AUSTRALIAN SECURITIES & INVESTMENTS COMMISSION

EDGE

DOCUMENT INTERCHANGE SYSTEM

INTERFACE SPECIFICATIONS

V 1.07

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The EDGE Document Interchange System Software was originally produced by the Australian Taxation Office as the Electronic Lodgment Service Document Interchange System (ELS/DIS). The version currently in use by ASIC is not identical to that currently in use by the ATO. Software suppliers producing software communicating with the ASIC EDGE DIS must conform to the specifications in this document.

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1. INTRODUCTION

1.1 Purpose

This document specifies requirements for software intending to communicate with the Australian Securities & Investments Commission (ASIC) Document Interchange System (DIS). To understand what this means, it is necessary to understand a little about ASIC's Electronic Document LodGEment (EDGE) system.

The EDGE system consists of:

♦   the DIS system, which acts as the communications front-end for the EDGE system, and communicates with Registered Agents ("agents") Corporate Registry systems;

♦   the EDGE MAILBOX (the "mailbox") which validates electronically lodged documents and maintains a database of all previous electronically lodged documents;

Agents Corporate Registry systems will typically consist of several components:

♦   a Corporate Registry system, which maintains company information for the companies for which the agent wishes to lodge company documents;

♦   a communications front-end, which manages dial-up communications sessions with the ASIC DIS;

♦   a message-encoding software layer, which transforms company document data into messages acceptable to the EDGE Mailbox.

This specification document describes how the DIS operates, and specifies what the agent's communications front-end must do to be able to correctly communicate with the DIS system.

Information on related documents is provided in the appendices. This includes:

♦   related EDGE specifications;

♦   technical references on communications and file transfer protocols.

Finally, sources of help are also described in the appendix titled "Where to Get Help".

1.2 Intended Audience

This specification is intended for use by producers ("software suppliers") of software packages intended to perform electronic lodgement of ASIC company documents. It may also be of interest to others.

The main users of the document are seen as:

♦   software supplier programmers, who will require a detailed understanding of the way the DIS operates, and detailed specification of the various communications protocols used;

♦   software supplier management, who may require an overview of the hardware and software requirements for an electronic lodgement package;

♦   ASIC programmers working on the development and maintenance of the DIS system;

♦   ASIC communications staff analysing problems encountered by software suppliers and agents attempting to carry out electronic lodgement.

1.3 EDGE Overview

This section is intended to provide an overview of what happens when an ASIC company document is lodged electronically, so that readers can better understand what the DIS does and how it relates to the whole.

Before an agent can lodge documents electronically, they must have the following:

♦   a modem capable of communicating with Telecom's X.25 packet switching network, Austpac;

♦   a computer (typically a Personal Computer (PC)) which is connected to the modem;

♦   a Corporate Registry or similar software package which has been registered with ASIC as a compliant package (i.e. the package complies with ASIC requirements for electronic lodgement). This means that the software will be able to communicate with the EDGE system.

♦   an EDGE user id which will be allocated when the agent's signed participation agreement is accepted by ASIC.

With these pre-requisistes met, the agent will be able to carry out lodgement. To do this, the following occurs:

♦   the agent uses the PC software and stored company details to generate an electronic ASIC company document to be lodged on behalf of a client company. This electronic form is stored internally pending tranmission to the ASIC;

♦   the agent uses the PC software to produce a printed copy (also known as "hardcopy") of the electronic document in "Preferred Paper Format";

♦   an officer (i.e. Director or Secretary) of the client company verifies that the details are correct and signs the document hardcopy;

♦   the agent then stores the signed hardcopy in their office, so that at any time in the future it can be produced as evidence that the document details were attested by a company officer;

♦   the agent is then free to transmit the electronic document, and so uses the PC systems to dial Austpac and establish a computer conversation with the EDGE DIS production system;

♦   the agent then uses the PC software to transmit a set of files to the DIS system. This set consists of a Transmission Identifier file (with a filename of TXID) followed by between 1 and 99 document files. Each document file contains the details for a single ASIC company document;

♦   the DIS produces a transmission confirmation message in a file, and the agent must use their PC software to request transfer of the file to the agents PC. This confirmation message verifies receipt of the documents;

♦   the DIS and related ASIC systems validate the documents and produce a validation report file and an invoice file, and the agent must then use their PC software to request transfer of these files to the agents PC.

        The validation report tells the agent if any documents were rejected due to errors in the document data, in which case the agent must correct their copy of the document and repeat the above process. The invoice file contains details of invoices raised for statutory lodgement fees and late lodgement fees.

This completes the lodgement process. Documents which pass all validation edits are then used to update the ASIC's ASCOT database. An electronic image of the document is then generated and stored in ASIC's DOCIMAGE document image database as a permanent record of the lodgement.

2. COMMUNICATIONS REQUIREMENTS

2.1 Overview

Pre-requisites for communications between agents and the DIS are:

♦   a computer with specific communications hardware;

♦   a modem, for dial-up Austpac access, or a leased line direct Austpac connection;

♦   communications software to run on their computer;

♦   an Austpac Network UserId (NUI). In other words, they must be registered users of Austpac;

♦   an EDGE DIS userid allocated by ASIC.

These requirements are discussed in more detail in the following sections. Note that an understanding of computer communications technology is assumed.

2.2 Hardware

Asynchronous communications port

Character mode connection to Austpac requires a computer with an asynchronous communications port. Character framing and speed for the asynchronous port should be set to:

7 data bits, space parity, 1 stop bit
—or—
8 data bits, no parity, 1 stop bit.

Attention: Space parity is often not supported by modern communications software. This makes 8 data bits, no parity, 1 stop bit (8N1) a popular setting. However, users who select this should be aware that while Austpac does support data transfers with 8N1, Austpact does not ensure that error messages are issued in a form readable with the 8N1 setting. This means that Austpac error messages will be garbled, but once a connection to the EDGE system has been established, Austpac will transfer data between the two ends without corruption. Most EDGE users use 8N1 without problems, and find that the loss of Austpac error messages causes no significant difficulty.

Modem

Modems must be capable of full-duplex, asynchronous, permanent carrier operation sending at one of the data rates supported by Austpac. At the time of writing, these were:

♦   CCITT V.21 - 300 bps;

♦   CCITT V.22 - 1200 bps;

♦   CCITT V.22bis -2400 bps.

♦   CCITT V.32 - 9600 bps.

Modems must be Hayes (AT command) compatible.

A V.32bis (9600bps) or better modem is recommended.

2.3 Connecting to DIS

Before developers and agents can participate in the DIS, they must be registered users of Austpac and DIS. All custom communications software must be tested, certified and registered with ASIC.

Connecting to Austpac

Access to a PAD (Packet Assembler/Disassembler) is available by registering with Austpac as a dial-up or dedicated (leased line) X.28 character mode user. Registered dial-up users are issued with a Network User Identifier (NUI) which allows access to DIS (and other services available through Austpac).

Attention: Documentation must be provided to agents about Austpac registration, Austpac procedures and the physical connections between computer, modem and the telephone network.

Agents must be able to connect to the Austpac Intelligent Network Server (AINS) and change the 'default' NUI assigned by Austpac when the agent is first registered.

Austpac is reached on one of three numbers, depending on the data rate:

•   131400 for 9600 bps. This is V.32 with MNP4 error correction;

♦   01924 for 2400 bps;

♦   01922 for 1200 bps;

♦   01921 for 300 bps.

DIS registration

Agents must be registered with ASIC as users of EDGE to obtain log-in user identification and passwords. See the appendix titled "Related Documents" for details of agent registration documentation.

Software tests

To obtain EDGE DIS registration, software developers must be registered with EDGE as participating developers (see the appendix titled "Software Supplier Registration").

For agents to be able to use the software to connect to the DIS, software must be tested in accordance with procedures specified by the ASIC. Tests of agent communications software require successful transmission of test data from a site nominated by the software supplier (for example, the software supplier's office or the office of a nominated agent) to a DIS test facility. For details, see the chapter below titled "Facilities for Software Producers".

2.4 Software requirements

As a minimum, general purpose ('shrink–wrap' or public domain) communications software providing VT100 emulation and Kermit or ZModem can be used to communicate with the DIS. Such software need not meet the communications setup requirements described in the chapter titled "Communications Setup Menus".

Communication modes

VT100 mode software emulates a DEC VT100 terminal. Services are accessed by selecting menu items provided by the DIS. To transfer documents to the DIS, the agent must have previously prepared the documents using software conforming to one of the specifications listed in the appendix titled "Related Documents.

VT100 services can be accessed by general purpose communication software that provide VT100 emulation, but developers can provide their own proprietary software to access VT100 services (called "custom VT100 software" in this specification) but such software must comply with the requirements specified in the chapter titled "Communications Setup Menus".

AUTELS mode (Automated Electronic Lodgement) software allows developers to provide a custom interface between the DIS and the agent — in effect, replacing the VT100 screens, menus and services with custom screens, menus, functions and operating features.

AUTELS mode software may also process DIS reports and provide additional capabilities such as unattended operation in the agent's office The DIS communicates with all AUTELS software in the same way;the DIS does not 'know' if agent software provides services additional to those provided in the VT100 mode.

The AUTELS mode uses a simple protocol to inform the agent's software of its position in the menus provided by the DIS, the menus being the same as provided by the VT100 services. This means that AUTELS and VT100 communications interact with the same DIS services, and differ in the interface and other facilities implemented by the agent software.

Attention:	ASIC strongly recommends that software providing custom screens and facilities employ the AUTELS protocols in all circumstances. ASIC reserves the right to change DIS screens and menus without notice. This would cause problems if the VT100 menus and screens were to be used as a substitute for AUTELS protocols.

Communications log file

An agent's system must keep a record of the last transmission. This record is called the "Communications log file", or just the "log file".

Only a single log file needs to be kept — the one log file can be overwritten during the next communications session.

Various sections of this specification indicate messages, actions, responses, etc which need to be logged. The following message types, actions and responses are typical of what should be recorded:

♦ current procedure messages (AUTELS and custom VT100 software only). These indicate the procedures performed by the agent's system; for example, "Connecting to Austpac" is the current procedure message indicating that the agent's system is attempting to connect to Austpac.

♦ actions - each procedure consists of one or more actions taken by the agent's system. An example of an action is one of the AT commands used to control the modem.

♦ responses - most actions require a response. The response indicates whether the action was successful or not.

♦ error messages - when a response indicates an error, an error message must be logged.

This specification indicates the minimum requirement for the communications log file. Additional information may be needed, especially when communications are unattended.

It is highly recommended that the communications log file incorporate a trace facility that writes the raw communications traffic to disk. This facility should be easily accessible to the agent.

Communications setup menus

Software supporting AUTELS and custom VT100 services must provide a series of menus or commands that allow the agent to display a number of communications parameters.

The communications setup menus are described in the chapter titled "Coomunications Setup Menus".

These menus should provide the agent with a number of sub-menus and functions.

VT100 terminal emulation

Software for communicating with the DIS can consist merely of a VT100 emulation and a means for using one of two file transfer protocols; Kermit and ZModem.

For VT100 services, all menus and screens sent by the DIS contain cursor addressing and control codes specified in "VT100 Terminal Specifications", Digital Equipment Corporation.

Mandatory emulation parameters are:

Full Duplex
Carriage return = Carriage return
Backspace = Backspace + Delete
No line wrap
Scroll = on
80 column x 24 line screen
Flow control = Xon/Xoff

Transferring files

Two public domain protocols have been selected for the DIS file transfer: Kermit and ZModem.

Because some versions of Kermit or ZModem have different limits on the number of files transmitted using the wildcard option, agent software must limit the number of files to be transmitted at one time. In any case, the DIS will not accept more than 99 documents in one Kermit or Zmodem transmission.

When an agent's software notifies DIS that it is ready to send or receive files, both parties start their file transfer protocols and transfer files. When the files have been sent, the transfer protocol is stopped and other DIS services can be selected.

There may be more than one Kermit or ZModem transmission during each connection. After stopping the file transfer protocol, agents must first receive any reports waiting to be sent by the DIS and then they can notify the DIS that they are ready to send more files.

For further information on Kermit and ZModem, see the appendices titled "Kermit" and "ZModem", and the appendix titled "Related Documents".

Document files

Document files and TXID files must be in the format detailed by the Electronic Document specifications listed in the appendix titled "Related Documents".

One TXID file must be present in every Kermit or ZModem transmission to the DIS.

From 1 to 99 document files can be transmitted in addition to one TXID file in a single Kermit or ZModem transmission.

The maximum file size that the DIS will accept is 100Kb.

Naming files sent by agents to the DIS

The filename of TXID files must be "TXID" and no suffix is allowed.

Within each transmission, a file name must be a unique identifier made up of no more than 16 characters. The first character must be an upper case alphabetic character. The rest of the file name may be any numeric or upper case alphabetic character, the full stop or the underscore character. All other characters are converted to underscores.

Only the following characters may be used in a valid file name:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 _ .

File names may conform to MS DOS file name conventions, including the use of 'dot' extensions. All ASIC reports to agents will refer to the full file name, including any extensions.

Invalid file names may cause the file transfer process to abort with an error, or the file name may be changed or the file deleted.

File names of the form:

Filename	Usage
BULL_aa.nnn	system bulletin
FIN*.* (i.e. FINaaaaa.aaa)	financial messages
MAIL*.* (i.e. MAILaaaa.aaa)	mail messages
OUT*.* (i.e. OUTaaaaa.aaa)	outbound data
TRANS_aa.nnn	transmission reports
VALID_aa.nnn	validation reports

are reserved by the DIS for files sent to agents. Files of similar names received from agents will be accepted, but note the following warning.

Attention: It is up to software suppliers to ensure that agents cannot have files overwritten as a result of name collision. This could be achieved by ensuring that incoming and outgoing files are stored in different directories.

The following are examples of valid names for files sent by agents to the DIS:

A12345	ABCDEFGH.123
A_TEST_CASE.TRUST	A.TEST.CASE.IND

Naming files sent to agents by the DIS

All files sent to agents by the DIS have a system identifier in the filename. This is a two character identifier as follows

DE	Development
T1	Communications test (random communications errors) transmission reports
T2	Software test transmission reports
TE	Test files other than Transmission reports
PR	Production (Primary mailbox)
SE	Production (Secondary mailbox)

The file names of Transmission and Validation Reports and original invoice files are

>   TRANS_ss.nnn
>   VALID_ss.nnn
> and. FINVO_ss.nnn

where ss is the system identifier and nnn is a transmission sequence number.

The file names of Amended Invoices are FINVA_ss.nnn

where ss is the system identifier and nnn is a sequence number.

The file names of System Bulletins are BULL_ss.nnn

where ss is the system identifier and nnn is a sequence number.

2.5 Security

DIS addresses

There is one production and two test DIS systems and each has a separate X.121 numeric address on the Austpac network, with a corresponding alphanumeirc symbolic address. A second production system is scheduled to be added on 6th November, 1995 . Testing faciltiies are described below in the chapter titled "Facilities for Software Producers".

Software producers may also code the addresses into their packages according to the connection rules set out in the section titled "Service Continuity". Agent software must be able to store and set the addresses of four DIS systems, to allow for future expansion. Agents must be able to change these addresses.

Attention:	Software producers must not code numeric X.121 addresses in packages. Numeric address use is not supported. For this reason, numeric addresses are no longer published. While a user will be able to connect if they know the correct numeric address, the numeric address may change without notice. The symbolic addresses are guaranteed to remain stable.

ID	Purpose	Implemented	Symbolic
T1	Test comms - simulates line errors	1993	.EDGETST1
T2	Software testing	1993	.EDGETST2
PR	Primary production lodgement	1993	.EDGEPRIM
SE	Secondary production lodgement	06/11/1995	.EDGESECD

.EDGEPRIM should be set as the default selection in user's packages.

Registered software developers will be advised by mail of the processes involved in the commissioning of the second DIS, currently sheduled for 6th November, 1995.

Note that the symbolic address .EDGEPROD will remain in use until some time after the second DIS is commissioned. Software developers are advised not to use this symbolic address. While it is supported, .EDGEPROD will access the same machine as .EDGEPRIM. Registered software developers will be consulted before support for .EDGEPROD ceases.

DIS user ID

A DIS user id is stored in the DIS system. Agents must send a correct id to the DIS before access to the DIS is allowed.

Ids may have as many as eight characters.

An agent cannot change the id stored by the DIS; it is issued and controlled by ASIC.

If ids are stored in agents' own computers, agents must be able to change them. In fact, the initial user id must be changed to match the id first assigned by ASIC.

DIS password

A DIS password must be at least 6 characters long but not more than 16 characters, and must begin with an alphabetic character. The password is confined to the following characters:

Upper case A to Z (lower case will be forced to upper case by the DIS)
Numerals   0 to 9

Note that once used, a DIS password cannot ever be used again.

Agents (or their software) must change passwords every month. When agents change their passwords, they must change the password stored by the DIS.

The method for changing a DIS password is specified below in the section titled "DIS Services".

2.6 Service continuity

When an agent connects to the DIS, they will be using a specific Austpac address to connect to a system, not necessarily a specific machine. Any switching between machines which ASIC does will be completely transparent to the calling agents.

DIS system unavailability will be managed as follows: from November 1995 there will be two production EDGE systems, PR (.EDGEPRIM) and SE (.EDGESECD). If users for any reason have difficulty lodging on one system, they should attempt to lodge on the other. Users must be aware that they must collect outgoing report files (such as Validation reports, Invoices etc) for a given transmission from the same system that the transmission was lodged on.

Connection rules

Custom VT100 and AUTELS software should be able to identify three categories of problems:

♦ Problems connecting to Austpac

   ♦ failure to communicate with the local modem (bad cable, wrong configuration, or hardware failure)

   ♦ failure to obtain modem synchronisation (Austpac number busy, wrong configuration or hardware failure)

   This type of problem can be identified by failure to obtain the Austpac prompt or modem synchronisation.

♦ Problems obtaining an Austpac connection to the DIS

   This type of problem can be identified by a successful connection to Austpac but failure to connect to a DIS — perhaps due to overloading. The connection action to be taken by the agent's software depends on the Austpac clearing code (See the appendix titled "Error Messages"). For example, a clearing code of "CLR DER 000" indicates that the DIS is not available

Validation report reconciliation

It is the responsibility of the agent or the agent's software to reconcile validation reports with transmissions. Since the transmission reports have unique file names, and the DIS is identified in the file name, one method of reconciliation is to ensure that the Transmission Report is always received immediately after sending documents, and afterwards collecting the corresponding Validation Report from the DIS.

Invoice file reconciliation

It is the responsibility of the agent or the agent's software to reconcile original invoice files with transmissions. Conditions governing production of invoice files are detailed in the Document Messages Specification

Login sequence of events

After log-in, the System Bulletin is displayed:

```
18:07 pm                      30 September 1993                      Thursday
*******************************************************************************

                    AUSTRALIAN   SECURITIES   COMMISSION DEVT

                      EDGE DOCUMENT INTERCHANGE SYSTEM

         SYSTEM BULLETIN  created 8.27AM Thursday September 30, 1992

         The system has recently been upgraded to double the existing capacity.
         Users should experience improved response times compared to previous
         sessions.




                         Press RETURN key to continue
```

To continue the communication session, the agent presses the Return key and THE DIS displays the main menu:

```
 18:25 pm                       30 September 1993                      Thursday
 *******************************************************************************
                       AUSTRALIAN  SECURITIES  COMMISSION DEVT

                          EDGE DOCUMENT INTERCHANGE SYSTEM

                                    MAIN MENU
                        Please read the system bulletin

                          B    Receive the system bulletin



                          X    Exit
                      Please type your selection :



```

The agent can now choose to receive the System Bulletin as a file or log out. Any incorrect selection results in an error message:

```
Invalid selection - please re-type selection
```

If the agent types X, then the DIS ends this communication session, logs out and disconnects the Austpac connection to the DIS.

If the agent types B, then the DIS displays the 'Receive System Bulletin' screen to prompt the agent to start the file transfer process for receiving the system bulletin:

```
 18:25 pm                       30 September 1993                      Thursday
 *******************************************************************************
                      AUSTRALIAN  SECURITIES  COMMISSION DEVT

                         EDGE DOCUMENT INTERCHANGE SYSTEM

                            RECEIVE SYSTEM BULLETIN
              Start your KERMIT or ZMODEM program to receive reports

 -------------------------------------------------------------------------------
 **B00000000000000




```

Once the report has been received, the agent will be presented with a menu which provides only the "Exit" option:

```
18:25 pm                      30 September 1993                     Thursday
******************************************************************************
                   AUSTRALIAN  SECURITIES  COMMISSION DEVT


                   EDGE DOCUMENT INTERCHANGE SYSTEM


                             MAIN MENU

                   Please read the system bulletin






                      X    Exit

                Please type your selection :


```

At this point the agent must exit the DIS.

3. COMMUNICATIONS SETUP MENUS

3.1 Overview

All software specifically designed to access the DIS services must provide a series of menus or commands that allow the agent to display — and change if appropriate — a number of communications parameters. General purpose communications software need not comply with the requirements of this Chapter.

The top level menu (or command) must be called "DIS Communications Setup". This menu/command will lead to a number of sub-menus or sub-commands as follows:

Security Setup
Diagnostics
Terminal Setup
Modem Setup
Protocol Setup

The order of presentation of the sub-commands is not important, but the above names must be used. The means for presenting these commands is also optional — there is no restriction on interface design.

Each sub-command presents a screen that displays the communications parameters (and allows them to be changed if appropriate), and provides diagnostic functions as listed in the following sections.

A print screen command associated with the DIS communications setup functions must be available with each screen.

The names of the communications parameters must be listed as shown in the following sections. The listing order must be preserved also.

Attention: Software developers need not provide facilities for changing parameters if such changes would detract from system reliability. However, parameters must be displayed and must be a true indication of their value.

3.2 Setup menus

Security setup

Purpose

To display and change if appropriate, the current security parameters used by the agent to log-in to Austpac and the DIS.

Parameters

DIS user id	
DIS password	One set for each registered DIS user
DIS addresses	in an office.
Austpac NUI	

Requirements

♦ The DIS user ID — display and change the current copy of the DIS user id stored on the agent's system, and display the date and time it was changed

This copy of the DIS user id should be changed only after the agent is assigned a user id by ASIC, and should not otherwise be changed (unless ASIC changes the user id).

♦ the DIS password — change the current copy of the DIS password stored on the agent's system, and display the date and time it was changed. The password need not be shown if this compromises security

The agent's copy of the DIS password should be changed only after the agent has changed the master DIS password recorded by the DIS.

♦ DIS addresses — display and change the addresses of the DIS systems.

The symbolic address is alphanumeric and 16 or less characters long. It replaces the X.121 Austpac address used to connect to the DIS. Agent software should allow both symbolic and X.121 forms of address. See the appendix titled "Example of connection to DIS" for an example of a DIS connection.

If agent software provides an automatic redirection option, the agent must be able to deselect it.

♦ Austpac NUI — display and change the agent's Network User Identifier

There are two copies of the agent's NUI: the master copy stored by Austpac and the agent's copy. The agent is issued an NUI by Austpac. It can be changed by accessing the Austpac Intelligent Network Server (AINS).

Agents must be able to connect to AINS and change their NUI. The agent's copy should be changed only after the Austpac master copy of the NUI has been changed. See the appendix titled "Other Austpac Services" .

Diagnostics

Purpose

Provide diagnostic tools for identifying communication problems

Functions

View last communications log
Print last communications log
Turn line dump on/off

Requirements

♦ View last comms log — display the last communications log file on screen

♦ Print last comms log — print the last communications log file

♦ Turn line dump on/off — turns on (or off) the facility that writes raw communications traffic to the communications log file (recommended only; see the section titled "Communications Log Files")

Terminal setup

Purpose

Display and change if appropriate the current terminal settings

Parameters

Emulation
Duplex
Carriage return
Back space
Line wrap
Scroll
Screen size
Flow control

Requirements

♦ Emulation — to display terminal emulation name

♦ Duplex — display terminal duplex setting:

   ♦ HALF - terminal echos each character

   ♦ FULL - terminal does not echo each character

♦ Carriage return — display response to carriage return character sent by a remote device:

   ♦ CR - terminal does not add a line feed

   ♦ CR/LF - terminal adds a line feed after carriage return

- ♦ Back space — display response to backspace character sent by a remote device:

  - ♦ BS - cursor moves left one character space

  - ♦ BS & Del - delete the character to the left of the cursor

- ♦ Line wrap — display response to an incoming string of characters longer than 80 characters:

  - ♦ ON - characters after 80 appear on next line

  - ♦ OFF - characters after 80 overwrite last character on line

- ♦ Scroll — display response to new line sent by remote device when cursor is on last line of the screen:

  - ♦ ON - shifts on-screen data up one line space

- ♦ Screen size — display the number of columns and rows on the screen

- ♦ Flow control — display whether xon/xoff is enabled or disabled

See the section titled "VT100 Terminal Emulation" for recommended terminal settings.

Modem setup

Purpose

Display (and change if appropriate) the modem setup parameters

Parameters

Serial port
Speed
Data bits
Stop bits
Parity
Modem initialisation
Dialling command
Wait for connection
Connection indication
Austpac phone number

Requirements

- ♦ Serial port — identify/change the communications port connecting modem and computer

♦ Speed — display the data rate for communicating with remote device — 300, 1200 or 2400 bits per second

♦ Data bits — display number of data bits in each character — 7 or 8

♦ Stop bits — display number of stop bits that follow each character — 1 or 2

♦ Parity — display the method of error detection:

Odd
Mark
Space
Even
None

♦ Modem initialisation — display the modem initialisation string

♦ Dialling command — display the modem AT dialling command:

    ♦ ATDP   for decadic (pulse) dialling

    ♦ ATDT   for tone dialling

    ♦ Wait for connection — display the time (in seconds) to wait for the connection indication before re-try

♦ Connection indication — display the connection indication string used by the modem to indicate connection with another modem:

300bps	CONNECT
1200bps	CONNECT 1200
2400bps	CONNECT 2400
CD	Carrier detect line control signal

♦ Austpac phone number — to display the Austpac phone number the agent system is currently using:

01921	300 bps
01922	1200 bps
01924	2400 bps
nnnn	Austpac test services. Agents should be able to change this number (number to be specified by Austpac)

See the section titled "Hardware" for port settings.

Protocol setup

Purpose

Display the name of the file transfer protocol being used (Kermit or ZModem) and display (and change if appropriate) the file transfer parameters to be used by the agent system.

Parameters

Kermit parameters

Control quote character	ASCII 35
Maximum packet length	1000
File type	ASCII or TEXT
Block check type	3 byte
Window size	maximum allowed by your system

ZModem parameters

CRC	32 bits if available
Append to file	no
Delete file at end	no
Resume interrupted transfer	no
Send if newer/older	no
File type	ASCII or TEXT
Packet size	auto
Escape Control Character	no

4. COMMUNICATION WITH DIS

4.1 Overview

This chapter describes a typical communications session with the DIS.

During VT100 communication, the DIS provides services to agents by means of the VT100 screens and menus described in this chapter.

AUTELS mode communications proceeds in very much the same way, but agent software must provide the necessary screens and menus and communicate by means of the AUTELS mode procedures and protocols described in the chapter titled "Using the AUTELS Mode".

A communications session proceeds through the following eight steps:

♦   Connect to the local (agent's) modem

♦   Connect to Austpac

♦   Connect to the DIS

♦   Select operating mode: VT100 or AUTELS

♦   Log-in to DIS

♦   Display System Bulletin (VT100 only)

♦   View information screens (VT100) and exchange files

♦   Log out (exit DIS)

While connected to the DIS, an agent can access the following services:

♦   Receive the System Bulletin file

♦   Receive Validation and Transmission Reports

♦   Send documents

♦   Display transmission status

♦   Receive old Validation or Transmission Reports

♦   Change DIS password

See the chapter titled "Reports sent to Agents" for a description of Validation and Transmission Reports sent by the DIS to agents. For error messages, see the appendix titled "Error Messages".

Conventions used in this Chapter

In the following sections, a number of conventions have been used to assist the reader:

♦   Messages and prompts displayed by the DIS are indented and shown in a special typeface —

```
like this
```

♦   A bold face type is used for required input by the agent's system — **like this**

♦   Variable responses are enclosed in brackets like this: `[ ]`

♦   `<CR>` means to press the Return key (and send the carriage return character)

4.2 Connecting to the local modem

The agent's system must send industry standard (AT) commands to the modem connected to the agent's computer (the local modem).

Detailed information on AT commands are available from modem suppliers.

When beginning a communications session, AUTELS mode and custom VT100 software (see the section titled "Communication modes" for further details) must display and log the following message: `Connecting to Modem`.

The following is an example of the AT commands used to connect and configure an AT compatible modem:

Step	Action	Response	Meaning of command
1	**ATZ<CR>**		Initialise to known values
		OK	
2	**ATB2<CR>**		Select V.22 bis
		OK	

When an AT command is sent, the agent's system must check the response.

All actions and responses must be logged.

4.3 Connecting to Austpac

The agent's system asks the modem to place a telephone call to one of the Austpac telephone numbers. Answering the call is a Telecom modem which attempts to synchronise the two modems.

Once the modems are synchronised, any data sent to the agent's modem is received by the Austpac modem and passed on to an Austpac PAD.

The following shows a typical method for connecting to Austpac. All inputs and responses must be logged by the agent system.

At the beginning of this procedure, AUTELS and custom VT100 software must display and log:

```
Connecting to Austpac.
```

Step	Action	Response	Meaning of command
3	`ATDT0,01924<CR>`		Dial Austpac 2400bps service — tone dialling, requesting an external line from the local PABX
		CONNECT 2400	Modems are connected
		AUSTPAC mmm nnn ppp	The Austpac "herald" - "You are connected to an Austpac PAD"

If during this procedure there is no response or an invalid response from the modem, then the agent software must display and log an appropriate modem error message.

4.4 Connecting to the DIS

After connecting to Austpac, the agent tells the Austpac PAD to connect to a the DIS. To establish this connection, the agent must specify an Austpac Network User Identity and the address of the DIS.

Austpac will allow five (5) attempts to connect with the DIS before disconnecting the agent.

Once the connection is established, the PAD passes data without further attention by the agent or the DIS.

After receiving the "CONNECT 2400" message and the Austpac herald, the agent's system sends the agent's NUI (Network User Identifier) and the DIS address.

At the beginning of this procedure, AUTELS and custom VT100 software must display and log:

```
Connecting to DIS.
```

All actions and responses must be logged.

Step	Action	Response	Meaning of command/response
4	`N<NUI>-11122233301 <CR>`		NUI requests connection
		<CR><LF>	Acknowledgment
		COM	PAD connected

In this example, <NUI> is any network user identity and 229151001031 is an example of a DIS address - in this case it is the EDGE software test machine.

Austpac call request format

The Austpac call request requires a hyphen and full stop (ASCII 045, 046) before a symbolic address, or a hyphen before a numeric X.121 address, as shown in the above example. ASIC recommends that agent software support both forms of address.

If the connection is successful, the screen clears and the DIS log-in screen is sent to the agent.

If during this procedure, there is an error message from Austpac, then the agent's system must log and display it.

4.5 Selecting the operating mode

After connecting to the DIS, the DIS log-in screen (in which are embedded AUTELS strings) is sent to the agent's system:

```
 16:51 pm                    1 October 1993                         Friday
********************************************************************************

                  AUSTRALIAN  SECURITIES  COMMISSION DEVT

                    ELECTRONIC LODGEMENT SERVICE

         EEEEEEEE     DDDDDD        GGGGGG       EEEEEEEE
         EEEEEEEE     DDDDDDDD     GGGGGGGG      EEEEEEEE
         EEE          DDD  DDD     GGG  GGG      EEE
         EEEEEEEE     DDD  DDD     GGG           EEEEEEEE
         EEE          DDD  DDD     GGG GGGG      EEE
         EEEEEEEE     DDDDDDDD     GGGGGGGG      EEEEEEEE
         EEEEEEEE     DDDDDD        GGGGGGG      EEEEEEEE

                    Document Interchange System

************************Press Return key to log-in******************** *****DE<
```

At this point the agent (or agent's software) selects the operating mode.

If the agent decides to use the VT100 screens and menus provided by the DIS, then
     <CR>

(carriage return) must be sent when the log-in screen appears.

If the agent selects the AUTELS mode, the agent's software must send the response indicator:
     <Ctrl B>***5 <CR>**

(where 5 is the checksum for this string)

If an invalid response or no response at all is received within the time–out period of 1 minute, the DIS sends the log-in screen again. The DIS sends this screen five (5) times before disconnecting the agent.

4.6 Logging-in to the DIS

Having selected the operating mode, agents log in to the DIS using their user ids and passwords.

The id and initial password are issued by ASIC to the agent as part of client registration. See the section titled "Security" for details. The password first issued by ASIC must be changed at the first log-in.

The following VT100 log-in screen prompts agents to log-in to the DIS:

```
 17:37 pm                       1 October 1993                            Friday
********************************************************************************

                    AUSTRALIAN   SECURITIES   COMMISSION DEVT

                         EDGE  ELECTRONIC  LODGEMENT

            EEEEEEEE      DDDDDD          GGGGGG        EEEEEEEE
            EEEEEEEE      DDDDDDDD       GGGGGGGG       EEEEEEEE
            EEE           DDD  DDD       GGG  GGG       EEE
            EEEEEEEE      DDD  DDD       GGG            EEEEEEEE
            EEE           DDD  DDD       GGG GGGG       EEE
            EEEEEEEE      DDDDDDDD       GGGGGGGG       EEEEEEEE
            EEEEEEEE      DDDDDD          GGGGGGG       EEEEEEEE

                         Document  Interchange  System

************************Press Return key to log-in******************** *****DE<




```

Agents respond by typing their ids and pressing the Return key:

```
Type your DIS user id:    [USER_ID]<CR>
```

The DIS then prompts agents to type their the DIS passwords. Agents respond by typing their the DIS passwords and pressing the Return key:

```
Password:    [PASSWORD]<CR>
```

If the user id or password is not valid, the agent is returned to the Austpac screen after the DIS sends one of the following error messages:

```
Invalid user ID or Password (D01)
This user ID is in use by someone else (D02)
Too many failed log-in attempts, account LOCKED (D03)
ASIC File system problem (D04)
Access to this account is LOCKED (D05)
Invalid NUA (D12)
```

If one of these messages is received, the agent system must display and log it. See the appendix titled "Error Messages" for explanations of these messages.

The DIS disconnects the agent and Austpac sends the "clear" indication: CLR DTE 000

Software must log this Austpac message while AUTELS and custom VT100 software must display and log an explanatory message such as:

```
Your connection to the DIS has been cleared
```

Refer to appendix A for an explanation of error messages.

If ASIC de-registers an agent, the following message is seen below the menu title:

```
You have been deregistered. Please call ASIC
```

Attention: If an invalid user id or password is typed, the connection to the DIS is cleared. Austpac allows five (5) attempts to connect with the DIS before disconnecting the agent.
If an agent (or agent software) sends an incorrect password six (6) times in succession, the account is locked to prevent access and the DIS sends a D03 message.
Even with the correct password, subsequent attempts to log in fail and the D05 message is sent.
If this happens, the agent must contact EDGE user support staff for assistance in resolving the problem.

4.7 The System Bulletin

If there is a current System Bulletin, the DIS displays it after log-in; otherwise, the DIS displays the main menu screen.

The Bulletin usually indicates expected service interruptions. It also shows the date and time the Bulletin was created by the DIS. The Bulletin is displayed after each log-in until it is removed by the DIS operators:

```
 17:37 pm                    1 October 1993                       Friday
 **********************************************************************
                   AUSTRALIAN   SECURITIES   COMMISSION DEVT

                     EDGE Document Interchange System

 SYSTEM BULLETIN  created 8.27AM Thursday January 9, 1993

 The system is unavailable from 8.00 am to 10.00 pm on
 Friday 15/01/93 due to system maintenance.




 Press Return key to continue


```

To continue, the agent presses the Return key.

The System Bulletin may require more than one screen. In this case, pressing the Return key displays the next Bulletin screen.

The System Bulletin is also sent to agents as a file. The name of System Bulletin files have the form BULL_ss.nnn, where ss is the DIS identifier (see the section titled "Naming files sent to agents") and nnn is a sequence number.

Each file always starts with the date and time of creation, in the form: YYMMDD HHMMSS This string is not displayed on the screen.

Each unique System Bulletin file is sent to an agent only once.

If the agent has experienced a transmission failure during the previous communications session, an error screen will be seen at this time by VT100 users.

Attention: In AUTELS mode, the System Bulletin is sent only as a file. AUTELS mode software must allow agents to view the System Bulletin, and must warn them that a new Bulletin has been received.AUTELS mode software need not display it at the time it is sent by the DIS, but it must be stored and brought to the attention of the agent.

4.8 DIS Services

The Main Menu

The DIS displays the main menu after log-in or after the System Bulletin and any current error screen is shown. The screen seen by the agent varies according to whether:

♦   Validation Reports, Transmission Reports or the System Bulletin are waiting to be accepted by the agent, or

♦   the agent's password has expired.

These two conditions are indicated by a status message displayed in reverse video directly below the screen title.

The menu items change so that agents are forced to accept reports or change passwords before sending files.

The following screen shows the full list of menu items and an example status message (these options are never seen at one time):

```
17:37 pm                      1 October 1993                        Friday
*****************************************************************************

                    AUSTRALIAN  SECURITIES  COMMISSION DEVT

                     EDGE Document Interchange System

                            MAIN MENU

                Your Password will expire in 3 days

                    A  Send documents
                    B  Receive validation/transmission report
                    C  Change password
                    D  Display transmission status
                    E  Select old validation/transmission reports
                    X   Exit

            Please type your selection :
```

Software developers can select four other 'hidden' items that are described in the section titled "Facilities for Software Producers". Except for <**Ctrl R**><**CR**> ('resend last screen'), agents should not be informed of these hidden options; they are designed to assist software producers to find errors in their programs.

The following sections describe the four main menus and associated status messages.

Main menu — no status message

The DIS does not have any validation or transmission reports or System Bulletin files waiting to be sent to the agent. In this case, menu item B is not seen:

```
 17:37 pm                    1 October 1993                    Friday
 ********************************************************************
                 AUSTRALIAN   SECURITIES   COMMISSION DEVT

                   EDGE Document Interchange System

                          MAIN MENU

                 Your Password will expire in 3 days

                       A  Send documents

                       C  Change password
                       D  Display transmission status
                       E  Select old validation/transmission reports
                       X   Exit

              Please type your selection :


```

The agent types the character that corresponds to the service required:

If the agent types:	Then the DIS:
A	Displays 'Send Documents To the DIS' screen to prompt the agent to start the file transfer.
C	Displays 'Change Password' screen
D	Displays 'Transmission Status' screen
E	Displays 'Select Old Reports 'screen
X	Logs out the agent and terminates the agent's Austpac connection to the DIS

Any incorrect menu selection results in an error message:

```
Invalid selection - please re-type selection
```

Main menu — reports waiting

The DIS is holding a Validation Report, Transmission Report, System Bulletin or other file and is waiting for the agent to request it. In this case, menu item A is not displayed:

```
17:37 pm                        1 October 1993                          Friday
******************************************************************************

                  AUSTRALIAN   SECURITIES   COMMISSION DEVT

                    EDGE Document Interchange System

                            MAIN MENU

  1 Transmission and 2 validation reports waiting to be sent


                        B  Receive validation/transmission report
                        C  Change password
                        D  Display transmission status
                        E  Select old validation/transmission reports
                        X   Exit

              Please type your selection :
```

Main menu — password warning message

In this case, the agent's the DIS password is due to expire within n days (where n
ranges from 1 to 7) and the DIS sends a warning message. This is only a warning —
normal operation can continue.

In the following example, the DIS does not have any validation or transmission
reports waiting for the agent, so option B is not displayed:

```
17:37 pm                        1 October 1993                          Friday
******************************************************************************

                  AUSTRALIAN   SECURITIES   COMMISSION DEVT

                    EDGE Document Interchange System

                            MAIN MENU

             Your Password will expire in [n] days

                      A  Send documents

                      C  Change password
                      D  Display transmission status
                      E  Select old validation/transmission reports
                      X   Exit

              Please type your selection :
```

Main menu — change password

In the following example, the agent's the DIS password has not changed for 30 days
or more, and the only valid menu items are to change the password or exit the DIS:

```
17:37 pm                       1 October 1993                        Friday
*****************************************************************************
                   AUSTRALIAN   SECURITIES   COMMISSION DEVT

                  EDGE Document Interchange System

                            MAIN MENU
          Your Password has expired  Please change your password



                       C   Change password

                       X    Exit

              Please type your selection :


```

Receive New Reports

This screen is used to prompt agents to start their file transfer protocols (Kermit or
ZModem) to receive new Validation, Transmission or other reports:

```
18:25 pm                      30 September 1993                    Thursday
*****************************************************************************
                   AUSTRALIAN   SECURITIES   COMMISSION DEVT

                  EDGE Document Interchange System

                        RECEIVE NEW REPORTS

            Start your KERMIT or ZMODEM program to receive reports

 ----------------------------------------------------------------------------
**B00000000000000




```

When this screen appears, the agent must start Kermit or ZModem in the receive
mode.

Most versions of Kermit or ZModem place received files into the agent's current
directory. Agent software should allow Kermit or ZModem to rename files if the
names already exist in the current directory.

If Kermit or ZModem is not started, or a communications error occurs, then the DIS
times-out and displays an error screen. After the agent acknowledges this screen, the
DIS displays the main menu screen.

Attention:	When the agent system notifies the DIS that it intends to receive files, the DIS responds by sending the 'Receive New Reports' screen which contains a 'probe packet' consisting of: `**<Ctrl X>B000000000000000<Ctrl A><CR><LF>` Refer to appendix E for more information about automatic protocol detection.

Send Documents to the DIS

This screen prompts agents to start Kermit or ZModem and send document files to the DIS:

```
 18:25 pm                     30 September 1993                   Thursday
 ****************************************************************************

                   AUSTRALIAN   SECURITIES   COMMISSION DEVT

                       EDGE Document Interchange System

                         SEND DOCUMENTS TO THE DIS

            Start your KERMIT or ZMODEM program to send document files

 ----------------------------------------------------------------------------
# N3
```

To send document files, the agent must start Kermit or ZModem in the transmit mode and send the files using a wildcard option (for example, `*.*` for MS DOS systems), which selects all files in the current directory for transmission.

Attention:	Care should be taken so that the correct files are being sent to the DIS. Check the limit on the number of files that Kermit or ZModem can handle using the wildcard option. Regardless of any limits imposed by Kermit or ZModem, no more than 99 document files can be sent in any one transmission.

If the transmission is successful, the DIS displays the Main Menu screen.

If the agent does not start Kermit or ZModem in the send mode, or a communications failure occurs, then the DIS times-out and displays the 'Transmission Error' screen (in AUTELS mode, the 'D10' error message is sent by the DIS). If the error causes the Austpac connection to be broken, the agent is logged out by the DIS. The next time the agent logs in, the DIS displays the 'Transmission Error' screen.

If the 'Transmission Error' screen is displayed by the DIS and acknowledged by the agent (by pressing the Return key), the main menu screen is displayed by the DIS. The agent must then accept transmission report before sending any more document files.

When the agent system notifies the DIS that it intends to send files, the DIS responds by sending the 'Send Documents' screen which contains a 'probe packet' consisting of:

`**<Ctrl A># N3<CR><LF>` (note the space after `#`)

Refer to appendix E for more information about automatic protocol detection.

Display Transmission Status

This screen shows the current status of transmissions sent by agents which are still stored on the DIS and awaiting processing. There may be more than one page to a Transmission Status report:

```
 18:25 pm                      30 September 1993                    Thursday
 ****************************************************************************

                    AUSTRALIAN   SECURITIES   COMMISSION DEVT

                      EDGE Document Interchange System

                          TRANSMISSION STATUS

                     34 transmissions awaiting validation

     TRANS. NO. DATE/TIME SUBMITTED              STATUS
     --------------------------              ------
        15     03/01/93    13:03:52     WAITING FOR VALIDATION
        14     02/01/93    14:04:32     WAITING FOR VALIDATION
        13     02/01/93    15:01:44     WAITING FOR VALIDATION
        11     01/01/93    14:57:00     WAITING FOR VALIDATION
        10     01/01/93    15:51:32     WAITING FOR VALIDATION

            Press Return key to continue
```

This example shows that 34 transmissions are waiting to be validated by the DIS.

If the validation program on the DIS is not running, another message is sent:

```
No transmissions are being validated
```

There are three status states that may be displayed:

WAITING FOR VALIDATION	Documents have been received but haven't yet been validated
VALIDATING	Documents are being validated
VALIDATED/ PENDING PROCESSING	Documents have been validated, a validation report has been prepared and the documents are waiting to be processed by the ASCOT processing computer

The DIS does not process documents, it only checks for certain errors. When a transmission number no longer appears on the transmission status screen, the documents in that transmission have been transferred to the ASCOT database machine for lodgement.

To continue the communication session, the agent presses the Return key. If there is more than one page in a report, pressing the Return key displays the extra pages before continuing.

Attention: Software developers are strongly discouraged from using this option as a polling mechanism because it generates I/O which is excessive for a poll. If developers want the software to poll waiting for new reports, they should use the "check status" Autels string. .

Change Password

This screen allows agents to change passwords:

```
 18:25 pm                         30 September 1993                    Thursday
********************************************************************************
                        AUSTRALIAN   SECURITIES   COMMISSION DEVT

                          EDGE Document Interchange System

                              CHANGE DIS PASSWORD

                  Your DIS password cannot exceed 16 characters
                       Use only the following characters:
                          Upper case letters:  A - Z
                                Numbers:  0 - 9
--------------------------------------------------------------------------------
 Type old password:
 Type new password:
 Retype new password for confirmation:




```

The DIS prompts the agent to type the old (current) password. Agents type the old password and press the Return key:

```
Type old password:   [OLDPSWD]<CR>
```

The DIS then prompts the agent to type a new password:

```
Type new password:   [NEWPSWD]<CR>
```

A third prompt next appears at the bottom of the screen asking the agent to confirm the new password:

```
Re-type new password for confirmation:       [NEWPSWD]<CR>
```

If all is correct, the DIS displays the following message:

```
Password has been changed - Press Return key to continue
```

If the old password or new password is incorrect, THE DIS displays the following message:

```
Passwords do not match (D06)
Your password was not changed
Press Return key to continue
```

If a DIS error occurs — which prevents the password being changed — the DIS displays the following message:

```
ASIC file system problem (D04)
Your password was not changed
Press Return key to continue
```

If the new password is invalid (more than 16 characters or less than 6 characters or containing illegal characters), the DIS displays the following message:

```
Password is invalid (D15)
Your password was not changed
Press Return key to continue
```

If the password has been used before, the DIS displays the following message:

```
Password has been used before (D14)
Your password was not changed
Press Return key to continue
```

Select Old Reports

This screen allows an agent to select old Validation, Transmission or other reports and transfer them from the DIS:

```
 18:25 pm                    30 September 1993                   Thursday
*******************************************************************************

                   AUSTRALIAN  SECURITIES  COMMISSION DEVT

                      EDGE Document Interchange System

                          SELECT OLD REPORTS

        To select reports, type each number followed by a comma.
              If you require all listed reports, type '*'
           Finish selection or exit by pressing Return key

        1   VALID_DE.10   2   VALID_DE.11   3   VALID_DE.12
        4   TRANS_DE.10   5   TRANS_DE.11   6   TRANS_DE.12

 Type selection separated by commas:



```

The number of old reports available for transmission depends on the load on the DIS, but no more than three of each kind are shown on the screen. If a report is not shown on the screen, then the agent must obtain it through the EDGE support staff

The DIS prompts the agent to type a selection of old reports to receive. The agent types the number preceding the required report. If more than one report is needed, the agent types each number followed by a comma and concludes the request by pressing the Return key.

```
Type selection separated by commas: [1,2,6] <CR>
```

After a valid selection is made, the 'Receive Old Reports' screen is displayed.

If the Return key is pressed without making any selection, then the DIS returns to the Main Menu screen.

If the selection of report numbers typed is invalid, then the DIS displays the following message:

```
Invalid selection - please re-type your selection
```

Receive Old Reports

This screen is used to prompt an agent to start the file transfer process (Kermit or ZModem) to receive old Validation, Transmission or other Reports:

```
 18:25 pm                      30 September 1993                      Thursday
********************************************************************************
                    AUSTRALIAN   SECURITIES   COMMISSION DEVT

                       EDGE Document Interchange System

                            RECEIVE OLD REPORTS

              Start your KERMIT or ZMODEM program to receive reports

 ------------------------------------------------------------------------------
**B00000000000000
```

The agent must now start Kermit or ZModem in the receive mode to obtain the old reports.

Most versions of Kermit or ZModem places received files into the agent's current directory. Agent software should also allow Kermit or ZModem to rename files if the names already appear in the current directory.

If Kermit or ZModem is not started, or a communications error occurs, then the DIS times-out and displays an error screen. After the agent acknowledges this screen, the DIS displays the main menu screen.

Attention:	When the agent system notifies the DIS that it intends to receive files, the DIS responds by sending the 'Receive Old Reports' screen which contains a 'probe packet' consisting of: `**<Ctrl X>B000000000000000<Ctrl A><CR><LF>` Refer to appendix E for more information about automatic protocol detection.

Error screens

There are three conditions that cause the DIS to send an error screen to the agent's system:

♦ Errors during transmission

♦ TXID file not sent to the DIS

♦ DIS software error

The error screens sent on these conditions are described in the following sections. Transmission errors are more fully described in the chapter titled "Reports Sent to Agents".

TXID error screen

This screen is displayed if there was no TXID file in the previous document data transmission (in AUTELS mode, the 'D11' message is sent by the DIS):

```
 18:25 pm                       30 September 1993                        Thursday
*******************************************************************************

                      AUSTRALIAN   SECURITIES   COMMISSION DEVT

                        EDGE Document Interchange System

                                   TXID ERROR

                        Error in your last transmission

                          No TXID file was received
             After you receive the last transmission report you must
                re-transmit all documents along with the TXID file

                          Press the Return key to continue



```

In this case, all files in the transmission are deleted by the DIS.

When the agent presses the Return key, the DIS displays the main menu screen.

ASIC software error screen

This screen is displayed after an ASIC software error occurs during a session (in AUTELS mode, the 'D07' message is sent by the DIS). This event should be reported to ASIC immediately:

```
 18:25 pm                        30 September 1993                    Thursday
*******************************************************************************
                    AUSTRALIAN   SECURITIES   COMMISSION DEVT

                    EDGE Document Interchange System

                          ASIC SOFTWARE ERROR

            An error has occurred in the on-line transmission program

                Please contact your DIS System Administrator

                DO NOT ATTEMPT TO LOG-IN AGAIN UNTIL ADVISED BY THE
                DIS SYSTEM ADMINISTRATOR

                        Press the Return key to log-out




```

The agent must press the Return key to log out.

Transmission error screen

When the DIS detects a transmission error, usually caused by a transmission error during a session, the following screen is seen immediately — or if the error causes the agent to be disconnected, the screen is seen before the System Bulletin in the next communications session:

```
 18:25 pm                        30 September 1993                    Thursday
*******************************************************************************
                     AUSTRALIAN   SECURITIES   COMMISSION DEVT

                       EDGE Document Interchange System

                            TRANSMISSION ERROR

The EDGE Document Interchange System has detected an error.

The transmission report now waiting to be sent will list the
last successful document transmission. Any documents sent
to the DIS after this must be re-transmitted.

                        Press the Return key to continue



```

This screen is seen immediately after a transmission if a TXID file is received during the transmission and:

♦   the agent cleanly aborts Kermit or ZModem, or

♦   no files were received in the transmission, or

♦   there was a ZModem or Kermit protocol error.

This screen is seen before the System Bulletin during the next session if:

♦   the agent is disconnected while transmitting documents, or

♦   there is a DIS failure while the agent is connected.

If no TXID file is received by the DIS before the transmission error, then the TXID error screen is seen instead of the Transmission Error Screen.

The management of such problem is discussed in the section below titled "Transmission Reports".

After the Return key is pressed, the DIS displays the main menu screen. Agents should select the menu item for receiving validation/transmission reports.

4.9 Logging-out

After agents have completed a session, they exit and the DIS automatically logs–out.

An agent can log-out by using the Exit option on the VT100 menu screens or by using AUTELS action indicators.

When agents exit and are logged-out, they are disconnected from the DIS and Austpac sends them

```
CLR DTE 000
```

messages.

5. USING THE AUTELS MODE

5.1 Overview

AUTELS is designed to assist developers who wish to provide alternatives to the VT100 services described above in the chapter titled "Communication with the DIS".

Communication sessions using the AUTELS mode proceed very much like VT100 sessions. the DIS is not sensitive to the way facilities and processing are provided by agent software using AUTELS protocols. To the DIS, all AUTELS mode software looks alike.

There are two operating differences between AUTELS and VT100 communications: there is no AUTELS 'State' corresponding to the System Bulletin screen, and no State corresponding to the error screens. If there is a Bulletin, it will be queued as a file — together with Transmission and Validation Reports — waiting to be sent to the agent's system. Errors are sent in 'strings' as described in the following sections.

Agents are informed of transmission errors in Transmission Reports. See the section titled "Reports Sent to Agents".

The System Bulletin file must be made available by AUTELS and custom VT100 software for viewing and printing. The System Bulletin is always named BULL_ss.nnn, where ss identifies the DIS and nnn is a sequence number. Each unique System Bulletin is sent to each agent only once.

Warning:	ASIC recommends that agent software providing custom menus and screens — or facilities and functions additional to the VT100 services — always use the AUTELS protocols rather than attempting to interpret the VT100 screens sent to agents by the DIS. ASIC may change the details of these screens without notice.

5.2 AUTELS operation

Agent systems and the DIS communicate by passing AUTELS message strings to each other. The messages sent by the DIS contain action indicators and the messages sent by the agent system contain response indicators.

AUTELS message strings are described in the section below titled "AUTELS string formats". They are organised by means of the State Tables in the section below titled "AUTELS State Tables". States correspond closely to the screens that are sent by the DIS during VT100 sessions. Each State Table is equivalent to the interaction provided by a VT100 menu. Action indicators correspond to the menu items and response indicators correspond to the agent's selection. Other action indicators result from errors detected by the DIS.

There are eight states and they correspond to VT100 screens as follows:

State	VT100 mode screens
0	Log-in
1	Main menu
2	Change password
3	Display transmission status
4	Select old Validation or Transmission Reports
5	Send documents
6	Receive new reports
7	Receive old reports

The agent's system always starts a communication session in state 0. It waits to receive an action indicator from the DIS. When the string arrives, the agent's system checks for corruption using the algorithm set out in appendix F.

If there is no error, the agent's system then searches for the action indicator in the table for the current State. It decides on the next request and sends the corresponding response indicator to the DIS. The response indicator chosen may result in a change of state for the agent's system as indicated in the state table for the selected response indicator.

After log-in, the agent system moves to state 1 and waits for the next action indicator string sent by the DIS.

The DIS and the agent's system pass from state to state, send indicators to each other and transfer documents.

The following paragraphs briefly describe each state. They are described in numerical order only for convenience; the sequence of states never occur in this order during a communications session.

State 0 (Log-in)

The DIS sends the log-in screen, which contains the action indicator $*****$ requesting the agent's system to select an operating mode. The agent's system responds by sending the response indicator $*****$.

The agent's system then sends the DIS user id and password in response to action indicators from the DIS. Both systems remain in state 0 until log-in is complete.

State 1 (Main menu)

The agent's system waits for an action indicator string. When it is received, the agent's system selects one of the responses listed against the action indicator, sends the corresponding response indicator, changes its current state to that indicated in the state table, and performs the next action.

State 2 (Change password)

The agent's system waits for an action indicator string. When it is received, the agent's system inserts password information into a Type 6 response string. The information to be sent — old or new password — is defined by the action indicator.

State 3 (Display transmission status)

The agent's system waits for an action indicator string. When it is received, the agent's system extracts the status of one transmission from a status record action indicator string. Each string has to be acknowledged with a Type 5 response string. the DIS sends a last status record action indicator when no more status records are available. After the last status record string is acknowledged, both systems return to state 1.

State 4 (Select old reports)

The agent's system waits for a select old files action indicator string. When it is received, the agent's system extracts information on old transmission, validation and other reports from Type 3 action indicator strings. Each string must be acknowledged and the DIS sends a last old file record action indicator when no more old reports are available.

The agent's system selects reports by returning a make selection of old files response indicator string.

State 5 (Send documents)

The agent's system waits for a Type 1 action indicator string. When the agent's system receives the ready to receive documents action indicator, it can start the file transmission protocol and send the documents. When the files have been transferred, both systems return to state 1.

State 6 (Receive new reports)

The agent's system waits for an action indicator string. When it receives the ready to send new reports action indicator, it starts the file transmission protocol and receives new Validation, Transmission or other reports. When the files are transferred, both systems return to state 1.

State 7 (Receive old reports)

The agent's system waits for an action indicator string. When it receives the ready to send old reports indicator from the DIS, it starts the file protocol and receives old Transmission, Validation or other Reports. When the files are transferred, both systems return to state 1.

AUTELS Error handling

If the agent's system finds a check digit error, it responds with a request resend response indicator.

The agent's system should wait a maximum of 60 seconds for a string. If none arrives, the agent's system requests the string to be resent.

If the agent's system cannot find an action indicator in the current State Table, it performs one of the actions listed against protocol violation in the State Tables. That is, the agent's system requests a system reset, or disconnects. If a reset string is sent, both parties return to state 0 and the agent's system selects the operating mode and logs-in again. All protocol violations must be logged by the agent's system.

ASIC recommends the use of a retry counter. If five request reset response indicators are sent, the agent's system should disconnect.

When the DIS does not receive or recognise a response indicator string, it sends a Type 4 string that includes an error code, a state and the previous action indicator string. The agent's system must display and/or log the error message corresponding to the error code, go to the state indicated in the state field, and then use the previous Type 4 string as if it were received as a normal action indicator string.

The DIS waits 25 seconds for a response from the agent's system before re-sending the previous action indicator in a Type 4 string; in this case it contains a no response error code, but the state is not changed and the agent's system can simply ignore this action indicator.

The DIS re-sends a Type 4 string 20 times (over a period of eight minutes). If no valid response is received, the DIS logs out the agent's system.

Transmission error handling

Transmission errors and procedures for dealing with them are described in the chapter titled "Reports Sent to Agents".

5.3 AUTELS string formats

There are seven string types (0 to 6). All start with the Header character `<Ctrl B>` and end with the Checksum character and the Eol character `<CR>`. Strings may also contain information.

All strings are a maximum of 80 characters in length except for Type 0, the log-in screen, which is a special case.

The general format of AUTELS strings is:

```
<Ctrl B>, 5 indicator chars, information chars, 1
Checksum char, <CR>
```

All characters in the string are printable ASCII characters except for `<Ctrl B>` and `<CR>`.

Checksum

All indicator strings include a single byte checksum character immediately preceding the `<CR>` — the last printable character in the string. It ensures that the string has arrived without corruption.

When an action indicator is received, the agent system calculates a checksum for this string and compares it with the checksum inserted by the DIS. If they do not match, then the string has been corrupted and the agent's system should send a Request resend response indicator string.

Appendix F — Single byte checksum describes the algorithm for calculating checksums.

Type 0 — Action indicator

Definition

Header	Indicator	Site	Chk	Eol
<Ctrl B>	* * * * *	2	1	<CR>

Description

Sent by	the DIS
Purpose	to request agent's system to select an operating mode (VT100 or AUTELS)

The Type 0 indicator string is different from all others in that it is embedded in the last line of the Log-in screen. The `<Ctrl B>` Header character is also sent, but cannot be seen on the screen.

Example:

```
********Press Return key to log-in***<Ctrl
B>*****DEE<CR>
```

Where `<Ctrl B>*****DE<` are the last characters in the log-in prompt. The fields in this string and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`* * * * *`	Log-in action indicator string
`DE`	Development DIS identification
`<`	checksum
`<CR>`	Eol

Type 1 — Action indicator

Definition

Header	Indicator	Date/time	Chk	Eol
`<Ctrl B>`	5	18	1	`<CR>`

Description

Sent by	the DIS
Purpose	to send an action indicator and the date/time that the indicator is sent
Indicator	5 alphanumeric characters (See state tables)
Date/time	Date/time this string was sent. 18 alphanumeric characters giving date/time in format DD_MMM_YY_HH:MM:SS, where underscore=space

Example

```
<Ctrl B>1111104 Jan 92 11:45:47J<CR>
```

Fields and their meanings are

Field	Meaning
`<Ctrl B>`	header
`11111`	ready to receive
`04 Jan 92 11:45:50`	date/time string sent
`J`	checksum
`<CR>`	Eol

Type 2 — Action indicator plus transmission status information

Definition

Header	Indicator	Date/ time	Trans No	Date	Time	Status	Chk	Eol
`<Ctrl B>`	5	18	3	8	8	28	1	`<CR>`

Description

Sent by	the DIS
Purpose	to send an action indicator and transmission status information
Indicator	5 alphanumeric characters (See state tables)
Date/time	Date/time this string was sent. 18 alphanumeric characters, format DD_MMM_YY_HH:MM:SS, where underscore = space
Trans no	Transmission number for status display 3 alphanumeric characters, range 1-999, right justified with leading spaces
Date	Date that 'Trans no' was submitted 8 alphanumeric characters, format DD/MM/YY
Time	Time that 'Trans no' was submitted, 8 alphanumeric characters, format HH:MM:SS
Status	Status of 'Trans no'. 28 alphanumeric characters, text left justified with trailing spaces. For status contents, see table "Status Field Contents" below.

Status Field Contents

The Status field can take the followign values:

```
WAITING FOR VALIDATION nnnn
VALIDATING
VALIDATED/PENDING PROCESSING
```

where `nnnn` is the number of transmissions in the validation queue; (e.g. `0018`).
May be followed by `N` if the validation program is not running (e.g. `0018N`)

Example

```
<Ctrl B>)))))04 Jan 92 11:45:50 1003/01/9213:03:52
VALIDATING                    .<CR>
```

Fields and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`)))))`	action indicator for 'status record'
`04 Jan 92` `11:45:50`	date/time string sent
`10`	transmission number
`03/01/92`	date transmission submitted
`13:03:52`	time transmission submitted
`VALIDATING`	status of transmission
`.`	checksum
`<CR>`	Eol

Type 3 — Action indicator plus old file information

Definition

Header	Indic-ator	Date/time	Seq	File-name	Seq	File-name	Seq	File-name	Chk	Eol
`<Ctrl B>`	5	18	2	12	2	12	2	12	1	`<CR>`

Description

Sent by	the DIS
Purpose	to send an action indicator and information for selecting old files
Indicator	5 alphanumeric characters (See state tables)
Date/time	Date/time this string was sent 18 alphanumeric characters, format DD_MMM_YY_HH:MM:SS, where underscore = space
Seq	Sequence number for selecting filename. Two alphanumeric characters, range 1-14, right justified with leading spaces.
Filename	The filename of a transmission or validation report 12 alphanumeric characters, left justified with trailing spaces

If there are not three sets of <Seq> and <Filename> entered, the unused fields will be filled with space characters.

Example

```
<Ctrl B>=====04 Jan 92 11:45:47 7VALID_DE.16
8VALID_DE.17 9TRANS_DE.17 (<CR>
```

Fields and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`=====`	action indicator for 'old file information'
`04 Jan 92` `11:47:50`	date/time string sent
`7`	sequence number
`VALID_DE.16`	filename of old file
`8`	sequence number
`VALID_DE.17`	filename of old file
`9`	sequence number
`TRANS_DE.17`	filename of old file
`(`	checksum
`<CR>`	Eol

Type 4 — Error message sent by the DIS

Definition

Header	Indicator	Error code	State	Previous string	Chk	Eol
`<Ctrl B>`	5	3	1		1	`<CR>`

Description

Sent by	the DIS
Purpose	to resend an action indicator and the previous string after an invalid response
Indicator	5 alphanumeric characters (See state tables)
Error code	See list of error codes and meanings in following table. 3 alphanumeric characters
State	The agent's system must return to this state 1 numeric character, range 1-7
Previous string	The agent's system should use this action indicator string now. Variable length alphanumeric

Error Codes

Code	Meaning
D01	Invalid user id or password
D02	This user id is in use by someone else
D03	Too many failed log-in attempts, account LOCKED
D04	ASIC file system problem
D05	Access to this account is locked
D06	Passwords do not match
D07	ASIC software error
D08	Protocol violation
D09	No response
D10	Transmission error
D11	TXID error
D12	Invalid NUA
D13	Checksum error
D14	Password has been used before
D15	Your password is invalid
D16	Parity error

See the appendix titled "Error Messages" for full explanation of errors

Example

```
<Ctrl B>!!!!!D0611111104 Jan 92 11:45:47H<CR>
```

Fields and their meanings are:

Field	Meaning
<Ctrl B>	header
!!!!!	action indicator for 'response error'
D06	error type
1	next state
1111104 Jan 92 11:45:47	type 1 indicator string
H	checksum
<CR>	Eol

Type 5 — Response indicator

Definition

Header	Indicator	Chk	Eol
<Ctrl B>	5	1	<CR>

Description

Sent by	agent's system
Purpose	to respond to an action indicator
Indicator	5 alphanumeric characters (See State tables)

Example

```
<Ctrl B>AAAAA&<CR>
```

Fields and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`AAAAA`	response indicator for 'send documents'
`&`	checksum
`<CR>`	Eol

Type 6 — Response indicator plus id, password & file selection information

Definition

Header	Indicator	Information	Chk	Eol
`<Ctrl B>`	`5`	`32 characters`	`1`	`<CR>`

Description

Sent by	agent's system
Purpose	to send a response indicator, ID and password, OR to send a response indicator and file selection information
Indicator	5 alphanumeric characters (See state tables)
Information	Password or file selection information. Variable length up to 32 alphanumeric characters, left justified

Example

```
<Ctrl B>666661,2,5,6A<CR>
```

Fields and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`66666`	response indicator 'select old files'
`1,2,5,6`	select files 1,2,5 and 6
`A`	checksum
`<CR>`	Eol

Type 7 — Action indicator plus password information

Definition

Header	Indicator	Date/ time	Pswd life	Chk	Eol
`<Ctrl B>`	5	18	2	1	`<CR>`

Description

Sent by	the DIS
Purpose	to send an action indicator, password information and the date/time that string is sent
Indicator	5 alphanumeric characters (See state tables)
Date/time	Date/time string was sent. 18 alphanumeric characters, format DD_MMM_YY_HH:MM:SS, where underscore=space
Pswd life	Life of password in days 2 alphanumeric characters, range 1-30, right justified with leading spaces

Example

```
<Ctrl B>[[[[[04 Jan 92 11:45:47 5.<CR>
```

Fields and their meanings are:

Field	Meaning
`<Ctrl B>`	header
`[[[[[`	action indicator 'log-in successful'
`04 Jan 92 11:45:47`	date and time string sent
` 5`	lifetime, in days, of current password
`.`	checksum
`<CR>`	Eol

5.4 AUTELS State Tables

State tables have two sections. The first section describes the action indicators and corresponding string types that are sent by the DIS while the two systems are in this state. The second section describes the allowable responses by the agent's system.

State 0 — Log-in screen

DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Log-in Screen	***** See Note	0	Select AUTELS	*****	5	0	Wait
Enter User_ID	%%%%%	1	Send User id	%%%%%	6	0	Wait
Enter Password	(((((	1	Send Password	(((((	6	0	Wait
Log-in successful	[[[[[	7	Acknowledge	[[[[[	5	1	Wait
Logging you out	&&&&&	1	Acknowledge	&&&&&	5		Exit
Error message	!!!!!	4	Extract State and previous string			as sent	Use Prev. string
Chk error	corrupted indicator		Request resend	YYYYY	5	0	Wait
Protocol violation	indicator not found		Disconnect		5	0	Wait

Note: The action indicator is embedded in the character string in the last line of the log-in screen; for example, the DIS sends:

```
********Press Return key to log-in***<Ctrl
B>*****DEE<CR>
```

State 1 — Main menu

DIS			Agent system				
Descr-iption	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Ready to receive	11111	1	Send documents Change passwd Display stats Receive old files Check status Exit	AAAAA CCCCC DDDDD EEEEE FFFFF XXXXX	5 5 5 5 5 5	5 2 3 4 1 0	Wait Wait Wait Wait Wait Wait
Ready to send	22222	1	Receive new files Change passwd Display stats Receive old files Exit	BBBBB CCCCC DDDDD EEEEE XXXXX	5 5 5 5 5	6 2 3 4 0	Wait Wait Wait Wait Wait
Password expired	88888	1	Change passwd Exit	CCCCC XXXXX	5 5	2 0	Wait Wait
Deregist-ered	99999	1	Rcv new files Change passwd Display stats Receive old files Exit	BBBBB CCCCC DDDDD EEEEE XXXXX	5 5 5 5 5	6 2 3 4 0	Wait Wait Wait Wait Wait
Logging you out	&&&&&	1	Acknowledge	&&&&&	5		Exit
Error message	!!!!!	4	Extract state and previous string			as sent	Use prev. string
Chk error	corrupted indicator		Request resend	YYYYY	5	1	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

Notes

The check status string, FFFFF, causes the DIS to recheck if there are files waiting to be sent. This is therefore a convenient string to use where the client wishes to remain logged on for a while and poll periodically for new reports. If used in this way then the poll check_status string should not be sent more often than every 15 seconds, so that the polling operation does not consume excessive bandwidth. Also, clients should not remain logged on polling in this fashion for longer than 5 minutes, so that they do not retain the connection too long at the expense of other clients wishing to connect.

State 2 — Change password

DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Enter old password	33333	1	Send old password	33333	6	2	Wait
Enter new password	44444	1	Send new password	44444	6	2	Wait
Confirm new password	55555	1	Send new password	55555	6	2	Wait
Password is changed	00000	1	Return to Main Menu	00000	5	1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use prev. string
Chk error	corrupted indicator		Request resend	YYYYY	5	2	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

State 3 — Display transmission status

DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Status record	)))))	2	Acknowledge status string	)))))	5	3	Wait
Last status record	\\\\\	2	Return to Main Menu	\\\\\	5	1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use previous string
Chk error	corrupted indicator		Request resend	YYYYY	5	3	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

State 4 — Select old validation or transmission reports

DIS	Agent system

Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Old file record	=====	3	Acknowledge old file string	=====	5	4	Wait
Last old file record	/////	3	Acknowledge last old file string	/////	5	4	Wait
Select old files	66666	1	Make selection of old files	66666	6	7 if selection made, else 1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use previous string
Chk error	corrupted indicator		Request resend	YYYYY	5	4	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

State 5 — Send Documents

DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Ready to receive documents	-----	1	Start file transfer protocol to send documents			1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use previous string
Chk error	corrupted indicator		Request resend	YYYYY	5	5	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

State 6 — Receive New Reports

THE DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action

Ready to send new reports	+++++	1	Start file transfer protocol to receive new reports			1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use previous string
Chk error	corrupted indicator		Request resend	YYYYY	5	6	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

State 7 — Receive Old Reports

THE DIS			Agent system				
Description	Action Indicator	String Type	Action	Response Indicator	String Type	Next State	Next Action
Ready to send old reports	77777	1	Start file transfer protocol to receive old reports			1	Wait
Error message	!!!!!	4	Extract state and previous string			as sent	Use previous string
Chk error	corrupted indicator		Request resend	YYYYY	5	7	Wait
Protocol violation	indicator not found		Request reset Disconnect	ZZZZZ	5	0	Wait

6. REPORTS SENT TO AGENTS

6.1 Overview of reports

There are two primary reports sent by the DIS: the Transmission Report and the Validation Report. These reports are designed to inform agents about the status of documents transmitted to the DIS. They assist agents to manage transmission problems and correct faulty electronic company documents.

Other "reports" (or files) contain invoices and outbound data.

Elsewhere in this specification these reports may be referred to as files, particularly in the sections describing the AUTELS protocol.

Developers of custom VT100 or AUTELS mode software may alter the format of these reports but cannot omit or change data items, field names or the order of their appearance on the report. The page headers and report termination line may be altered but their meanings must be preserved.

Descriptions of error messages, error ids, error explanations found in Transmission and Validation Reports are listed in the Registered Agents EDGE documentation - see appendix titled "Related Documents".

6.2 Transmission Reports

Transmission Reports are prepared after each transmission by an agent. They list all files in the transmission that have been received by the DIS.

Transmission Reports are prepared before the DIS reads the files sent by agents. The only information available are file names — the DIS knows nothing of the file contents at this stage. A Transmission Report is only a record of files received.

The filenames of Transmission Reports always have the form `TRANS_ss.nnn` (where `ss` identifies the DIS and `nnn` is the transmission number assigned by the DIS). Transmission numbers (from each DIS to each agent) are sequential. They range from 001 to 999 and then start again at 001.

Transmission Reports are ASCII files composed of printable characters.

Transmission Reports should be made available for viewing and printing by the agent as soon as it is received by custom VT100 and AUTELS mode software.

The following screen shows the format of a Transmission Report:

```
ASIC Development//01 Oct 93//Page 1
TRANSMISSION REPORT NUMBER  TRANS_DE.321

Agent_Name//Agent_Appr_No
Agent_Address  Agent_City  Agent_Postcode

TRANS NUMBER 321
DATE/TIME OF TRANS  01 Oct 93//10:46:48
FILES RECEIVED      3
TRANS COMPLETE      [Yes|No]
**T11 Transmission successfully completed**

TXID
ASE099_I.ABX
CASE094
ACASE0789_AS.QWE

**T10 END OF TRANSMISSION REPORT**
```

So that Reports can be manipulated by custom VT100 and AUTELS mode software, the data is organised as follows:

♦   All lines are left aligned and terminated by CR/LF

♦   Data items in brackets [ ] are optional

♦   The first three lines (including one line consisting of CR/LF only) comprise a header for printed pages which is repeated at the top of each page

  ♦   The variable data in the first line consists of three fields separated by two slash characters //

♦   The next nine lines, including two lines of CR/LF only, consist of a combination of fixed identification fields and variable data fields

  ♦   two lines identify the agent

  ♦   four lines start with fixed identification fields of 20 upper case characters

  ♦   the last line may also display a transmission error message (tabulated below)

  ♦   all variable fields are terminated by // or CR/LF

  ♦   there are no leading or trailing space characters in variable fields

    the time is in 24 hour format

♦   The next group of lines contain the agent assigned filenames for each document received by the DIS

  ♦   fields are up to 16 characters in length

  ♦   there is one line for each document file successfully received by the DIS

♦   Messages always start in column 1 and are preceded by `**Tnn` and a space character

If a transmission was completely successful, the message preceding the list of transmitted files is:

```
**T11 Transmission was successfully completed**
```

Transmission error handling

If a transmission was abnormal, the reason precedes the list of transmitted files. Possible DIS messages are:

Message	Meaning
`**T12 Batch aborted by user**`	The agent aborted Kermit or ZModem in the middle of a file transfer. This message may occur if a Kermit or ZModem protocol error occurs
`**T13 No files were received**`	No files were received by the DIS
`**T14 Failure encountered before transmission was completed**`	The transmission failed before it completed due to Kermit or ZModem time–out. This may be caused by a communications failure in the middle of a file transfer
`**T15 Transmission error— No TXID file was received**`	No TXID file was received by the DIS. All document files in this transmission have been deleted.

If a Transmission Report contains any of these error messages, then the agent must examine the Transmission Report in detail to determine which documents were received by THE DIS. The agent must then arrange for these documents to be re-transmitted.

If an agent assigned filename is invalid, THE DIS sends the following message:

```
      **T01 File deleted**
```

Possible causes of this message are the agent sending:

♦   A file with no filename; such a file is deleted by the DIS,

♦   A file with the name of the form `BULL_ss.nnn`, `TRANS_ss.nnn` or `VALID_ss.nnn`.

♦   More than one file in a transmission with the same name (one file is deleted by the DIS).

A Transmission Report always terminates with one of two messages:

```
**T10 END OF TRANSMISSION REPORT**
```

or

```
**T20 DIS failure - Check this transmission report - If
you have sent any transmissions after this one they must
be re-transmitted**
```

A 'T20' message means that the DIS failed during the previous session (and thereby disconnected the agent). When this occurs, an agent using VT100 mode sees the Transmission Error screen before the System Bulletin, and before the latest Transmission Report is received by the agent.

A Transmission Report ending with a 'T20' message must be treated as the last correct report. Transmission or Validation Reports having numbers greater than this report must be disregarded. This means that any documents sent to the DIS which are referred to in Transmission Reports with numbers higher than the number of a report ending with a 'T20' message must be re-transmitted.

For example, if the transmission report ending with a 'T20' message is named TRANS_DE.123, and another transmission report received by the agent is named TRANS_DE.124, then all documents sent in transmissions 124 have been lost and must be re-transmitted to the DIS. Some of the documents sent in transmission 123 may be lost also.

Because there is a small but real risk that one or more whole transmissions received by the DIS may be lost or damaged, agents are strongly advised to store at least the last three transmissions and the last three day's transmissions. The DIS does not tell agents which documents have been transferred from the DIS to ASCOT for lodgment processing, but the 'Transmission Status' screen (or its AUTELS equivalent) indicate this indirectly; when a transmission no longer appears on the 'Transmission Status' screen, it has been transferred from the DIS to ASCOT and the agent need no longer store it on his own system.

The example of a Transmission Report shown below lists document files successfully received and identifies one file that was deleted prior to some form of failure. The message at the end of this report indicates a DIS failure and there may be loss of previous transmissions.

```
ASIC Development//01 Oct 92//Page 1
TRANSMISSION REPORT NUMBER  TRANS_DE.325

Agent_Name//Agent_Appr_No
Agent_Address  Agent_City  Agent_Postcode

TRANS NUMBER 325
DATE/TIME OF TRANS  01 Oct 93//10:46:48
FILES RECEIVED      4
TRANS COMPLETE      No
**T14 Failure encountered before transmission was
 completed **

TXID
ACA099.QWE
ACASE094_ASD.RTY
**T01 File deleted**//TRANS_DE.123
ACASE078

**T20 DIS failure - Check this transmission
 report - If you have sent any transmissions after this
 one they must be re-transmitted**
```

6.3 Validation Reports

The Validation Report lists the document files that have been accepted by the DIS and validated against ASCOT data. Filenames for Validation Reports have the form VALID_ss.nnn, where ss is the DIS identifier and nnn is the transmission number assigned by the DIS.

Refer to "Document Messages Specification" for details of the validation report.

6.4 Invoice files

The invoice file contains details of invoices raised for statutory and late lodgement fees applicable to documents lodged. Filenames for invoice files have the form FINVO_ss.nnn, and FINVA_ss.nnn, where ss is the DIS identifier and nnn is the transmission number assigned by the DIS.

Refer to "Document Messages Specification" for details of the invoice file contents.

6.5 Outbound Data

Data being transferred from ASIC to the agent is held in files with filenames in the form OUT_ss.nnn, where ss is the DIS identifier and nnn is the transmission number assigned by the DIS.

Refer to "Document Messages Specification" for details of the outbound data file contents.

7. FACILITIES FOR SOFTWARE PRODUCERS

7.1 Overview

This chapter describes the DIS facilities available to developers to help them debug their software.

Except for the special VT100 functions listed in the next section, these facilities are available only on test DIS systems.

7.2 Test DIS facilities

Two test DIS facilities are available for software suppliers use during testing:

♦   system id T1, named TESTCOMMS, provides communications test facilities by simulating line errors;

♦   system id T2, named TESTPGMS, is intended for testing of software.

The Austpac addresses for the above systems are provided elsewhere in the section titled "DIS Addresses".

The T1 DIS simulates a bad Telecom line. The DIS randomly inserts or changes characters in data packets, and randomly changes a CRC or Checksum character in AUTELS strings sent to agent systems.

This facility helps software producers test the behaviour of their software when communication conditions are poor. It allows more thorough testing of situations such as receipt of a 'NAK' in file transfer protocols.

7.3 Electronic Mail

A simple electronic mail facility has been introduced to improve communications between software producers and EDGE systems support staff.

Electronic mail is available on the T1 and T2 DIS facilities.

ASIC can send mail to all software producers, or to a single selected producer. Mail sent to developers is available as a normal file queued with other files waiting to be sent by the DIS.

Software producers can send mail to the ASIC systems team, but they cannot send it to a specific person. All electronic mail sent to ASIC is read only by the person responsible for communications problems. Developers should confine electronic mail to queries about the DIS specifications and problems with communications, or about bugs in the DIS software.

The names of files sent to developers are MAIL.nnn, where nnn is a sequence number. The sequence number is not necessarily consecutive for individual software producers.

Software producers send mail in files named MAIL* where * can be as many as twelve (12) legal file name characters (See the section titled "Software requirements").

If there is mail for a developer and no Transmission or Validation Reports, the following message will appear on the main menu screen:

```
You have mail
```

Mail files sent by software producers will be indicated by the following message preceding the associated filename:

```
**T02 Mail Posted**
```

7.4 VT100 test functions

Four functions for testing software are available during VT100 communications. These features are also available to agents, but with the exception of <Ctrl R>, agents are advised not to use them.

These functions are available only in conjunction with the DIS Main Menu and are accessed by sending a control character and pressing the Return key, as described below:

```
<Ctrl R><CR>
```

This option causes the current screen to be resent by the DIS. This is useful whenever data corruption in the communications line causes the screen to display strange characters, or if the screen is formatted incorrectly.

```
<Ctrl V><CR>
```

This option displays the current version number and date of release of the DIS software. This feature may be useful to software producers who are waiting for a software upgrade of the DIS.

```
<Ctrl B><CR>
```

This option switches the DIS Kermit protocol to 'basic' Kermit. Long packets or windowing are not used. This feature may be useful to software producers having difficulties with the Kermit protocol. It allows them to determine if the problem is associated with the advanced features of Kermit.

```
<Ctrl Y><CR>
```

This option causes the current password to expire. This enables software producers to test their packages without having to wait 30 days for the password to expire.

Appendix A. Error Messages

A.1 Modem error messages

During any operation where an `AT` command is issued, custom VT100 and AUTELS mode software must check the response.

For many AT commands the response should be `OK`.

For example:

AT command	Modem response
ATZ <CR>	OK

For these AT commands, the following error messages apply:

♦   If no response is received from the modem, display and log the following error message:

```
No response from modem (M01)
```

♦   If an invalid response is received, display and log the following error message:

```
Invalid response from modem (M02)
```

There are also other responses to AT commands to check, for example:

AT command	Modem response
AT&T1 <CR>	CONNECT 2400
ATDT 01924 <CR>	CONNECT 2400

If there is no response in a reasonable time limit (say 40 seconds), then display and log the following error message:

```
Unable to connect to Austpac modem (M03)
```

For some AT commands there is no response :

AT command	Modem response
AT&T6 <CR>	

A.2 Austpac clearing and error codes

When connected to Austpac, clearing codes and diagnostic messages may be sent to the agent's system. There are many error codes, but those most likely to occur are:

Code	Meaning
CLR INV 169	Invalid NUI
CLR ERR 169	Invalid NUI (on some PADS)
CLR NP 067	Invalid called address
CLR DER 000	Frame level of remote DTE disconnected
CLR NC nnn	Network congestion
CLR OCC nnn	No circuits available
ERR nnn	Unrecognised PAD request

When the agent's system is in unattended mode, Austpac messages must be logged.

AUTELS method software may replace Austpac error messages by more meaningful diagnostic messages such as:

Austpac error message	AUTELS error message
CLR INV 169 and CLR ERR 169	Austpac has rejected your NUI as invalid (A01)
CLR NP 067	The Austpac address of the DIS is incorrect (A02)
CLR DER 000	Australian Securities Commission DIS not operational. Try again later (A03)
CLR NC nnn	Austpac congestion. Try again later. If condition persists contact Austpac support on 008 088 898(A04)
CLR OCC nnn	The DIS addressed is fully loaded with other users. Try again later (A05)
For all other Austpac clearing causes (CLR XXX nnn)	Unexpected clearing cause <nnn>. If condition persists contact Austpac support on 008 815 558 (A06)
ERR nnn	Unrecognised PAD request (A07)

The Austpac error code and diagnostic message must be logged and/or displayed without change by custom VT100 and AUTELS method software. This is to assist ASIC and Austpac support personnel to diagnose the problem.

A.3 DIS Error Messages

The following are the error message codes and causes that are produced by the DIS:

```
D01 = Invalid user id or password
```

The user has attempted to log in using a user id that is not registered on the DIS, or has used a password that does not match the current password registered for that user id. This error can occur only at log-in.

```
D02 = This user id is in use by someone else
```

Two users have attempted to log in to the same DIS using the same user id (this is not allowed). This error can only occur at log-in.

```
D03 = Too many failed log in attempts, account LOCKED
```

Six (6) consecutive unsuccessful log-in attempts have occurred under that user id. The account has been locked, and the agent must contact ASIC to unlock it and resolve the problem that caused the invalid log-in attempts. This error can occur only on log-in when the account is actually locked.

```
D04 = ASIC file system problem
```

An internal software problem has occurred in the DIS. An agent seeing this message should immediately contact ASIC and report the problem. This error is unlikely to occur, but if it does occur, it is most likely because the DIS has lost access to the agent user profiles, with the result that no agent can log in or change password. This error can only occur at log-in or password change.

```
D05 = Access to this account is locked
```

The agent's account has been locked due to too many unsuccessful attempts to log in. The agent must contact ASIC to unlock the account and resolve the problem. This error can only occur at log-in.

```
D06 = Passwords do not match
```

May occur when an agent attempts to change a password. Either the old password does not match the current password in the DIS, or the two new passwords are not the same. This error can only occur when attempting to change the password.

```
D07 = ASIC software error
```

This error occurs when there is a fatal software error in the DIS software. It may occur at any time.

```
D08 = Protocol violation
```

Occurs when AUTELS method software sends an invalid response indicator.

```
D09 = No response
```

No response has been received from an agent's system. the DIS has timed out.

```
D10 = Transmission error
```

A transmission error has occurred while connected. This is most likely caused by an interruption in the transmission due to a communications failure, or a Kermit or ZModem protocol error.

```
D11 = TXID error
```

Some files were received by the DIS, but no TXID file was received.

```
D12 = Invalid NUA
```

An agent has attempted to log in, but the Austpac NUA does not match that stored in the DIS. There are two reasons for this: an Austpac NUA was used that is different from that registered or the NUA was incorrectly configured by ASIC. This error can only occur at log-in.

```
D13 = Checksum error
```

The DIS has detected a checksum error in an AUTELS response indicator, most likely due to data corruption. The agent's system should resend the response indicator. This error can occur after an AUTELS string is sent.

```
D14 = Password has been used before
```

This error may occur if an agent attempts to change a password, but uses a new password that has been used previously. This error can only occur when attempting to change the password.

```
D15 = Your password is invalid
```

This error may occur if an agent attempts to change a password, but the new password is invalid. An invalid password is one which does not obey the password rules specified in this manual - see paragraph 2.5 "Security" in the section titled "DIS password". This error can occur only at log-in. This error can only occur when attempting to change the password.

```
D16 = Parity error
```

An attempt has been made to log into the DIS using incorrect parity. This may be caused by a faulty Austpac modem or parity set incorrectly in the agents's software.

Appendix B. Example of Connection to DIS

The following is an example of a complete connection , (not including log-in), to the DIS.

Actions and responses in bold type should be logged.

Step	Action (input)	Response	Meaning of action/response
1	(delay 1 sec) **+++**	OK	Modem attention (modem connected)
–OR–	**ATH**<CR>	OK	Hang -up
1	**AT** <CR>	OK	Modem ready (modem not connected)
2	**ATZ**<CR>	OK	Initialise to known values
3	**ATB0**<CR>		Select V.22 bis
		OK	
5	**ATDT0,01924**<CR>		Dial Austpac 2400 bps service—tone dialling, requesting an external line from the local PABX
		CONNECT 2400	Modems are connected
		AUSTPAC mm nnn ppp	You are connected to an Austpac PAD *mmm* indicates each *nnn* indicates group *ppp* indicates line
6	**NABCDEF123XYZ- .EDGETST2**<CR>		command letter N followed by example NUI ABCDEF123XYZ followed by EDGE test 2 symbolic address
		<CR><LF>	Acknowledgment
		COM	PAD connected

These steps are followed directly by the log-in screen.

Attention: The Austpac call request requires a hyphen and full stop (-.) before the symbolic address—as shown in Step 6—or a hyphen alone before an X.121 numeric address. ASIC recommends that communications packages cater for both forms of address.

Appendix C. Kermit

Kermit was developed at Columbia University in the USA. The reference used within ASIC for this protocol is "KERMIT A File Transfer Protocol", Frank da Cruz, Digital Press, order number EY-6705E-DP, ISBN 0-932376-88-6.

Although the DIS version of Kermit runs with any other versions of Kermit, we recommend that your version should provide:

♦   The 3 byte checksum.

♦   The wildcard specification for sending files (*.* for MS DOS systems).

There are two other advanced Kermit capabilities that are recommended. These are Windowing and Long Packets. Windowing allows a number of data packets to be sent before an acknowledgment is required, while Long Packets allow more data to be included in each packet. Both can reduce file transmission times.

Long packets are restricted by the DIS to 1000 bytes. Standard Kermit packets are only 94 characters, but long packets can be up to 9024 characters. A limit of 1000 has been imposed by the DIS to achieve a reasonable balance between throughput and error recovery.

To support outbound annual statements and other outbound messages with appended .PDF files, outbound file transfers will be occur as binary transfers.

Kermit parameters

Parameter	Value
Control quote character	35 ASCII
Maximum packet length	1000
File type	ASCII or TEXT
Block check type	3 bytes
Window size	maximum allowed by your system

Appendix D. ZModem

ZModem was developed specifically to improve throughput for file transfers on X.25 packet switched networks. It is an 'optimistic' protocol in that the sender continues to send unless it receives an error indication from the receiver. Because the sender does not have to wait for an acknowledgment (as with Kermit), network turnaround delays are eliminated, but error recovery is slower than with windowing Kermit.

The ASIC reference for ZModem is "The ZMODEM Inter Application File Transfer Protocol", Chuck Forsberg, Omen Technology Inc, USA. This document, together with the source code, is available from electronic bulletin boards.

ZModem has a number of optional features outlined below which must be selected by agent software. Failure to set these options correctly can result in errors and deleted files.

Agents who expect to receive annual statements and other outbound messages with appended .PDF files should select binary transfer for receive. For outbound, receiver (client) should set ZCBIN in the ZF0 byte of the ZRINIT packet. Refer to Zmodem specs.

ZModem parameters

Parameter	Value
CRC	32 bits (if available)
Append to file	no
Delete file at end	no
Resume interrupted transfer	no
Send if newer/older	no
File type	ASCII or TEXT
Packet size	adjust to error rate or set to AUTO. Defaults to 512
Escape Control Characters	no

Appendix E. Automatic Protocol Detection

The DIS software automatically detects which file transfer protocol, Kermit or ZModem, the agent's system is using.

The DIS sends a probe packet and waits for a reply from the protocol started on the agent's system. The DIS detects the protocol in use by examining the packet received in response to the probe packet.

There are two types of probe packet: one for sending files to the DIS and one for receiving.

When the agent's system notifies the DIS that it intends to send documents, the DIS responds by sending a probe packet consisting of:

```
<Ctrl A># N3<CR><LF>
```

When the agent's system notifies the DIS that it intends to receive files. The DIS responds by sending a probe packet consisting of:

```
**<Ctrl X>B00000000000000<Ctrl A><CR><LF>
```

In either circumstance, no special action should be taken. The file transfer protocol started by the agent's system will indicate to the DIS whether Kermit or ZModem should be started.

Appendix F. Single Byte Checksum

The AUTELS protocol (refer to the section titled "AUTELS string formats") uses a single character arithmetic checksum to enable error detection on action indicator strings sent to the agent's system. It is identical to a Kermit type 1 checksum.

A block check is done on the characters between, but not including, the Header and the Chk character in the strings defined in the section titled "AUTELS String Formats".

Standard ASCII specifies a set of 7 bit codes, but most computers use 8 bits to store this information. The eighth bit is called the parity bit.

Bit	8	7	6	5	4	3	2	1
e.g.'B'		1	0	0	0	0	1	0
'C'		1	0	0	0	0	1	1
	parity	ASCII Character codes						

The following is the equation to calculate the checksum in
C notation:

```
Chk = ((Sum + ((Sum & 192)/64)) & 63) + 32
```

Sum is type integer and equals the arithmetic sum of the ASCII values of the characters between, but not including, the Header and the Chk character in the string. The parity bit for all characters must be 0 (not set).

Chk is type char.

The following paragraphs are an example of calculating a checksum.

♦   Using the following Type 1 action indicator string, (a fake one with an indicator of ABCDE) we will demonstrate how to calculate and use the checksum.

♦   Action indicator string = <Ctrl B>ABCDE0<CR>

♦   sum = A + B + C + D + E = 335 Decimal, which is the following in binary:

```
0000 0001 0100 1111
```

Although we are interested in obtaining a seven bit ASCII character value at the end of the calculation, it requires the use of integer types (16 bits). The examples of the calculation are thus shown as 16 bit values.

♦   Bits 7 and 8 of this value are then moved into a new register by ANDing 192 to the sum, for example (sum & 192)

		Binary														
	335	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1
AND	192	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
=	64	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

♦   This register is shifted right six places by dividing by 64, for example

```
((Sum & 192) /64):
```

		Binary														
	64	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
DIV	64	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
=	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

♦   This is added to the original sum, for example

```
(Sum +((Sum & 192)/64)):
```

		Binary														
	335	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1
+	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
=	336	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0

♦   Only bits 1 - 6 are required so other bits are masked out by ANDing this to 63 to obtain a six bit value, for example

```
((Sum + ((Sum & 192)/64)) & 63):
```

		Binary														
	336	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0
AND	63	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
=	16	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

♦   This is then converted to a printable character by adding 32, for example

```
((Sum + ((Sum & 192)/64)) & 63) + 32:
```

		Binary														
	16	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
+	32	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
=	48	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0

Chk = 48 Decimal   Which is the decimal value of ASCII character 0 (zero).

Chk = '0' ASCII

This value can be compared with the checksum character — the last character before `<CR>` — sent in the string.

For example, action indicator string =

```
<Ctrl B>ABCDE0<CR>
```

In this example the checksums match which means the string has been received without errors.

Appendix G. Other Austpac Services

Agents must have access to the Austpac Intelligent Network Server (AINS). This gives the agents additional Austpac services. One such service is to change their NUIs, an essential security feature.

Access to the AINS is described in "NUI Users Guide", 2nd Edition, published by Telecom Australia.

When providing support for agents, Austpac personnel will request agents to access AINS. All software packages must enable agents to access AINS to change their NUI. There are no the DIS specifications for this connection; for example, by means of a command, menu selection or manual dialing. However, this facility can easily be provided through VT100 mode software.

Austpac provides access to other service suppliers in addition to the DIS. You may wish to provide your clients access to these services as well. Details on other available services can be found in "Directory of Computer Based Services"*,* Telecom Australia.

There are no DIS specifications for implementing agent access to these other services.

Appendix H. Related Documents

H.1 Electronic Document Specifications

This document deals solely with mechanisms used to transfer information between agents and ASIC. It assumes that company documents transmitted to the DIS comply with the following specifications :

♦   EDGE Document Messages Specification, ASIC.

Software producers should also be aware of the terms and conditions set out in the following documents:

♦   Terms of Participation for EDGE Software Producers, ASIC

♦   Terms of Participation for EDGE Registered Agents, ASIC

Procedures for transmission and correction of electronic document files are described in:

♦   EDGE Registered Agents Guide, ASIC

ASIC may prepare other specifications and directions from time to time. They will be distributed to registered software developers.

H.2 Communications Standards

Communications software also requires compliance with the following communications industry standards:

♦   "KERMIT, A File Transfer Protocol", Frank da Cruz, Digital Press, order number EY-6705E-DP, ISBN 0-932376-88-6.

♦   "The ZMODEM Inter Application File Transfer Protocol", Chuck Forsberg, Omen Technology Inc. This document is not a publication but is available — together with the source code — from electronic bulletin boards.

♦   "VT100 Terminal Specifications", Digital Equipment Corp.

♦   Austpac specifications for X.25, X.28 and X.32 services.

The following documents are also important:

♦   NUI Users Guide — 2nd Edition , Telecom Australia

♦   Directory of Computer Based Services, Telecom Australia

♦   Technical Reference Guide - Character and Packet mode service (X.28,X.25), Telecom Australia

Appendix I. Where to get help

If you have problems while using these specifications, or if you discover errors or inconsistencies, please contact the EDGE System team as described below.

If you need more information about Austpac services, please call the Austpac Support Service listed below, or an Austpac service officer in your area.

I.1 Technical requirements

EDGE System Team   (02) 911 2708

I.2 Austpac service requirements

Austpac Support Service   (008) 088 898

Appendix J. Amendment History

Version 0.10.
released to software developers on 8/10/93 as a draft for discussion

Version 1.00
released 15/11/93 for Annual Returns pilot

changed maximum number of documents per transmission to 99
removed draft messages
added physical and symbolic EDGE addresses
added EDGE systems team contact details

Version 1.01
released 27 January, 1994 for Annual Returns pilot

Section 5.3 Autels String Formats - corrected wrong checksum characters in examples of Autels String Types 0 and 6.

Added further details about the invoice file.
Advised of temporary use of Mail facility to deliver invoice files during the Annual Return pilot.

Version 1.02
released 31 March 1994 for Annual Returns national release.

Removed advice of temporary use of Mail facility during Annual Return pilot.

Minor alterations to description of "reports waiting" option to cover invoice and outbound data files as well as the transmission and validation reports.

para 6.5 added

para 2.2 Hardware, Asynchronous communications port - "Attention" note added.

para 2.4 System abbreviations in filenames - T1, T2 apply to test transmission reports, TE for all other test files.

Version 1.03
released 14 October 1994

para 2.5 Security, subsection "DIS Password" - added note that lower case passwords will be forced to upper case by the DIS.

Appendix A.3 Error D15 - removed slightly incorrect description of password rules and replaced with a reference to password rules in para 2.5.

para 2.4 "Naming files sent by agents to the DIS" changed rule for reserved names to state that they will be accepted, but added warning that software supplier must manage files to avoid collisions. Rebuilt table of contents and index.

Version 1.04
released 12 July 1995

para 2.2 Hardware, added 9600 bps to accepted modem speeds, added 9600 Austpac dialup number to list of Austpac telephone numbers, and changed emphasis of spec to be compatibility with Austpac, not EDGE.

para 2.5 Security, subsection "DIS addresses" - added new Austpac symbolic address, and advised not to use numeric addresses.
-       removed sentence describing agents access to test - agents do not have access to test.

para 2.6 Service Continuity, changed unavailability management to say that from Novermber 1995, users should try alternate system if they cannot lodge.

Version 1.05
released 10 November 1998

Section 4.8 DIS Services, para Display Transmission Status, added note discouraging use of this as a polling mechanism.

Section 5.4 AUTELS State Tables, State 1:
-       added new "check status" Autels string FFFFF, plus notes on it's use for polling after the table.
-       fixed minor typos in table.

Version 1.06
released 1 July 2000

Change mention of ASC to ASIC.

Section 2.4 - Naming files sent to agents by the DIS
-       add SE for secondary mailbox

Section 2.4 - Invoice file reconcilliation
-       add reference to Document Messages Specification

Version 1.07
released 14 April 2002

Appendix C. Add detail for binary transfers

Appendix D. Add detail for binary transfers

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