



**IBM® Sterling Connect:Express®
for z/OS®**

Etebac3 User Guide

Version 4.3

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Chapter 1

This chapter describes the Etebac3 Protocol. Next chapters describe how to implement it with Sterling Connect:Express.

Etebac3 Protocol

Etebac3 is a file transfer protocol used by the French banking system (CFONB: *Comité Français d'Organisation et de Normalisation Bancaire*) to exchange electronic data with their customers. This protocol is running on X25 links. The specifications of this protocol were issued early in the 1970 years. Etebac3 was aimed to replace Etebac1 and Etebac2 which were running on BSC communications and it is itself being replaced by PeSIT and the extended secured PeSIT, called Etebac5.

Etebac3

The protocol is based on a transfer request card called 'Etebac3 Card' and some acknowledgment messages and codes. The Customer is always the initiator of the connection, and, generally, the Bank decides the format of the card.

The Etebac3 Card

The Etebac3 card is a 80 EBCDIC characters record with a limited number of defined fields. Positions 1 to 8 are defined, positions 9 to 80 are free. This means that any information can be sent and received in this card, depending on the bank specification.

Chapter 2 defines the Sterling Connect:Express default card and Chapter 3 defines how to support specific card formats: how to send it if you are acting as a Customer and how to receive it if you are acting as a Bank and you do not use the Sterling Connect:Express format.

The Etebac3 card specification is shown below:

Position	Value	Description
1	A R	Request for transmission Request for reception
2-4	Blank	Unused
5-8	4 numeric	The file record length (record format is fixed)
9-80	-	User field

Etebac3 Protocol

The Etebac3 protocol is very simple. No compression and no restart function are available. The figures below show the messages that are exchanged during a transmission from the Customer to the Bank ('A' Card), and during a transmission from the Bank to the Customer ('R' Card). The Customer always initiates the communication and sends the Etebac3 card.

Several transfers can be performed in the same network session. Only fixed record length files can be transferred with Etebac3.

Customer to Bank

The 'A' card provides the record size 'xxxx' and any information required by the bank. The OK, NOK, OKF and NOKF messages are 20 character strings. Some 'rrrr' return codes to send in the NOK messages are defined by the CFONB (See the Appendix) . Each record of the file is sent in one message.

Customer	Message	Bank
Establish connection	X25 call packet X25 Confirmation Packet	Accepts
Transfer request	'A xxxx bank info ' Card 'OK '/NOKrrrr '	Accepts/Rejects
Sends data	Data: 1 Message = 1 record, length = xxxx	Receives data
End of file	'FF' 'OK F '/NOKFrrrr '	Accepts/Rejects
Next card or close connection	X25 lib packet	

Bank to Customer

The 'R' card provides the record size 'xxxx' and any information required by the bank. The OK, NOK, FF, OKF and NOKF messages are 20 character strings. Some 'rrrr' return codes to send in the NOK messages are defined by the CFONB (See the Appendix). Each record of the file is sent in one message.

Customer	Message	Bank
Establish connection	X25 call packet	▶
	X25 Confirmation Packet	◀
Transfert request	'R xxxx bank info ' Card	▶
	'OK '/NOKrrrr '	◀
Receives data	Data	▶
	1 Message = 1 record, length = xxxx	◀
		◀
Accepts/Rejects	'FF ' '	▶
	'OK F '/NOKFrrrr '	◀
Next card or close connection	X25 lib packet	▶

Using Pad Access

The communications between the Customer and the Bank can be established through a PAD access. The PAD receives characters from the Customer workstation via the telephone network and builds X25 packets to send to the Bank server. The PAD waits for an indication to send the message.

The Pad supports 22 parameters that are accessible from the Customer software. Some of these parameters are used to determine different ways of indicating to the PAD that datas must be sent:

1. Sending a delimiter: PAD parameter number 3 = '1' is used to indicate that one character is used as an end of message delimiter. When receiving this character the PAD must stop adding characters and send the message. For example Parameter 3 = '1' means that the Carriage Return (<CR>) character is used. In this case all messages are added <CR> at the end: the Etebac3 card is 81 characters long, OK and NOK messages are 21 characters long and all record messages are xxxx + 1 characters long.
2. Using a Timer: PAD parameter 4 = '1' is used to indicate that, when the PAD does not receive data during a certain time, it must send the message that is currently being built. The timer is a multiple of 1/20 seconds, currently from 5/20 to 20/20 seconds.
3. Using a BREAK signal: PAD parameter 7 = '0' is used to indicate that a BREAK signal is used. This is made of a sequence of at least 50 bits set to '0', followed by 20 bits set to '1'.
4. Using the full packet technics: Parameter 14 is used to indicate that the PAD must send a packet, with the 'More Data Bit', when it is filled up, and use the ¼ second timer method for the last packet of the message.

Methods 2, 3 and 4 are transparent to Sterling Connect:Express as a server. Method 1 is supported but the MCH definition must indicate that Sterling Connect:Express will use the PAD inquiry request.

Chapter 2

This chapter describes how to implement the Etebac3 protocol with Sterling Connect:Express for z/OS. Next chapter explains how to support specific Etebac3 Cards syntax.

Refer to *Sterling Connect:Express for z/OS User Guide* for general information about implementing File transfers.

Implementing Etebac3 with Sterling Connect:Express

The Etebac3 protocol can be implemented in the same way as any protocol with Sterling Connect:Express. All functionalities provided by Sterling Connect:Express, such as flow controls, RACF controls, Generalized user exit and management facilities, are available. You have to define an Etebac3 partner with the type Etebac3 (TYPE = 3) and with the Etebac3 session table (SESSION PROT = 4). Sterling Connect:Express provides the Customer and the Bank functionalities. Although Etebac3 protocol specifies that the X25 links is used, you can also make tests with a TCP/IP link.

Defining an Etebac3 Partner

Depending on if you are acting as a Bank (you will receive calls from Customers) or a Customer (you will initiate connections to Banks), the partner definition process is different. On the Bank side you have to consider the reception of the Etebac3 card and decide which type of access control you require.

Defining an Etebac3 Bank

When you are acting as an Etebac3 'Customer', you have to define each Bank you are to communicate with. Next screen shows the Definition of an Etebac3 bank. The PARTNER TYPE is '3' and the SESSION PROT. is '4'. This partner definition supports X25 link only. This definition is for outbound calls: 3 simultaneous sessions are authorized for this partner. The DPCSID and DPCPSW ALIAS fields are set to a name and password required by the Bank. The address field is set to the Bank address.

```

TOM4200      PARTNER OF TOM4 TO UPDATE      (2/4)
OPTION =====>      -ENTER- : GO ON, -PF3- : CANCEL  X : EXIT
TYPE: ETEBAC3,ETEBAC3
MOD: USR0008 02/12/11 09:45:44      1
SYMBOLIC NAME      : MYBANK      DPCSID ALIAS      -> CUST01
TOM PASSWORD      => BANKPASS      DPCPSW ALIAS      -> MYPASS
INITIAL STATE      -> E      APM RECEPTION CLASS      -> A
RACF USER      -> MYBANK      RACF GROUP      -> -

PARTNER TYPE      => 3
SESSION PROT.NUM.-T. => 4 => 0      RSA-DES SECURITY T.      -> -
AUTOMATIC RESTART      -> NO

LINK TYPES      => X => -      ADJACENT PARTNER      -> -
EFF. TOTAL/IN/OUT => 003 -> 000 -> 003 FLOW CONTROL T.      SLD -> -

SNA: LUNAME => -      LOGMODE      -> -      LOGDATA      -> -      DISC -> N
X25: MCHMSC -> A      REM.ADDR. => 1234      LOC.ADDR.-> -
      CUG      -> -      UDF      -> -      CHARGE      -> 1
      FACILITIES      -> -
TCP: ADDR. => -      PASV => -      PORT      => -
      HOST      -> -      PROFILE      -> -
NOTE ->

```

Defining Etebac3 Customers

When you are acting as an Etebac3 'Bank', you will receive inbound connection requests from your Customers. First of all Sterling Connect:Express looks in its partners directory for an Etebac3 partner with the same network address. If no partner is found, the inbound call is rejected. On X25 link you can create one definition for each customer and control the X25 network address or use a 'BYPASS' system. To configure the 'BYPASS' system you define a unique partner definition on which all the calls received from Customers who are not defined in the directory are re-directed by Sterling Connect:Express.

Note: No 'BYPASS' system exists for TCP/IP. You must create all Customers definitions.

Using the X25BYPASET3 Card

If you want to use a generic partner name, without defining all your Customers in the Partner directory, define the X25BYPASET3 card. If you don't define this card, all possible Etebac3 Customers must be defined in the partner directory. If you define this card, you can also define some particular Customers in the partner's directory: these partners will have specific conditions such as number of simultaneous sessions, RACF Userid and address control.

The X25BYPASET3 card is set in the SYSX25 file. Use TSO/ISPF 3.6 option to update the SYSX25 file. Enter in the PARTNER NAME field the symbolic name you will use for managing Customer sessions. Enter the keyword 'X25BYPASET3' in the field 'REM. ADDR.'. Then enter 'I' in the option field.

Next figure shows the PARAMETERS OF SYSX25 LIST screen.

```

TOM4200      PARAMETERS OF SYSX25 LIST                CANCELLED          !
OPTION ==>
      E : EDIT MEMBER, I : INSERT NEW PARAMETERS, ? : INIT DSN

MONITOR ==> TOM4

DSN(MEMBER) ==> PSR&DEV.TOM3.SYSPRM(L4X25)                (SYSX25)

NEW PARAMETERS :
PARTNER ... ==> ETEBAC3                (SYMBOLIC NAME)
REM.ADDR. . ==> X25BYPASET3            (NUMBER/ 'X25BYPASET3-5/X25BYPASXPAD/* ' )
MCHSEL .... ==>
LOC.ADDR. . ==>
TAXATION .. ==>
CUG ..... ==>
UDF ..... ==>
FACILITIES. ==>

DATA ARE CHECKED WHEN 'F TOM,REF SYSX25' IS PERFORMED, SEE WTO OF THIS TOM.

      X EXIT, -PF3- END

```

When you enter 'I' in the option field, next screen is displayed: the new line has been inserted.

```

File Edit Confirm Menu Utilities Compilers Test Help
tyl-----
EDIT          PSR&DEV.TOM3.SYSPRM(L4X25) - 01.99          Columns 00001 00072
Command ==>                                          Scroll ==> CSR
***** ***** Top of Data *****
000001 *03/09/01 10:44 PSR0008 CSGB:
.I          ETEBAC3 X25BYPASET3
- - - - - 52 Line(s) not Displayed
***** ***** Bottom of Data *****

```

Press PF3, then ENTER to confirm.

The message below indicates that the SYSX25 file is being automatically updated.

COMMAND(S) SENT	: F TOM,REF SYSX25
-----------------	--------------------

TSO/ISPF Option 2.1.b shows the BYPAS you just created:

```

TOM4200      CONNECTION 'BYPASS'                NAMES INITIALIZED      !
OPTION ===> !

TOM4          ^-< 'COMMANDS' -PF3- END
CSGB ACTIVE   GLOBAL
-----< D DIRECTORY
!
! CONNECTION      PARTNER
V
- X25BYPASET5    -> -
- X25BYPASET3    -> ETEBAC3
- X25BYPASXPAD   -> -
- LU2BYPASS      -> -
- FTPBYPASS      -> -
  
```

The figure below shows the definition of the generic partner ETEBAC3: the Type is displayed under the option field. The PARTNER TYPE is '3' and the SESSION PROT. is '4'. This partner definition supports both X25 link and TCP/IP link. This definition is for inbound calls: 8 simultaneous sessions are authorized for this partner. No address control is performed (A star "*" is set in the address fields).

```

TOM4200      PARTNER OF TOM4 TO UPDATE          (2/4)
OPTION ===> -ENTER- : GO ON, -PF3- : CANCEL  X : EXIT
TYPE: ETEBAC3,ETEBAC3
MOD: USR0008 02/12/11 09:45:44                1
SYMBOLIC NAME      : ETEBAC3                  DPCSID ALIAS      -> -
TOM PASSWORD       => CUSTPASS                 DPCPSW ALIAS     -> -
INITIAL STATE      -> E                       APM RECEPTION CLASS -> A
RACF USER          -> ETEBAC3                 RACF GROUP       -> -

PARTNER TYPE          => 3
SESSION PROT.NUM.-T. => 4   => 0             RSA-DES SECURITY T. -> -
AUTOMATIC RESTART  -> NO

LINK TYPES           => M   => IX           ADJACENT PARTNER  -> -
EFF. TOTAL/IN/OUT   => 028 -> 028 -> 000 FLOW CONTROL T.  SLD -> -

SNA: LUNAME => -          LOGMODE  -> -          LOGDATA  -> -          DISC -> N
X25: MCHMSC -> A      REM.ADDR. => *          LOC.ADDR.-> -
      CUG    -> -      UDF        -> -          CHARGE   -> 1
      FACILITIES -> -

TCP: ADDR.   => *          PASV => -          PORT     => -
      HOST    -> -          PROFILE -> -

NOTE ->
  
```

If you want to activate the address control you have to define as many partners as the number of Customers, and specify the network address for each.

The screen below shows a Customer definition, with an address specified.

```

TOM4200      PARTNER OF TOM4 TO  UPDATE      (2/4)
OPTION ==>>          -ENTER- : GO ON, -PF3- : CANCEL  X : EXIT
TYPE: ETEBAC3,ETEBAC3
MOD: USR0008 02/12/11 09:45:44      1
SYMBOLIC NAME      : CUST01          DPCSID ALIAS      -> -
TOM PASSWORD       => CUST01          DPCPSW ALIAS      -> -
INITIAL STATE      -> E              APM RECEPTION CLASS  -> A
RACF USER          -> CUST01          RACF GROUP        -> -

PARTNER TYPE      => 3
SESSION PROT.NUM.-T. => 4 => 0      RSA-DES SECURITY T. -> -
AUTOMATIC RESTART  -> NO

LINK TYPES       => X => -          ADJACENT PARTNER  -> -
EFF. TOTAL/IN/OUT => 002 -> 002 -> 000 FLOW CONTROL T.  SLD -> -

SNA: LUNAME => -          LOGMODE  -> -          LOGDATA  ->-          DISC -> N
X25: MCHMSC -> A      REM.ADDR. => 1234          LOC.ADDR.-> -
      CUG -> -          UDF -> -          CHARGE -> 1
      FACILITIES -> -

TCP: ADDR. => -          PASV => -          PORT => -
      HOST -> -          PROFILE -> -

NOTE ->

```

Defining an Etebac3 File

The definition of a symbolic file that you want to transfer with Etebac3 protocol is the same than with any other protocol. No specific parameters are dedicated to Etebac3 but some values are required.

One restriction exists with Etebac3: you must provide the allocation parameters in the file definition of a file to receive. This is because the Etebac3 protocol does not provide the record format and the file space in the transfer request.

The screens below represent a typical file definition used with a generic partner name like the partner ETEBAC3 represented in *'Defining Etebac3 Customers'*.

The FILE ATTRIBUTES 2/5 screen shows the definition of a file for reception with the \$\$API\$\$ keyword in the SENDING PARTNER field. This keyword is required to accept the transfer with any Customer even if he is not defined in the partners directory. This is the case when you are using the X25BYPASET3 facility.

Note: If the sending partner field is set to \$\$ALL\$\$ (or '*') this means that all partners defined in the partners directory can send this file.

```

TOM4200----- FILES ATTRIBUTES (2/5) -----
OPTION ==>

SYMBOLIC NAME           : ETEBRECV   MODE: NORMAL

INIT STATE ..... ==> E           E: IN-SERVICE H: HOLD

DIRECTION ..... ==> R           T:TRANSMIT R:RECEIVE *:TRANS./REC.
RECEIVING PARTNER ..... ==> -     'NAME', FLIST, */$$$ALL$$ OR $$API$$
SENDING PARTNER ..... ==> $$API$$ 'NAME', FLIST, */$$$ALL$$ OR $$API$$

PRIORITY ..... ==> 1           0:URGENT 1:FAST 2:NORMAL 3:SLOW
DSN DEFINITION TYPE ... ==> D     D:DYNAMIC F:FIXED
ALLOCATION RULE ..... ==> 2       0:CREATE/REPLACE 1:PREALL. 2:CREATE
                                   3:EXIT A:APPLICATION SERVER

FILE TYPE ..... ==> S           S/M/P/PU/V/VU/UU/SU
PRESENTATION ..... ==> 04       COMPRESS.,DATA TYPE (01-24)
UNLOAD/RELOAD MEMBER .. ==> -     OPTIONNAL
SECURITY TABLE ..... ==> -     OPTIONNAL

OPTION : UPDATE                 UPDATE: 03/09/01 06:02 PSR0008
-ENTER- : NEXT SCREEN          -PF3- : CANCEL

```

The FILE ATTRIBUTES 3/5 screen shows the allocation parameters required. The LRECL field must be the same as the LRECL value set in the Etebac3 Card.

```

TOM4200----- FILES ATTRIBUTES (3/5) -----
OPTION ==>

SYMBOLIC NAME           : ETEBRECV   DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                                   SDB= Y
FILE NAME (DSNAME) .... ==> TST.ETEB.&PARTNID.&REQNUMB
GDG NUMBER ..... ==> -           +XX OR -XX

1 SYMBOLIC UNIT NAME .. ==> -           'UNITNAME'
  VOLUME NAMES ..... ==> -           -           -           -
2 SMS DATA-STOR-MGMT .. ==> -           -           -           -
DISPOSITION ..... ==> NEW           SHR/OLD/NEW
ALLOCATION TYPE ..... ==> TRK         CYL/TRK UB/KB/MB(?BYTES-SMSSDB)
SPACE PRIM.-SEC. .... ==> 0003 0001 1 TO 4 NUMERIC CHARACTERS
DIRECTORY BLOCKS ..... ==> -         IF PARTITIONED
RECORD FORMAT ..... ==> FB          F,FB,FBA,FBM,V,VB,VBA,VBM,VBS,VS,U
LRECL-BLKSIZE ..... ==> 00080 08000 1 TO 5 NUMERIC CHARACTERS
RETENTION (EXPDT/RETPD) ==> -       X'CCYYDDD',E'YYDDD'/R'NNNN'

Remote dsn/Pi99 ..... ==> -           <
TYPE/STRUCTURE/MODE FTP ==> - - -     EN/AN/I,F/R,B/C/S
UNIQUE ..... FTP ==> -           Yes/No
NOTE ==> -

```

Requesting an Etebac3 Transfer

Any transfer request with an Etebac3 partner will make Sterling Connect:Express perform an Etebac3 transfer. The transfer request can be made from the TSO/ISPF 4.1 interface or the transfer request utilities (P1B2PREQ or P1B2PRQ2) or from an application using the API (L0B2Z20). The figure below shows the transfer request screen. The EXTENSION field is set to 'NO': the Sterling Connect:Express Etebac3 card will be sent . Chapter 3 explains how to send a specific Etebac3 card format using the API field.

```
TOM4200      NORMAL TRANSFER
OPTION =====>                                CSGB

SUB-SYSTEM . =====> TOM4
FILE ..... =====> ETEBEMIS
DIRECTION .. ----> T          (T/R)
PARTNER .... ----> MYBANK

DSNAME .... ----> REC.PS.F080.SHORT

TYPE ..... ----> N          (N/H/I/K/U)
MODE ..... ----> I          (I/D)
LINK ..... ----> I          ( /C/I/S/T/X)
CLASS ..... ----> A          (A-Z/*)
PRIORITY ... ----> 1          (0-3)
MEMBER ..... ---->          (BFX)
CHECKING ... ----> YES        (YES/NO)
EXTENSION .. ----> NO        (YES/NO) ALIAS/ORG/DST/API-ETB3/SEC/RGR.
NOTE-> N

X EXIT, -ENTER- REQUEST, -PF1- HELP TRC, -PF3- END
```

The Sterling Connect:Express Etebac3 Card

When no specific configuration is set up, Sterling Connect:Express uses the Etebac3 Card format described below:

Position	Value	Description
1	'A' 'R'	Request for transmission Request for reception
2-4	Blank	Unused
5-8	4 numeric	The file record length (record format is fixed)
9-11	Blank	Unused
12-19	8 alphanum	Symbolic Filename
20-27	8 alphanum	Symbolic Partner Name
28-35	8 alphanum	Symbolic Password
36-44	Blank	Unused
45	'I'	Inquiry request: the remote Connect :Express will look for a transfer request prepared for the partner and the filename of the card
46-80	-	Unused

As a Bank, when receiving this Etebac3 card format, Sterling Connect:Express looks for the symbolic file name in its files directory, controls that the symbolic partner is authorized to transfer this file in the direction requested and that the password is valid. From the examples shown in *'Defining an Etebac3 Customer'* and *'Defining an Etebac3 File'* the following card would be expected:

A	0080	ETEBRECVCUST01	MYPASS
---	------	----------------	--------

As a Customer, when the transfer request is built with no specific parameter, Sterling Connect:Express sends this Etebac3 Card format. From the examples shown in *'Defining an Etebac3 Bank'* and *'Requesting an Etebac3 Transfer'*, the card would be:

A	0080	ETEBEMISCUST01	MYPASS
---	------	----------------	--------

Chapter 3 describes how to process specific cards formats.

Viewing Etebac3 Transfers

The main information for Etebac3 transfer is the Etebac3 card set in the API field. This field is displayed in the TRANSFER 3/3 screen (TSO/ISPF option 2.1.R), in the JOURNAL (DETAIL) screen and in the Sterling Connect:Express SYSLOG file when an incoming transfer request is rejected.

The TRANSFER 3/3 screen:

```
TOM4200      TRANSFERS 3/3          ID= 00004897 MODE= *          Row 1 of 1
OPTION ==>> !                               PAGE -> PAGE
                                           SYS: 03/09/02 05:56
TOM4          -< 'COMMANDS'  -PF3- RETURN  -PF7/8/10/11- SCROLL
                                           TOM: 2003/09/02 05:56:56
-----< X EXTENSION
!
! NUM.REQ.    FILE          RECORDS XFERED  SEND/REC.  INIT.K.    RESTARTS
!            PARM.MBR      DURATION      PERCENT-XFERED  REM.DUR.
!            FILE-K.      NETWORK-K.    NETWORK FLOW K./SECOND  (K.BYTES)
!            API
!
V
- 00004897   ETEBEMIS      -          -          57          -
-            -            -            -            ( 0 / 0 )
-            A 0080      ETEBEMISCUST01 MYPASS

*** END OF LIST
```

The JOURNAL (DETAILS) screen:

```
TOM4200      JOURNAL (DETAILS)
OPTION ==>>          B BROWSE -ENTER- HELP TRC/PRC -PF3- END
CSGB TOM4          PSR&DEV.TOM4.SYSJNL

FILE   : ETEBEMIS  DSN : REC.PS.F080.SHORT
USDF <-:
USDF ->:

REQUEST: 00004897 OF : PSR8REQ1    R.U./A.ID:          FACILITY : N
DIR.    : T        WITH: MYBANK    TYPE      : N        ACCESS   : O
ADDR.   : 127.000.000.001          TB-SEC.   : 00        TYPE-DATA: -
API.    : A 0080      ETEBEMISCUST01 MYPASS

LINK    : I        SPR      : 40    PART.TYPE: 3        TRF-ID   : X:000000
PRIO.   : 1        PPR      : 04    COMPRES.  : -        FILE-TYP.: S

TRC     : -        PRC      : 2108  SRC        : -        RESTARTS : -
REASON  : -        APM/EFF. : 01 / 01 CLASS     : A

BEG.   : 20 03/09/02 AT      : 05:50:35  END       : 03/09/02 AT      : 05:50:35
REQUEST: 03/09/02 AT      : 05:50:35  SYSJNL: 20 03/09/02 AT 10 : 05:50:35
DURAT.  : -        RECORDS: -        SEND/REC.: -
PROT.   : -        FILE    : -        FLOW/ S.  : -        <-K.CHAR. - K.BIT
```

The Transfer rejected message in the SYSLOG file:

```
:35 REQUEST 00004898 COMMUNICATION OPENED (I) WITH GFIPSR41 (I,127.000.000.001
:35 REQUEST 00004898 CARD OF SRC=0000 TRC=2010 PRC=2108
:35 REQUEST 00004898 API-CREATE: A 0080 CARD OF ANOTHER BANK THAN ME
:42 COMMUNICATION CLOSED (O) WITH: GFIPSR41
```

The card received does not have the Sterling Connect:Express format: the symbolic file field contains 'CARD OF '. TRC=2010 means that the symbolic file does not exist in the files directory of Sterling Connect:Express.

Chapter 3

This chapter describes how to support specific Etebac3 Card formats : how to send any card format when acting as a Customer and how to receive a proprietary card format when acting as a Bank.

Using Specific Etebac3 Card

If the Etebac3 card format is not the Connect :Express format, extended parameters and configuration are required.

Sending the Card

There are two methods for sending a specific Etebac3 card :

1. The 80 characters API field is available in any of the transfer request facilities.
2. The PARMETB3 file is used for storing Etebac3 cards skeletons.

The TSO/ISPF API Field

When acting as a Customer , you must provide the Etebac3 card format required by the Bank. You can use the TRANSFER EXTENSION fields as shown below:

```
TOM4200      NORMAL TRANSFER
OPTION =====>                                CSGB

SUB-SYSTEM . =====> TOM4
FILE ..... =====> ETEBEMIS
DIRECTION .. ----> T          (T/R)
PARTNER .... ----> MYBANK

DSNAME .... ----> REC.PS.F080.SHORT

TYPE ..... ----> N          (N/H/I/K/U)
MODE ..... ----> I          (I/D)
LINK ..... ----> I          ( /C/I/S/T/X)
CLASS ..... ----> A          (A-Z/*)
PRIORITY ... ----> 1         (0-3)
MEMBER ..... ---->          (BFX)
CHECKING ... ----> YES       (YES/NO)
EXTENSION .. ----> YES      (YES/NO) ALIAS/ORG/DST/API-ETB3/SEC/RGR.
NOTE-> N

X EXIT, -ENTER- REQUEST, -PF1- HELP TRC, -PF3- END
```

The EXTENSION option is set to 'YES' and the TRANSFER EXTENSION screen is displayed. The API field at the bottom can contain any alphanumeric characters, including low cases.

```

TOM4200      TRANSFER EXTENSION                NAMES INITIALIZED  !
OPTION ===>                                     CSGB

4XX/TEST/MAB

SUB-SYSTEM . : TOM4
FILE .....  : ETEBEMIS                        ENABLED
DIRECTION .. : T          (T/R)                <- *
PARTNER .... : MYBANK                          <- $$ALL$$ 40      ENABLED
DSN LOCAL .. : REC.PS.F080.SHORT                DYNAMIC
              <- REC.PS.F080.SHORT            - SEQUENTIAL
Rdsn/Pi99 .. --->                               < *1
              <- -
FTP T/S/M .. ---> ' ' ---> ' ' ---> ' ' ---> ' ' STOU ---> ' ' <- N
RACF-GROUP . ---> ' ' ' ' ' ' ' ' ' ' ' ' ' ' ('VALUE'/'BLANK')
Org.-Dest. . ---> < ---> < < *1
AND ONLY IF TOM IS UP :
SECURITY T. ---> ' ' ('VALUE'/'BLANK')
Alias id/psw ---> < ---> < *1
V----- S : DETAIL
'' API .... ---> A 0080here is the specific information for MYBANK
              < *1 ('VALUE'/'value'/'BLANK')
X EXIT, -ENTER- CONFIRM, -PF1- HELP TRC, -PF3- PREVIOUS

```

The Batch API Field

You can use the P1B2PRQ2 batch request utility: the API field value must be between quotes.

```

000037 SEND SFN=ETEBEMIS,                      SYMBOLIC FILE NAME
000038     SPN=MYBANK,                          SYMBOLIC PARTNER NAME
000039     TYP=N,                                REQUEST TYPE
000040     CLS=A,                                REQUEST CLASS
000041     PRT=1,                                REQUEST PRTY
000042     DSN=REC.PS.F080,
000043     API='A 0080here is the specific information for MYBANK'

```

If you need the 80 characters of the card you have to use the A48= and A34= keywords:

```

000024     A48='A 0080here is the specific information for MYBANK',
000025     A34='a very long card '

```

You can use the P1B2PREQ batch request utility: use the \$SYS method because the PARM field length is limited.

```

000005 //ETAPE02 EXEC PGM=P1B2PREQ,
000006 //          PARM=('SSN=TOM4','DIR=T','LNK=I',
000007 //          'SFN=$SYS','SPN=MYBANK',
000008 //          'API=A 0080here is the specific information for MYBANK')
000009 //*          -----
000010 //SYSUDUMP DD          SYSOUT=*
000011 //SYSR20 DD          SYSOUT=*
000012 //SYSIN DD *
000013 ETEBEMIS REC.PS.F080.SHORT

```

The API Field in the Journal Record

When the transfer is recorded in the Journal file the following screen shows the API field:

```

TOM4200          JOURNAL (DETAILS)
OPTION ===>          B BROWSE -ENTER- HELP TRC/PRC -PF3- END
CSGB TOM4          EXP.TOM4.SYSJNL

FILE   : ETEBEMIS DSN : PSR$REC.PS.F080.SHORT
USDF <-:
USDF ->:

REQUEST: 00004893 OF : PSR0008          R.U./A.ID:          FACILITY : N
DIR.   : T           WITH: MYBANK        TYPE      : N          ACCESS  : O
ADDR.  : 127.000.000.001          TB-SEC.   : 00          TYPE-DATA: -
API.   : A 0080here is the specific information for MYBANK

LINK   : I           SPR      : 40        PART.TYPE: 3          TRF-ID   : X:000000
PRIO.  : 1           PPR      : 04        COMPRES.  : -         FILE-TYP.: S

TRC    : -           PRC      : -         SRC       : -          RESTARTS : -
REASON : -           APM/EFF. : 01 / 01   CLASS     : A

BEG.   : 20 03/09/02 AT          : 03:28:39 END       : 03/09/02 AT          : 03:28:39
REQUEST: 03/09/02 AT          : 03:28:39 SYSJNL: 20 03/09/02 AT 10   : 03:28:39
DURAT. : -           RECORDS: -         SEND/REC. : -
PROT.  : -           FILE     : -         FLOW/ S.  : -         <-K.CHAR. - K.BIT

```

The PARMETB3 File

You can configure Sterling Connect:Express for sending the Etebac3 card from pre-defined skeletons. The PARMETB3 file must be declared in the APM JCL as shown below:

```

PARMETB3 DD          DISP=SHR,DSN=EXP.TOM400.PARMLIB(PRMETB3)

```

An example of PARMETB3 file is provided in the *PARMLIB* file: £PRMETB3. The following example is provided:

```

000085 TRF=(ETEBEMIS,MYBANK) ----> Transmit file ETEBEMIS to MYBANK
000086 *
000087 CRD=(13,3)=123
000088 (16,3)=456 RESULTING FORMAT, AFTER STERLING CONNECT:EXPRESS changes :
000089 (19,4)=&PSW
000090 (23,2)=F1 ----> A NNNN 123456PASSF1 D*AAMMJJ
000091 (27,1)=D (LRECL) ^^^^ ^^^^^^
000092 (28,1)=* &PSW &DAT
000093 (29,6)=&DAT

```

The keyword TRF= defines the transfer: the identification is done from the symbolic file name and the symbolic partner name. The keyword CRD= defines the structure of the card. Each line provides the position and the length of one field.

Only positions 9 to 80 are available as the 8 first characters are determined by the protocol and processed by Sterling Connect:Express ('A xxxx'). The addition of position and length cannot exceed 80. No blank line must be inserted between two field definitions. Character '*' in the first column indicates that the line is a comment line.

Keywords are available for adding dynamic values:

```

&FNM : symbolic file name
&PNM : symbolic partner name
&PSW : symbolic password
&DAT : current date
&TIM : current time

```

Receiving the Card

When acting as a Bank, a specific Etebac3 card must be processed and interpreted by a user exit before routing the demand to Sterling Connect:Express with the Sterling Connect:Express format.

The L1APMBNK User Exit

The Etebac3 User exit is called L1APMBNK. An empty Etebac3 exit is provided. The figure below shows how exits are placed in the process.

Customer	Message	Bank
Establish connection	X25 call packet	▶
	X25 Confirmation Packet	Accepts
Transfert request	'A xxxx bank info ' Card	▶ L1APMBNK, C
Beginning of transfer exit	'OK '/NOKrrrr '	Beginning of transfer exit Accepts/Rejects
Sends data	Data: 1 Message = 1 record, length = xxxx	▶ Middle of transfer exit ▶ Receives data ▶
End of file	'FF'	▶ End of transfer exit
End of transfer exit	'OK F '/NOKFrrrr '	Accepts/Reject s
Next card or close connection	X25 lib packet	▶ L1APMBNK, E

The L1APMBNK exit receives a parameter list with the Etebac3 card as shown next page. The structure D04FUSDF is provided in the *MACLIB* file. The exit is called when receiving the card (D04UFNC = D04CNX) and at the end of session (D04UFNC = D04END)

The Etebac3 card is set in the D04CARD field and all X25 network information is set in this structure. The user exit can process the card received according to the Bank specifications.

What the exit must do: The key process is to replace the card received in the D04CARD field by an Etebac3 card with the Sterling Connect:Express format. For example changing the 'A 0080here is the specific information for MYBANK' received by the 'A 0080 ETEBREC VETEBAC3CUSTPASS' string.

The exit must also set the return code to zero if the request is accepted and to a number from 1 to 91 if the transfer is rejected. The L1APMBNK return code 'xx' is displayed by Sterling Connect:Express in the TRC code TRC=46xx if xx is not null.

What the exit can do:

- The card received can be saved in the D04USER field.
- The Customer request can be controled from the card and from the network information.
- The OK and NOK message can be formatted: Sterling Connect:Express will send to the customer the message from the D04UMOK field

The D04FUSDF structure is propogated to the Beginning of transfer exit, end of transfer exit and middle of transfer exits.

000700	D04FUSDF	DSECT		
000800	*			
000900	D04FSTD	DS	0CL512	STANDARD DATA FIELD
001000	D04UFNC	DS	CL1	CALL TYPE FOR LIAPMBNK
001100	D04CNX	EQU	C'C'	CONNECTION DEMAND
001200	D04END	EQU	C'E'	END OF SESSION DEMAND
001300	D04UPRO	DS	CL1	PROTOCOL ETEBAC NUMBER
001400	D04UAPM	DS	XL1	APM NUMBER
001500	D04UEFF	DS	XL1	EFFECTOR NUMBER
001600	D04CARD	DS	CL80	RECEIVING ZONE
001700	D04UDIL	DS	CL1	DIAL NUMBER LENGTH
001800	D04UDIA	DS	CL15	DIAL NUMBER
001900	D04USAL	DS	CL1	SUB-ADDR LENGTH
002000	D04USAD	DS	CL15	SUB ADDRESS
002100	D04UDTL	DS	CL1	USER DATA FIELD LENGTH
002200	D04UDTF	DS	CL16	USER DATA FIELD
002300	D04UMOK	DS	CL20	OK/NOK MESSAGE
002400	D04UPRC	DS	CL4	USER RETURN CODE
002500	D04UTRC	DS	CL4	TOM RETURN CODE
001800	D04UDIA	DS	CL15	DIAL NUMBER
001900	D04USAL	DS	CL1	SUB-ADDR LENGTH
002000	D04USAD	DS	CL15	SUB ADDRESS
002100	D04UDTL	DS	CL1	USER DATA FIELD LENGTH
002200	D04UDTF	DS	CL16	USER DATA FIELD
002300	D04UMOK	DS	CL20	OK/NOK MESSAGE
002400	D04UPRC	DS	CL4	USER RETURN CODE
002500	D04UTRC	DS	CL4	TOM RETURN CODE
002600	D04PP0B	DS	XL1	PAD FIELD (MNP4) X'0D' IF ACTIV
002700	D04TXFC	DS	XL1	X25 TAX FACILITY FLAG
002800	D04TAD	EQU	X'01'	- PAYED BY CALLED
002900	D04PPCR	DS	XL1	PAD CARR.RETURN
003000	D04REQN	DS	XL4	REQUEST NUMBER
003100	D04UFIL	DS	CL88	FUTURE USE
003200	D04USER	DS	CL256	USER COMMUNICATION AREA

Note: Refer to the Sterling Connect:Express for z/OS Administration Guide for implementing user exits.No Connection exits (TSO/ISPF 3.3.CNT) and Selection exits (TSO/ISPF 3.3.SRT) are available with Etebac3 transfers. The Journal exit is available with Etebac3 transfers.

Chapter 4

Etebac3 Return Codes

The Etebac3 protocol provides a list of return codes: these codes are displayed by Sterling Connect:Express in the PRC= field. The table below shows the list of Etebac3 Return codes as defined by the CFONB. When Sterling Connect:Express issues an Etebac3 code, it may associate one or several possible Sterling Connect:Express reason code (TRC=).

PRC Code	Description	TRC Code
2100	Invalid Card length	1101
2102	Invalid transfer direction	1501
2104	Invalid Customer identification	
2106	Invalid password	
2108	Invalid file or application type	2010, 2037, 2028
2110	Invalid record length	1502, 3011,3092
2112	Invalid file date	
2114	Invalid file sequence or version number	
2116	File or application type incompatible with the transfer direction	
2118	Parameter card not recognized	
2120	Invalid bank code	
2122	Miscellaneous error detected in the parameter card	
2199	Miscellaneous error	
2200	Unknown Customer	
2202	Invalid password	
2204	Requestor taxation mode rejected	
2206	The Customer is not authorized for the file type or the application	
2208	Invalid calling number	
2210	Transmission request forbidden	
2212	Reception request forbidden	
2214	Access denied after several unsuccessful login	
2300	Service is closed	2061
2302	Transmission request temporarily disabled	
2304	Reception request temporarily disabled	
2308	Service no longer available	
2310	Service not yet available	
2400	File unavailable	
2402	File already requested	

PRC Code	Description	TRC Code
2404	No file this day for this application	
2406	Date requested too old	
2420	File already received	
3100	Request is too late: retry later	
3102	Transfer number requested	
3104	At least one file is available for this application	
3106	At least one file is available for another application	

Sterling Connect:Express issues its own codes in the PRC= field:

PRC Code	Description	TRC Code
000B	Invalid field length: xx = 02 : OK or NOK message xx = 03 : FF message xx = 04 : data xx = 05 : OK message xx = 06 : OKF message	11xx
2102 2110	Invalid field value: xx = 01 : the first character of the card is not 'A' or 'R' xx = 02 : Le record length field is not numeric	15xx
000A	Allocation error	3001
000A	Read open error	3003
000A	Write open error	3004
000A	Read error	3005
000A	Write error	3008
2110	The record length is different from the length defined in the file definition	3011
2110	The record length is different from the length set in the card	3092
000A	SYSLIB open error	6002
000A	PARMETB3 syntax error	6003
0009	Begin of transfer exit error: xx = exit return code (from 01 to 91)	40xx
0009	Middle of transfer exit error: l = exit number (1, 2 or 3), xx = exit return code (from 01 to 91)	4ixx
0009	L1APMBNK exit error: xx = exit return code (from 01 to 91)	46xx
0009	End of transfer exit error: xx = exit return code (from 01 to 91)	49xx

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