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TELECTR USER'S MANUAL

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PREFACE

This Working Paper was written in response to requests for a *telectr* reference manual that does not have to be read from cover to cover to be useful. We hope the command-by-command format and expanded table of contents permit users to quickly locate and master commands of interest. In a similar vein, we offer a "Quick Reference" sheet on the next two pages of this preface. It shows a sample interaction on *telectr* that users can imitate when sending their first messages. We suggest tearing out and retaining this sheet as a summary of how to log in and send a message.

Although both internal and external users can refer to this manual, it is geared mainly for people accessing *telectr* from outside the Institute. IIASA-based users can refer to IIASA Working Paper WP-80-109 for information specific to IIASA's video terminals. For more general information about computerized conferencing as a concept, see IIASA Working Paper WP-80-72.

Quick Reference Sheet

Sample Interaction on *Telectr* using TYMNET

The following list of commands (left column) and comments (right column) is a quick reference for new *telectr* users. It briefly demonstrates how to access *telectr* via the Tymnet network and enter a message on the system. Sending a message is the most direct way for new *telectr* users to interact with each other.

To use Tymnet, switch on your terminal, make sure the terminal and coupler are in REMOTE position (this may also be called "ON-LINE" or something similar; just make sure the terminal is not in "local" mode), and dial the local Tymnet telephone number. The number depends on the baud rate and type of terminal you are using; consult the Tymnet documentation for the phone number appropriate for your type of terminal. Once you hear a high-pitched tone, place the telephone receiver firmly into the acoustic coupler.

You are now ready to connect to the IIASA computer and begin your session on *telectr*. (A note about the conventions used here: **bold face type** indicates lines the user types; normal type face indicates what the computer prints. The symbol "**(R)**" stands for a carriage return, marked on some terminals as "return" and on others as "CR" or "new-line".)

Commands

please type your terminal identifier **a**

please log in: **ii1wui1234etc (R)**
password: **whatever (R)**

HOST IS ON-LINE

login: **telectr (R)**

Welcome

Name? **winters (R)**

winters on at: Thu Apr 16 10:55:30 CET 1981
Last logged in: Thu Apr 16 08:30:08 CET 1981

To see new items type "seecomments <conference-name>"
To enter new item type "newcomment <conference-name>"
To send a message to telectr user(s) type "message"
To read message(s) from telectr user(s) type "readmessage"
To modify existing item type "modify <conference-name> <comment-number>"
To have an overview of all your conferences type "overview"
To see status of conf. participants type "status <conference-name>"
To see an expanded version of this list type "help"
To reread a comment use "listcomment <conference-name> <comment-number>"
To see when a user last logged on type "lastlogin <user-name>"
To quit type "--" "q" or "bye"

Comments

The character you type depends on your terminal; it is most likely an "a" or "e". See your Tymnet documentation for the list of terminals and terminal identifiers.

Type your Tymnet account number for accessing IIASA and a password if you have one.

This is the "login" prompt of the IIASA computer; type *telectr* to log in to the system.

Enter your *telectr* user name (the user in this example is "winters").

Telectr prints login information and a list of frequently used commands.

message (R)

(You are in the editor. IIASA users type "x" to use *edx*. Others type "a" by itself, the text, and "." by itself to enter text.)

ENTERING SCRATCHPAD:

0

*a (R)

Hello. I have successfully logged in (R)
to *telectr*! Please send me a message (R)
when you log in. (R)

.(R)

*w (R)

91

*q (R)

Keys (Word/Phrase/)? (R)

To? pearson lathrop (R)

To:

pearson

lathrop

OK to send? y (R)

Message being sent.

Msg 81318.2219 From: winters Sent: Thu Apr 16 11:04:46 CET 1981 Lines:3

OK to delete SCRATCHPAD? (y/n)? y (R)

bye (R)

login:

"##" is the *telectr* prompt; "message" is the command a user enters to begin sending a message.

SCRATCHPAD is a work area for composing text. The 0 is the number of characters in SCRATCHPAD. * is the editing program's prompt.

If you are using *telectr* from outside IIASA, do *not* type an "x" to use *edx* (a screen editor). Instead, type an "a" (meaning append) on a line by itself.

Enter the message on the lines following the "a". Use "delete" ("rubout" on some terminals) to correct typing mistakes before going to a new line.

A dot (".") on a line by itself terminates the message.

Type "w" to write the message.

Telectr prints the number of characters in the message.

Type "q" to quit.

A one-line "key" summarizing the contents of the message may be entered. Type a carriage return to omit a "key".

Enter user names of intended recipients on one line.

Typing "y" sends the message; typing "n" terminates the process but leaves the contents of the message in SCRATCHPAD.

Normal procedure is to delete the SCRATCHPAD after the message is sent.

"bye" terminates the session.

You can now disconnect from Tymnet by hanging up the telephone receiver.

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INTRODUCTION

This manual explains how to use *telectr*, IIASA's teleconferencing software currently running under the Institute's PDP11-70 UNIX system.¹ *Telectr* provides geographically dispersed users with an easy means of communication via the computer, and is designed for people with little or no computer experience.

First, a few words about terminology. *Telectr* offers two means for users to communicate. MESSAGES are the most direct way for *telectr* users to interact with each other. They are designed for informal, temporary communication and may be discarded if the recipient desires. One *telectr* user may send a message to any other user. Section 1 describes messages.

CONFERENCE COMMENTS are of a more formal nature than "messages" and cannot be discarded. A CONFERENCE consists of comments contributed by participants on a topic of common interest. The comments are automatically made available to each member of the conference, and are designed to be of a more formal nature than "messages". The computer maintains a record of who is participating in the discussion and who has seen which comment. The comments are stored and can be easily retrieved for perusal by other conference participants. Only the participants in a given conference can read the comments in that conference. Section 2 deals with conference comments.

Each conference is organized by a MODERATOR, the person who originally established the conference. Whereas any user can add a new user to *telectr*, only the moderator of a conference can add new participants to that conference. Section 3 discusses "extras" on *telectr*, such as adding new users and participants, checking when a user last logged in, and so forth.

Telectr provides users with a work area called SCRATCHPAD for composing and modifying text. Each user has one SCRATCHPAD. All composition of text, whether for a message or for a conference comment, is done in the user's one SCRATCHPAD. Figure 1 on the following page illustrates the steps involved in sending messages and conferences comments using the SCRATCHPAD.

SCRATCHPAD is equipped with the standard UNIX editor program, *ed*. *Ed* is the mechanism for adding or displaying text, deleting lines, and otherwise modifying the contents of SCRATCHPAD. The final section describes the basics of using *ed*.

A final note about the conventions used in this manual: **bold face type** indicates what the user types; normal type face indicates lines the computer prints. The symbol (R) stands for a carriage return, marked on some terminals as "return" and on others as "CR" or "newline".

¹UNIX is a trademark of Bell Laboratories.

Messages

##message (R)
(See description of the *message* command)

Conference Comments

##newcomment conf_name (R)
(See description of the *newcomment* command).

```
(You are in the editor. IASA users type "x" to use edx. Others
type "a" by itself, the text, and "." by itself to enter text.
ENTERING SCRATCHPAD
0
* a (R)
Telectr is easy to use. (R)
In fact, SCRATCHPAD is the (R)
only tricky part. (R)
. (R)
* w (R)
69
* q (R)
```

Keys (Word/Phrase/)? (R)

To? **pearson lathrop (R)**

To:
pearson
lathrop

OK to send (y/n)? **y (R)**

Message being sent

(Message are sent to specified users)

Msg 11.1 From: smith Sent: Sat Apr 11 ...

OK to delete SCRATCHPAD? (y/n)? **y (R)**

##

Associated IASA Comment (#)? **2 (R)**

Keys (Word/Phrase/) **test (R)**

Associated Comment: 2
Keys: test

OK to send (y/n)? **y (R)**

Comment being entered.

(Conference comments are automatically made available to other members of the conference.)

Entered as:
Conf: conf_name Comment: 1 Lines:4
Entered by: smith on: Sat Apr 11 11:17 CET...

OK to delete SCRATCHPAD? (y/n)? **y (R)**

##

Figure 1
Steps Involved in Sending Messages and Conference Comments

This manual explains how to use *telectr* by describing each command individually. At the beginning of each command description is a large box that displays a typical interaction on *telectr* using that command. The text in the large box is what appears on your terminal, and includes both the lines that the computer prints (normal type face) and the lines you type in response (**bold** type face). The numbers in the small boxes to the left of the text refer to subsequent comments describing what was typed and why.

1	Normal type face indicates what the computer prints.
2	You type things in bold letters. (R)

1 If you are confused about something in the boxed display, refer to the numbered comments below, such as this one, for an explanation.

2 Don't forget to type a carriage return, indicated here by **(R)**, after each line you enter.

Example

Example

To connect to IIASA's computer using Tymnet, first switch on your terminal and make sure the terminal and coupler are in REMOTE position (this may also be called "ON-LINE" or something similar; just make sure the terminal is not in the "local" setting). The terminal should also be switched to "full duplex" mode. Next dial your local Tymnet telephone number. This number depends on the baud rate and type of terminal you are using; consult the list of node numbers in the Tymnet documentation you received for the most appropriate number. Once you hear a high-pitched tone, place the telephone receiver firmly into the acoustic coupler. The first thing to appear should be a request for your terminal identifier.

1	please type your terminal identifier a
2	please log in: ii1wui1234etc password: whatever
3	HOST IS ON-LINE login:

- 1 The character you type as a terminal identifier depends on the type of terminal you are using. It is most likely an "a" or an "e". Consult your Tymnet documentation for the list of terminals and terminal identifiers.
- 2 Type your Tymnet account number for accessing IIASA and a password if you have one.
- 3 If your connection is good, you will receive a message telling you "host is on-line", followed by the "login" prompt of the IIASA computer. At this point you are logged on to the IIASA system and are ready to begin your session on *telectr*.

```

1 login: telectr (R)
2 Welcome
  Name? smith (R)

3 smith on at: Thu Apr 16 10:55:30 CET 1981
  Last logged in: Thu Apr 16 08:30:08 CET 1981
  Conf: iiasabook 3 comments. smith has 1 outstanding
  Conf: newplan 16 comments. smith up to date

4 To see new items type "seecomments <conference-name>"
  To enter new item type "newcomment <conference-name>"
  To send a message to telectr user(s) type "message"
  To read message(s) from telectr user(s) type "readmessage"
  To modify existing item type "modify
    <conference-name> <comment-number>"
  To have an overview of all your conferences type "overview"
  To see status of conf. participants type "status <conference-name>"
  To see an expanded version of this list type "help"
  To reread a comment use "listcomment
    <conference-name> <comment-number>"
  To see when a user last logged on type "lastlogin <user-name>"
  To quit type "--" "q" or "bye"

5 ##

```

1 Once you receive the "login" prompt of the IIASA computer, type "telectr" to log in to the system. If you make a typing mistake when entering "telectr" or any other command, you can fix the error by using the "delete" key (also called "rubout" on some terminals) before beginning the next line.

If there is a "message of the day" from Computer Services, it will appear after you type "telectr".

2

Telectr welcomes you on line and asks, "Name?". In response, type your *telectr* user name.

3

After printing login information, *telectr* lists the conferences in which you are a member and whether or not there are conference comments waiting for you to read. "Conferences" and "conference comments" are discussed later in this manual.

4

Following this, *telectr* prints a list of frequently used commands. You can see an expanded version of this list by typing "help". (We recommend "help" as one of the first commands you type during your first *telectr* session.)

5

The characters "##" are the *telectr* prompt. This prompt means that you can type a command to tell *telectr* what to do next. If you make a typing mistake or type something that *telectr* does not understand, *telectr* will respond, "Command not found" or "ambiguous" and print the "##" prompt again. Typing a carriage return simply causes the prompt to reappear.

For more experienced users, *telectr* permits "type-ahead". That is, you can type several commands in advance, without waiting for the computer to finish the command it is working on. *Telectr* will remember the commands you typed and respond to them in the correct sequence. We recommend that beginners not type ahead, but enter new commands only when *telectr* has completed its current command and responded with a "##" prompt.

```
1 ## h (R)
2 ## l (R)
  l: is ambiguous
  ## la (R)
```

- 1 The rest of this manual discusses the commands you can type in response to a "##" prompt. Because some command names are long and inconvenient to type, *telectr* allows you to abbreviate by typing any portion of a command name that is not ambiguous. For example, typing "h" or "he" has the same effect as typing "help".
- 2 If an abbreviated command is too short so that *telectr* cannot determine which command you want, it reports that the command name is ambiguous. "l", for example, can stand for either *listcomment*, *lastlogin*, or *load*. To get the command you want, simply type a longer portion of the desired command name - "la", for example, for "lastlogin".

1

help (R)

To see new items type "seecomments <conference-name>"
 (Depress "newline" or "carriage return" key to see next
 comment or next page of a large comment. ## indicates
 that you are up to date.)
 To enter new item type "newcomment <conference-name>"
 To modify existing item type "modify
 <conference-name> <comment-number>"
 For an overview of all your conferences type "overview"
 For an overview of all conferences with outstanding items
 type "out_overview"
 To see status of conf. participants type "status <conference-name>"
 To send a message to telectr user(s) type "message"
 To read message(s) from telectr user(s) type "readmessage"
 To check for receipt of a message type "pending <user-name>"
 To search a conference for specified word(s) type:
 "search <conference-name>"
 To set terse mode type "terse". To set verbose mode type "noterse"
 To reread a comment use
 "listcomment <conference-name> <comment-number>"
 To see when a user last logged in type "lastlogin <user-name>"
 To make a new telectr user type:
 "makeuser <user-name> <Full> <Name>"
 (an example would be: makeuser smith Albert C. Smith)
 To make a new telectr conference type:
 "makeconf <conference-name>"
 To add a new participant to a conference type:
 "makepart <conference-name> <user-name>"
 To quit telectr type "--" "q" or "bye"
 To delete a comment from yourname_msg type
 "deletemsg <comment-number>"
 To set (or reset) a telectr password for yourself type "password"

1

The *help* command prints a list of basic *telectr* commands. Any time you need a review of available commands, type "help" in response to the "##" prompt.

Note that the angle brackets ("*<*" "*>*") separate arguments (the words that follow a command) from command names. They are used here only for clarification; don't actually type them in the command. For

example, the command to see an outstanding comment in a conference called "iiasabook" is:

```
## seecomment iiasabook (R)
```

and not

```
## seecomment <iiasabook> (R)
```

```
1 ## bye (R)
2 login:
```

- 1 You can terminate your session on *telectr* any time you receive a "##" prompt. There are three different commands to choose from when you want to log off the system: "bye", "quit", or "--".
- 2 The computer responds with a "login" sign. At this point you can disconnect from Tymnet.

MESSAGES

"Messages" in *telectr* are designed for informal communication with other users. They are temporary in nature and may be discarded if the recipient desires. Sending a message is the most direct way for *telectr* users to interact with each other.

1	## message (R)
2	(You are in the editor. IIASA users type "x" to use edx. Others type "a" by itself, the text, and "." by itself to enter text.) ENTERING SCRATCHPAD 0
3	* a (R) Hello. I have successfully logged in (R) to telectr! Please send me a message (R) when you log in. (R)
4	.(R)
5	* w (R) 91
6	* q (R)
7	Keys (Word/Phrase/)? (R)
8	To: pearson lathrop (R) To: pearson lathrop
9	OK to send? y (R) Message being sent. Msg 818.19 From: smith Sent: Thu Apr 16 11:04:46 CET 1981 Lines:3
10	OK to delete SCRATCHPAD? (y/n)? y (R) ##

1 To begin sending a message, type "message", or any unambiguous abbreviation of it.

2

SCRATCHPAD is a work area for composing and modifying text. Each user has his or her own SCRATCHPAD and uses it to compose text for both messages and conference comments. The text in SCRATCHPAD may be altered by using the standard UNIX editor program, *ed*. *Ed* basics are explained in the final section of this manual. (For a complete description on the editing program *telectr* uses, see *A Tutorial Introduction to the UNIX Editor*.)

0 is the number of characters in SCRATCHPAD. It is possible to leave text in SCRATCHPAD between sessions; a number greater than 0 indicates that there is still text remaining in SCRATCHPAD. The asterisk ("*") is the editing program's prompt.

Telectr reminds IIASA users to type an "x" to enter *edx*, a screen editor. This editor is suitable only for people at IIASA using video terminals. If you are using *telectr* from outside IIASA, do *not* type an "x" at this point. Instead, type an "a" on a line by itself in response to the "*" prompt. The "a" means "append" and tells the computer you wish to begin entering text.

3

Enter the message on the lines following the "a". Use "rubout" ("delete" on some terminals) to correct typing mistakes on the current line of text (i.e., before you type a carriage return).

4

To terminate the message, type a dot (".") on a line by itself. This tells the computer that you are finished entering text. The editing program will respond with a "*" prompt.

5

In response to the editor prompt, type a "w" (meaning "write") to make a permanent copy of the message on the computer. This is a very important step. You run the risk of losing any unwritten text if the computer should suddenly go down. Once you have successfully "written" text, the editing program responds with a number indicating how many characters the SCRATCHPAD contains.

"Appended" text is added to the bottom of any text you have already entered. It is a good idea to "write" large messages frequently by repeating the "a" (append) and "w" (write) commands: type an "a" on a line by itself, enter the text on the following lines, end the text with a "." on a line by itself, type "w" to write; then repeat the process by again typing an "a" on a line by itself, etc.

6

When you have completed the message and "written" it, quit the editing program by typing "q" (meaning quit).

7

Telectr gives you the opportunity to enter a one line "key" summarizing the contents of the message. This key can be helpful if you later wish to locate a specific message using the *search* command. If you want to leave the key blank, press a carriage return.

Telectr also gives you the opportunity to terminate the *message* command at this point, leaving the contents of the unsent message in the SCRATCHPAD. If you wish to terminate, type "--" in response to the "Key?" prompt.

8

Next, enter the user names of the intended recipients on one line. Separate each name from the next by a space. It is possible to send a message to any *telectr* user. If you want to keep your own copy of the message, send a copy to yourself. (This means you will have a message waiting to read as soon as the message is sent).

9

Telectr next asks for final confirmation before sending the message. This is the last point at which you can reconsider whether or not the message should be sent. Typing "y" sends the message; typing "n" terminates the process but leaves the contents of the unsent message in SCRATCHPAD.

Once you send the message, *telectr* reports that it is being sent and assigns a unique number to the message.

10

The normal procedure is to delete the SCRATCHPAD after sending the message. This leaves a clean work area for composing the next message or conference comment you send.

If you do not delete the contents, a number other than 0 will appear the next time you enter SCRATCHPAD. This means SCRATCHPAD still contains text.

```

1  You have a message waiting. Type "readmessage" to see it.
2  readmessage (R)
3  Msg 81.19 From: lathrop Sent: Fri Apr 17 12:14:21 CET 1981. Lines:2
   To: smith
   Welcome to telectr! Feel free to
   send me a message if you have problems.
4  Save (y/n)? y (R)
5  Annotation (Word/Phrase/)? (R)
6  Making conf smith_msg
   Message being saved as comment 1 in smith_msg.
   ##

```

1 *Telectr* automatically informs you of awaiting messages with a short notice. You will most likely receive this notice when you first log in, although *telectr* also informs you of messages that arrive during your current session.

2 To read pending messages, type "readmessage" (or an unambiguous portion of it such as "r" or "re", etc.).

3 *Telectr* first prints out basic information about the message: the message number, the sender and recipient(s), and the time and date the message was sent. The text of the message appears after this, exactly as the sender typed it.

4 Next *telectr* asks if you want to save the message. If you decide not to save it, type "n" in response to the "Save?" prompt. The message will be discarded.

If you want to keep the message, type "y".

5

If you agree to save the message, *telectr* will ask for an "Annotation" – a word or one line phrase summarizing the contents of the message. This annotation can be used in connection with the *search* command to locate a specific message. The annotation information will be entered at the beginning of the message when it is saved, along with the date and time of receipt.

If you do not want to enter an annotation, type a carriage return.

6

When you decide to save a message, the message (or messages, if more than one arrived at once) is entered as one comment in a conference called "yourname_msg", where "yourname" stands for your *telectr* login name. If no conference called "yourname_msg" exists (if you have never before saved a message) *telectr* creates the conference for you automatically. *Telectr* also indicates the comment number of the saved message.

"Yourname_msg" is a conference like any other. (See the following section for more detail on "conferences" and "conference comments"). This means that the *telectr* commands designed for conference comments, such as *listcomment*, *search*, *load*, *modify*, and even *makepart* are appropriate for this special conference where your messages are saved.

```
1 ## pending lathrop pearson (R)
2 Msg 81.35 From: smith Sent: Wed May 5 17:11:27 CET 1981. Lines:1
  ...not yet received by lathrop.
  There are no messages for pearson from smith not yet received.
  ##
```

1 *Telectr* does not automatically inform users whether or not messages have been received. If you want to find out if someone has received a message, use the *pending* command.

Type "pending", followed by the user name of the intended recipient, to find out the status of the message. If you specify more than one recipient name, be sure to separate each name by a space.

2 If the recipient has not yet received the message, *telectr* prints out the heading of the message and notes that the recipient has a message outstanding. Otherwise, *telectr* informs you that the specified recipient has indeed seen the message you sent by printing a line of the kind:

There are no messages for pearson from smith not yet received.

```
1 ## list smith_msg 1 (R)
2 Msg 81.19 From: lathrop Sent: Fri Apr 17 12:14:21 CET 1981. Lines:2
  To: smith

  Welcome to telectr! Feel free to
  send me a message if you have problems.
```

1 The *listcomment* command can be used to reread the messages you have saved in the "yourname_msg" conference. (*Listcomment* is also appropriate for reviewing comments in any conference, as discussed later in this manual).

To reread a saved message, type "listcomment" or an unambiguous abbreviation of it such as "li" or "list", followed by "yourname_msg" and the desired comment number. ("yourname" stands for your *telectr* login name.) Recall that a comment in "yourname_msg" may contain more than one message. You can use the *search* command to determine in which comment a message is stored.

2 *Listcomment* prints out the requested item.

```
1 ## deletemsg 1 (R)
2 OK to delete comment 1 in smith_msg? (y/n)? y (R)
  ##
```

1 Because messages on *telectr* are typically informal and temporary in nature, it is useful to be able to discard outdated messages saved in your "yourname_msg" conference.

To delete an old message that has been stored in "yourname_msg" as a comment, type "deletemsg" followed by the number of the comment in "yourname_msg" you want to discard.

2 *Telectr* asks for final confirmation before deleting the comment. If you type "y" and agree to delete, the text of the entire comment is discarded. It is replaced by a short notice indicating the date and time of deletion.

If you type "n", the text remains unchanged.

CONFERENCE COMMENTS

"Conferences" in *telectr* consist of comments contributed by participants on a topic of common interest. Conference comments are automatically made available to each member of the conference, and are designed to be of a more permanent nature than "messages". The computer maintains a record of who is participating in the discussion and who has seen which comment.

```
1 ## out (R)
2 Conf: iiasabook 3 comments. smith has 1 outstanding
  ##
```

1 There are several ways to check if you have conference comments waiting to be read. Unless you are in "terse" mode (see the description of the *terse* command, *telectr* reports on the status of all your conferences when you first log in. The *out_overview* command is also available. It reports only on conferences in which you have outstanding comments and allows you to check on pending conference comments at any time during your session on *telectr*.

To use this command, type "out_overview", or an unambiguous abbreviation of it.

2 *Telectr* responds by listing all your conferences in which there are outstanding comments, and the number of pending items for each conference.

If you receive a "##" prompt instead of a conference list, you are up to date in all your conferences and have no comments waiting.

1	## overview (R)
2	Conf: iiasabook 3 comments. smith has 1 outstanding Conf: newplan 16 comments. smith up to date

1 The *out_overview* command discussed on the previous page reports on those conferences in which you have unread comments. If you want a rundown of all your conferences, use the *overview* command. *Overview* reports on your status in each conference and produces a list similar to the one you receive when you first log in. (*Overview* is a useful command if you are in *terse* mode and do not receive this initial list automatically.)

To get an overview of all your conferences, type "overview" (or an unambiguous abbreviation of it).

2 *Telectr* lists all the conferences in which you are a member, the number of comments in each conference, and whether there are conference comments waiting to be read.

1	## see iiasabook (R)
2	Seecomments: Depress carriage return to see next item. Terminate with "--". Next is comment 3 of 3 in conference "iiasabook" (R)
3	Conf: iiasabook Comment: 3 Lines: 2 Entered by: austin on: Wed Apr 15 14:42:27 CET 1981 Associated IIASA Comment: 2 Keys: Chap 2 ready The draft of chapter two is finished. I tried to incorporate Thompson and Mulgrave's work; perhaps you have suggestions on how to integrate this with the remaining chapters. ##

- 1 The command to read outstanding conference comments is "seecomments". To see pending comments, type "seecomments", or an abbreviation of it, followed by the name of the conference.
- 2 *Telectr* responds with a brief instruction and a reminder telling you which comment is to appear next. To read the next comment, press a carriage return. If you decide not to read the next item, type "--". (This feature is useful if you have several outstanding comments and do not want to review all of them at one time.)
- 3 After you type a carriage return, *telectr* displays the conference comment. It first prints out basic information about the comment: the comment number and length of the comment, the author, and the time entered. The text of the comment follows next, exactly as the author typed it.

- 1 ## newcomment iiasabook (R)
- 2 (You are in the editor. IIASA users type "x" to use edx. Others type "a" by itself, the text, and "." by itself to enter text.)
ENTERING SCRATCHPAD
0
- 3 * a (R)
I have finally finished the draft of chapter three (R)
and look forward to comments on it. Chapter two (R)
still needs to be strengthened, Bob. Perhaps you should (R)
cite Osgood's latest research on conflicting objectives. (R)
- 4 . (R)
- 5 * w (R)
214
- 6 * q (R)
- 7 Associated IIASA Comment (#)? 2 (R)
- 8 Keys (Word/Phrase/)? draft finished (R)
Associated Comment: 2
Keys: draft finished
- 9 OK to enter (y/n)? y (R)
Comment being entered.
Entered as:
Conf: iiasabook Comment: 4 Lines: 4
Entered by: smith on: Thu Apr 16 11:45:46 CET 1981
- 10 OK to delete SCRATCHPAD? (y/n)? y (R)
##

- 1 The command for entering a new comment in a conference is *newcomment*. Type "newcomment" (or an abbreviation), followed by the name of the conference, to begin entering a comment.
- 2 SCRATCHPAD is a work area for composing and modifying text. Each user has his or her own SCRATCHPAD and uses it to compose all text for both messages and conference comments. The text in SCRATCHPAD may be altered by using the standard UNIX editing program, *ed*. *Ed* basics are explained in the final section of this manual. (For a complete description of this editing program, see *A Tutorial Introduction to the UNIX Editor*.)

0 is the number of characters in SCRATCHPAD. It is possible to leave text in the SCRATCHPAD between sessions; a number greater than 0 indicates SCRATCHPAD contains text left behind from a preceding session. The asterisk ("*") is the editor's program's prompt.

Telectr reminds IIASA users to type an "x" to enter *edx*, a screen editor. This editor is suitable only for people at IIASA using video terminals. If you are using *telectr* from outside IIASA, do *not* type an "x" at this point. Instead, type an "a" on a line by itself in response to the "*" prompt. The "a" means append and tells the computer you wish to begin entering text.
- 3 Enter the comment on the lines following the "a". Use "rubout" ("delete" on some terminals) to correct typing mistakes.
- 4 To terminate the comment, type a dot (".") on a line by itself. This tells the computer that you are finished entering text. The editor program will respond with a "*" prompt.
- 5 In response to the editor prompt, type a "w" (meaning "write") to make a permanent copy of the comment on the computer. Once you have successfully "written" text, the editing program responds with a number indicating how many characters the SCRATCHPAD contains.

It is a good idea to use the "w" command frequently when entering large comments. Because unwritten text can be lost if the computer should go down, frequent use of the "w" command will prevent you from losing all of a large comment in the event the computer crashes or you lose your terminal connection. Alternate the "a" (append) and "w" (write) commands: type an "a" on a line by itself, enter, say, 15 or 20 lines of text, end the text with a "." on a line by itself, type "w" to write; then repeat the process by again typing an "a" on a line by itself, and so forth. Text added after the second "a" will be appended after the last line of text already in SCRATCHPAD.
- 6 When you have completed the comment and written it, quit the editing program by typing "q" (meaning quit) and a carriage return. At this point you also leave SCRATCHPAD.

7

Once you type a "q" and a carriage return, *telectr* asks if you wish to specify an "Associated Comment". If your comment refers back to a previous comment in the conference, it may be helpful to enter that comment number. If you want to leave the "Associated Comment" blank, type a carriage return.

Telectr also gives you the opportunity to terminate the *newcomment* command at this point, leaving the text you have written still in the SCRATCHPAD. If you wish to terminate, type "--" in response to the "Associated Comment?" prompt.

8

Telectr gives you the opportunity to enter a one-line "key" summarizing the contents of the message. This key can be helpful if you later wish to locate a specific message using the *search* command. If you want to leave the key blank, press a carriage return. As with the "Associated Comment" question, you can terminate *newcomment* at this point by typing "--" in response to the "Key" prompt.

After you have responded to the "Key?" prompt, *telectr* prints out the Associated Comment and Key you entered.

9

Telectr next asks for final confirmation before entering the conference comment. This is the last point at which you can reconsider sending the comment. Typing "y" enters the comment; typing "n" terminates the process but leaves the contents of the message in SCRATCHPAD.

Telectr reports that your comment is being entered. It also prints the information contained in the heading of the comment.

10

The normal procedure is to delete the SCRATCHPAD after entering the comment. This leaves a clean work area for composing the next message or conference comment.

If you do not delete the contents, a number other 0 will appear the next time you enter SCRATCHPAD. This means your SCRATCHPAD still contains text.

```
1  ##status iiasabook (R)
2  CONFERENCE: iiasabook
   UP TO 3 (1 unread) austin
   UP TO DATE      smith
   UP TO 2 (2 unread) winters

   4 ITEMS
   ##
```

1

Use the *status* command to find out if the other participants in a conference have read all available comments.

To check on the status of a conference, type "status", followed by the conference name.

2

Telectr reponds with a brief report on each participant in the conference. A participant who is "up to date" has used *seecomments* to read all available comments. If a participant has outstanding comments, *telectr* notes how many he or she has yet to read.

1

list iiasabook 3 (R)

2

Conf: iiasabook Comment: 3 Lines: 2
 Entered by: austin on: Wed Apr 15 14:42:27 CET 1981
 Associated IIASA Comment: 2
 Keys: Chap 2 ready

The draft of chapter two is finished. I tried to incorporate Thompson and Mulgrave's work; perhaps you have suggestions on how to integrate this with the remaining chapters.

##

1

The *listcomment* command is used to reread existing conference comments. (Because saved messages are also contained in a conference, called "yourname_msg", this command is also used to reread messages. See the description of *readmessage* and *listcomment*).

To reread an existing comment, type "listcomment" (or an unambiguous abbreviation of it such as "li" or "list"), followed by the name of the conference and the desired comment number.

Do not use *listcomment* to display a comment for the first time. Use *seecomment* instead—*seecomment* registers that you have seen a comment, whereas *listcomment* does not. In this way, other conference participants using the *status* command will know that you have seen the comment.

2

Listcomment displays the requested item.

EXTRAS

The previous sections describe the basic commands necessary for sending and receiving messages or conference comments. Once you have become familiar with *telectr* basics, you may want to try out some of the "extra" features described in this section.

```

1  ## password (R)

2  Please type the password you wish to have: [bobsled (R)]

3  Please type again the password you wish to have: [bobsled (R)]
   New password set.
   ## bye (R)

4  login: telectr (R)
   Welcome
   Name?smith
   Password? [bobsled (R)]

   smith on at: Mon Aug 17 10:03:46 CET 1981
   Last logged in: Sun Aug 16 14:21:26 CET 1981
   ##

```

- 1 A password prevents someone else from logging in to *telectr* under your user name. Passwords on *telectr* are optional. If you wish to set a password, or change an existing one, type "password".
- 2 *Telectr* asks what you wish your new password to be. In response, type in the word you have chosen, followed by a carriage return. The characters you type will not actually appear on your terminal. The password given in this example, bobsled, is shown in square brackets ([]).
- 3 To confirm the new password, *telectr* asks you to retype it. Again, the characters will not be printed as you type.
- 4 The next time you log in, *telectr* will first ask for your user name and then for your password. Once again, the password will not appear on your terminal as you type. Once you have correctly entered your user name and password, your session on *telectr* will proceed as usual.

1	<pre>login: telectr (R) Welcome Name? smith (R) smith on at: Thu Apr 16 10:55:30 CET 1981 Last logged in: Thu Apr 16 08:30:08 CET 1981 Conf: iiasabook 3 comments. smith has 1 outstanding Conf: newplan 16 comments. smith up to date To see new items type "seecomments <conference-name>" To enter new item type "newcomment <conference-name>" To modify existing item type "modify <conference-name> <comment-number>" To have an overview of all your conferences type "overview" To see status of conf. participants type "status <conference-name>" To see an expanded version of this list type "help" To reread a comment use "listcomment <conference-name> <comment-number>" To see when a user last logged on type "lastlogin <user-name>" To quit type "--"</pre>
2	<pre>## terse (R) Terse mode set. To return to verbose mode type "noterse" ## bye (R)</pre>
3	<pre>login: telectr (R) Welcome Name? smith (R) smith on at: Thu Apr 16 12:58:37 CET 1981 Last logged in: Thu Apr 16 11:55:30 CET 1981 ##</pre>
4	<pre>## noterse (R)</pre>

- 1 Normally when you log in to *telectr*, you receive an overview of your conferences and a list of useful commands. After using *telectr* several times you may become familiar enough with how it functions that you don't need to review the command list or receive a conference overview each time you log in. Similarly, you may no longer need reminders on how to enter text in the SCRATCHPAD each time you compose a message or comment. The *terse* command permits you to shut off such extra information.

- 2 To set "terse" mode, type "terse" in response to the "##" prompt. "Terse" mode will be in affect the next time you log in.
- 3 When "terse" mode is set, *telectr* prints the time you log in, your last login time, and then prompts immediately with "##".
You can always use the *overview* and *help* commands to obtain the information omitted when "terse" mode is set.
- 4 If you change your mind, and again want *telectr* to print out a command list and conference overview each time you log in, type "noterse". "Noterse" will be in effect the next time you log in.

```
1  ## last winters (R)
2  Boris M. Winters
   last on telectr Sat Aug 15 10:04:06 CET 1981
   ##
```

- 1 It is often useful to check when another user last used *telectr*. To find out when someone last logged in, type "lastlogin" (or an unambiguous abbreviation of it—here "last") followed by the person's user name.
- 2 *Telectr* responds by printing the date and time the user was last on *telectr*.

```

1  ## search iiasabook (R)
2  Word(s) to search for? Key (R)
3  Matches found in the following comments:
   1:Key:Osgood's comments on Chap 1
   3:Key:Chap 2 ready
   4:Key:draft finished
   ##

```

1

The *search* command helps you locate a conference comment (or message saved in your "yourname_msg" conference) by searching for a specified word or words. This command comes in handy if you want to refer back to a certain comment, but cannot remember exactly which comment it was.

Type "search", followed by the name of the conference in question, to begin the search.

2

Telectr asks for a word or words to search for. It is best to keep the search words as specific as possible to avoid a lengthy list of matching words.

One possible search word in short conferences is "Key" or, in the "yourname_msg" conference, "Annotation". This will result in a list of any "Keys" or "Annotations" that summarize the contents of each item.

3

If the search is successful, and matching words are found, *telectr* prints the number of each comment that contains a match, followed by the line on which the match occurred. Once you identify the desired comment, you can use *listcomment* to reread it.

Incidentally, *telectr* protects you from the costly transmission charges that would result from an overly-successful search. If more than 24 matching lines are found, *telectr* first asks for confirmation before displaying the lines. If more than 100 matching lines are found, *telectr* asks you to try a more specific search word.

1	## modify iiasabook 4 (R)
2	SCRATCHPAD contains comment: 4 of conference: iiasabook (You are in the editor. IIASA users type "x" to use edx. Others type "a" by itself, the text, and "." by itself to enter text.) ENTERING SCRATCHPAD 214
3	* a (R) I also think we should include some of (R) Lockwood's findings on optimization. (R) . (R) * w (R) 290 * q (R)
4	Associated Comment (#)? 2 (R) Keys (Word/Phrase/)? Check Lockwood's work (R) Associated Comment: Keys: Check Lockwood's work
5	OK to enter (y/n)? y (R) Comment being entered. Entered as: conference: iiasabook comment: 4 lines: 6 modified by: lathrop on: Wed Apr 22 13:48:51 CET 1981
6	OK to delete SCRATCHPAD? (y/n)? y (R)

- 1 The *modify* command is designed for making changes to a conference comment after the comment has been entered in a conference. Only the author of the comment is allowed to modify it.
- To modify an existing conference comment, type "modify", followed by the conference name and comment number.

2

Telectr loads the requested comment into the SCRATCHPAD and prints out the number of characters the comment contains. Note that the comment is loaded into SCRATCHPAD exactly as it appears in the conference, complete with the initial information printed at the top (the date and time the comment was sent, etc).

3

Once you receive a "*" prompt, you are ready to modify the comment. The final section of this manual describes *ed* basics on how to make major modifications, such as deleting or inserting text. To append text to the bottom of the comment, as in the example, use the "a" (append) command: type an "a" on a line by itself to signal the beginning of text, enter the text on the lines following the "a", and end the text with a "." on a line by itself. (See a description of *newcomment* for a full explanation of the append command).

Be sure to follow the normal procedure for writing the text ("w") and quitting ("q") the SCRATCHPAD (also in the *newcomment* description).

4

Once you type a "q" and a carriage return, *telectr* asks if you wish to specify an "Associated Comment" and a "Key". An "associated comment" refers to a previous comment in the conference; a "key" is a one-line summary of the comment (a useful "key" for a modified comment is the reason for its modification).

If you wish to leave either the "Associated Comment" or "Key" blank, press a carriage return in response to the prompt. If you want to terminate the *modify* command at this point, leaving the contents of the comment in the SCRATCHPAD, type "--" in response to either the "Associated Comment" or "Key" prompt.

5

Telectr next asks for final confirmation before reentering the modified comment into the conference it came from. This is the last point at which you can reconsider entering the comment. Typing "y" replaces the existing comment with the modified version; typing "n" leaves the existing comment intact and leaves the modified text in the SCRATCHPAD.

If you agree to enter the comment, *telectr* replaces the existing comment with the new, modified version. Participants in the conference who had already seen the old version will receive the modified version to read. Participants who did not read the old version will receive only the modified version to read.

Once you agree to enter the modified comment, *telectr* reports that it is being entered. It also prints out the information contained in the heading of the comment, such as the date and time modified.

6

The normal procedure is to delete the SCRATCHPAD after modifying a comment. This leaves a clean work area for composing the next message or comment you send.

If you do not delete the contents, the comment remains in the SCRATCHPAD. A number other than 0 will appear the next time you enter SCRATCHPAD, meaning that SCRATCHPAD still contains text.

```
1  ## makeuser j_doe J.R. Doe (R)
2  doe is now a telectr user (established by smith.)
   ##
```

1

Any *telectr* user can add another user to the system. To create a new user, type "makeuser", followed by an appropriate user name, and the full name of the new user. An "appropriate user name" is usually the new user's last name, or a portion of it, written in lowercase letters. The name can be no longer than eight characters, and must be unique. If the name already exists, *telectr* asks you to enter a new one. Dots (".") and underscore characters ("_") are acceptable in user names.

2

Telectr creates a new user and stores the user's full name (J.R. Doe in the example) for reference, for example, by the *lastlogin* command.

```
1  ## makeconf new_book (R)
2  A conference "new_book"
   has been created with smith as
   its moderator.
   ##
```

1

The *makeconf* command enables you to create a new conference on *telectr*.

To make a new conference, type "makeconf" followed by the name of the new conference, typed in lowercase letters. Conference names can be no longer than twelve characters and must be unique. If a conference already exists with the name you have chosen, *telectr* asks you to enter a new one. Dots (".") and underscore characters ("_") are acceptable in conference names.

2

Telectr creates a new conference with the specified name and automatically makes you a member of the conference. You also become the *moderator* of the conference. As moderator, you are the only person who can add new participants to the conference.

1 `## makepart new_book doe (R)`

2 There are no comments in new_book.
doe is now a participant in new_book.
##

1

The *makepart* command allows the moderator of a conference to add new members to the conference.

To add a new participant to a conference, type "makepart", followed by the name of the conference and the user name of the new participant. Be sure the conference and the specified user already exist.

2

Telectr adds the user to the conference.

1

`## moderator new_book (R)`

2

`smith is the moderator of the conference "new_book"`

1

Suppose you know of an interesting conference on *telectr* and want to become a participant. Because the moderator of a conference is the only person who can add new members, you need to know who the conference moderator is. You can then send him or her a message asking to become a new member.

To find out who moderates a conference, type "moderator", followed by the conference name.

2

Telectr responds with the user name of the conference moderator.

```
1 ## removepart new_book doe (R)
2 OK to remove doe from conference: new_book? (y/n)? y (R)
  ##
```

1 The *removepart* command allows the moderator of a conference to remove participants from the conference. Note that *removepart* only removes the participant from the specified conference, and does not remove him as a user on *telectr*.

To remove a conference participant, type "removepart", followed by the name of the conference and the user name of the participant to be removed.

2 *Telectr* asks for final confirmation before proceeding. Typing "y" removes the participant from the conference; typing "n" terminates the process and leaves the conference participants unchanged.

```
1 ## removeconf new_book (R)
2 OK to destroy conference? (y/n)? y (R)
```

- 1 Because of space limitations on *telectr*, it is best to remove inactive conferences from the system. *Removeconf* allows the moderator of a conference to remove a conference that is no longer needed.
- To delete a conference that you moderate, type "removeconf" followed by the name of the conference to be deleted.
- 2 *Telectr* asks for final confirmation before removing the conference. Typing "y" removes the entire conference from *telectr*; typing "n" leaves the conference intact.

ED BASICS

SCRATCHPAD, the work area for composing the text for messages and conference comments, is equipped with a powerful text editor called *ed*. The most basic *ed* commands, "a" (meaning append) "w" (write) and "q" (quit), allow you to enter text into SCRATCHPAD and are discussed in the description of the *message* and *newcomment* commands. *Ed* is also useful for modifying or deleting text, fixing typing errors, and so forth. Although "a", "w" and "q" are perfectly adequate tools for composing and sending messages and conference comments in *telectr*, a few basics about *ed* will improve your use of the SCRATCHPAD.

All *ed* commands are given in response to the "*" prompt. If the prompt does not appear you are probably in "append mode". That is, you have probably typed an "a" on a line by itself, and everything following the "a" is being added to SCRATCHPAD as text. In this case, you must stop appending text by typing a dot (".") on a line by itself before proceeding with any commands. If you type something *ed* does not understand, it responds with a brief message beginning with a "?". Try retyping the command when this happens.

This discussion of *ed* covers only very basic commands. For a more detailed description, see Kernighan [1].

(You are in the editor. IIASA users type "x" to use ed. Others type "a" by itself, the text, and "." by itself to enter text.)

ENTERING SCRATCHPAD

0

* a (R)

Compose the text of messages and (R)
conference comments in the SCRATCHPAD. (R)

Use ed to correct (R)

mistakes. (R)

. (R)

1

* 1,\$p (R)

Compose the text of messages and
conference comments in the SCRATCHPAD.

Use ed to correct

mistakes.

2

* \$-1,\$p (R)

Use ed to correct
mistakes.

3

* \$p

mistakes.

4

* w (R)

101

* q (R)

1

A frequently used *ed* command is "p" (meaning print). The print command can be used to print out all the contents of SCRATCHPAD, or a section of it. "Print" is handy when, for example, you want to send a comment or message, find that your SCRATCHPAD is not empty, and need to know what text is contained there.

To use the print command, specify the first and last line of the text to be printed, separated by a comma, and followed by a "p". Each line in *ed* is associated with a number: 1 refers to the first line in SCRATCHPAD; a dollar sign ("\$\$") is the symbol for the last line. To print out the entire SCRATCHPAD, type:

1,\$p

in response to the "*" prompt. This means, "print all lines of text from line one the last line".

- 2 There are several ways to indicate line numbers in *ed*. One way is to refer to a line position relative to "\$". For example:
 \$-1,\$p
prints out only the last two line of SCRATCHPAD. This is useful if you only need a brief reminder of what SCRATCHPAD contains.
- 3 It is also possible to print out only one line by typing the desired line number, followed by a "p". So,
 \$p
prints only the last line.
- 4 Be sure to follow the normal procedure for writing the text ("w") and quitting ("q") the SCRATCHPAD.

(You are in the editor. IIASA users type "x" to use edx. Others type "a" by itself, the text, and "." by itself to enter text.)

ENTERING SCRATCHPAD

0

* a (R)

Compose the text of messages and (R)
conference comments in the SCRATCHPAD. (R)

Use ed to correct (R)

mistakes. (R)

.(R)

1

* 1,2d (R)

* 1,\$p (R)

Use ed to correct
mistakes.

2

* \$d (R)

3

* 1,\$p (R)

Use ed to correct

4

* a (R)

typing errors.

.(R)

* 1,\$p (R)

Use ed to correct

typing errors

* w (R)

35

* q (R)

The delete command "d" functions similarly to the print command, except that "d" removes the specified line or lines from the SCRATCHPAD instead of displaying them.

1

To delete a set of lines, indicate the first and last line of text to be deleted, separated by a comma, and followed by a "d". For example,

1,2d

removes the first two lines from the SCRATCHPAD.

1,\$d is an ed command that deletes the entire SCRATCHPAD. However, for obscure reasons, it is not possible to write ("w") an empty SCRATCHPAD. Just make sure there is at least one character in SCRATCHPAD before you do a "w".

- 2 It is also possible to delete just one line of text by typing the line number, followed immediately by a "d". So,
 \$d
deletes the last line of text.
- 3 After deleting text, it is a good idea to take a look at the last few lines of text with a "p" command as a reminder of what SCRATCHPAD contains.
- 4 Following this, you can continue adding text to SCRATCHPAD in the usual fashion.

(You are in the editor. IIASA users type "x" to use edx. Others type "a" by itself, the text, and "." by itself to enter text.)

ENTERING SCRATCHPAD

0

* a (R)

Compose the text of messages and (R)
conference comments in the SCRATCHPAD. (R)

Use ed to correct tuppung (R)

mistakes. (R)

.(R)

1

* /tuppung/ (R)

Use ed to correct tuppung

2

* s/tupp/typ/p (R)

Use ed to correct typing

3

* . (R)

Use ed to correct typing

4

* \$a (R)

Continue adding text with the (R)

append command. (R)

.(R)

* w (R)

154

* q (R)

Among the most useful features of *ed* are its "search" and "s" (meaning substitute) commands. These are the tools for locating and correcting typing mistakes.

1

The first step involved in fixing a typing mistake or otherwise altering text on a line is indicating to *ed* the line to be altered. Do this by searching for a certain string of characters (i.e., the typing mistake). To locate a string of characters, enclose the characters in slash marks ("/"). *Ed* will search through the text for the line containing the string and print out the line for confirmation.

2

The "s" (substitute) command replaces one set of characters (i.e., the mistake) with another. "s" takes the form:

```
s/bad text/good text/p
```

Ed replaces the characters enclosed in the first set of slashes with the characters contained in the second set of slashes. It is a good idea to follow the substitution strings with a "p", as in the example, so that *ed* will print out the corrected line. If the substitution did not work as expected, you can always try it again.

3

An important concept in *ed* is the notion of the "current line". The current line is called "." (pronounced "dot") and refers to the line most recently worked on. To find out which line is the current one, type "." in response to the "*" prompt. The computer answers by printing the "current" line of text. (Note that the "dot" that refers to the current line, and the "dot" that ends appended text are two different commands).

You can use "dot" any time you want to refer to the current line in a command. Thus,

```
1..d
```

deletes text beginning with the first line through the current line.

4

Unless you specify otherwise, *ed* automatically assumes that any command you type refers to "dot". In the example above, "dot" is not the last line of SCRATCHPAD. If you begin appending text by typing "a", *ed* assumes you want to add the text after "dot". This is useful if you want to insert lines in the middle of existing text.

Most text is added to the end of the SCRATCHPAD, though, and not inserted in the middle. To specify that you want the text to appear at the end of the SCRATCHPAD, type:

```
$a
```

("\$" is a symbol for the last line of text. See the print command "p" and the delete command "d").

REFERENCES

- [1] Brian W. Kernighan, *A Tutorial Introduction to the UNIX Text Editor*, Bell Laboratories internal memorandum.
- [2] Brian W. Kernighan, *Advanced Editing on UNIX*, Bell Laboratories internal memorandum.