relate findings on four of the networks currently being used in INTIB's UNIDO office that are available or will be made available to National Focal Points.

1. IBM Information Network Service (IBM INS) using Personal Services PC Screen Mail

BACKGROUND

In 1987, a pilot program between INTIB and IBM Austria resulted in a telecommunications report for connecting INTIB National Focal Points to the IBM INS.

In 1988, 16 National Focal Points expressed interest in connecting to this service.

In January 1989, a PSPC Screen Mail test package was developed consisting of software pre-configured at INTIB according to Screen Mail registration forms, the IBM/INTIB telecommunications report and a guide covering installation of the software and Service Engine access.

User Ids have been established for all requesting National Focal Points and the test package is currently being distributed.

ADVANTAGES

- Screen Mail is an excellent menu driven software package for using the IBM INS;

- Heavy reliance on Public Packet Switching Data Networks which will allow future access to the UN ICC and commercial data bases.

DISADVANTAGES

- Proven prohibitively expensive;

- Despite reliance on PPSDN, Screen Mail has no facility for accessing these networks;

- The IBM INS was used internally by IBM offices throughout the world and uses mostly high speed transmissions requiring more sophisticated PC and modem connections than are the norm at INTIB National Focal Points.

2. General Electric Information Service Co. (GEISCO) using Quik-Comm

In 1989, GEISCO was approached for an information network solution. A catalog for INTIB users has been established and the possibility of using GEISCO as a network solution is being tested for feasibility.

ADVANTAGES

- Years of experience in this area;
- Simple straight-forward menu and command key software interface requiring little documentation to use;
- Reasonable charges;
- Mark*Net private data network with local connections for many countries;
- Mark*Net connections can be used to reach any X.25 host such as UN ICC;
- Inexpensive asynchronous connection orientation;
- Telex service;
- Fascimile service;
- Limited conferencing service;
- Facility for reaching PPSDNs which allows automatic logon sessions;

3. European Academic Research Network (EARN) using Kermit

ADVANTAGES

- Very inexpensive;
- Good range of university connections in the US and Europe;
- Used by the IAEA as an internal/external mailbox system;
- Can be reached through the UN ICC which is planning a new menu driven software interface designed by the IAEA;

DISADVANTAGES

- Software interface for PCs is usually Kermit which was written by university students.
- The interface with university operating systems such as CMS are often described as user vicious.

4. United Nations International Computer Centre using CALL/ICC Workstation Program

The CALL/ICC Workstation Program was developed last year in Geneva and received in January, 1989 at INTIB. The idea behind developing this program was to allow users owning just a PC and modem to enter the local PPSDN and be able to use the UN ICC services.

ADVANTAGES

- Very inexpensive;
- An entire catalog of INTIB users can be established from UNIDO's EDP department;
- Excellent documentation on using an ASCII terminal such as IBM or clone PC with an asynchronous connections to PPSDN;
- Wide range of services including:
  - World-wide electronic mail for users related to the UN common system;
  - Access to UN data bases;
  - Access to UNDP electronic mail for field and NGO offices;
  - Telex service;
  - Help desk;
  - Online tutorials;
  - Access to IAEA mainframe;
  - Access to EARN network.

DISADVANTAGES

- After the initial logon menu, the software interface consists mostly of a question mark. This is why the idea of an information network based solely on PPSDN and the UN ICC was eliminated;
- Requires an experienced or determined user.

CONCLUSION

INTIB is continuing its committment to an information network that will provide Focal Points with the maximum number of services, benefits and global connectivity.

Experience in implementing telecommunications for INTIB has shown the need to develop a training program for those who will be using the information network services. Users should be provided with this training either at UNIDO or at the National Focal Points. These users will work with us in Vienna to make INTIB's telecommunication network a reality in the 1990's.

On Thursday and Friday afternoon in D1926, demonstrations and an opportunity for participants to use INTIB telecommunications networks will be provided.

Thank you