
RcPAX Network System

Test Answer Back from Network (TESTABN)

Installation and Operating Guide

Keywords:

RcPAX, RC5000 Network Switch, TESTABN.

Abstract:

This manual contains detailed information on how to load, configure and operate the TESTABN software in an RC5000 Network Switch.

Date:

December 1991

Author:

Ole Bromose

PN: 99001414

Copyright

Copyright © 1991 RC International (Regnecentralen a/s) A/S Reg.no. 62 420

All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise without the prior written permission of RC International, Lautrupbjerg 1, DK-2750 Ballerup, Denmark.

Disclaimer

RC International makes no representations or warranties with respect to the contents of this publication and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Furthermore, RC International reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of RC International to notify any person of such revision or changes.

Table of Contents

1. Introduction	1
1.1. Purpose	1
1.2. Scope	1
1.3. History	1
1.4. Structure	2
1.5. Using this Guide	2
1.5.1. Installation of the TESTABN software entity in NMC	2
1.5.2. Installation of TESTABN software component in a Node	3
1.5.3. Operation of the TESTABN entity	3
1.6. Conventions	3
2. General Description	5
2.1. Conversational Mode (mode 0)	5
2.2. Fixed Functional Modes	6
3. Requirements	7
3.1. Software Requirements	7
3.2. Hardware Requirements	8
3.3. Storage Requirements	8
3.4. Network Requirements	8
4. Definition in NMC	9
4.1. EM Identity	9
4.1.1. EM Class Name	9
4.1.2. EM Type	9
4.1.3. Software Component Classification	9
4.2. Creator Process Name	9
4.3. Event Mask Definition	9
4.4. Initial Event Mask	10
4.5. DES-FILE	10
5. Definition in LSM/NCP Group	11
5.1. Initial Event Mask	11
5.2. Treatment Category	11
6. Definition in a Node	13
6.1. EM Incarnation	13
6.2. Initial Event Mask	13
6.3. Load File Description	13

7. Configuration	15
8. Normal Operation	19
8.1. EM Operations	19
8.1.1. Set network identification in info	19
8.1.2. Set net news lines in info	19
8.1.3. Change functional mode	19
8.2. Statistical information	20
8.2.1. Get TESTABN Survey	20
8.2.2. Get TESTABN Stream Survey	20
8.2.3. Get Functional Mode	21
8.3. Close down of TESTABN Entity	21
9. Error Operation	23
9.1. Handling of Exceptions	23
9.2. Handling of Serious Events	23
9.2.1. Trace event	24
9.2.2. Events Lost	24
9.3. Handling of Other Error Situations	24
10. Guidelines for Error Reporting	25
11. References	27
12. Exception Codes	29
13. Trace Codes	31
14. TESTABN EM-Summary	33
14.1. Requests	33
14.2. Monitoring operations	33
14.3. Events	34

1. Introduction

1. 1. Purpose

This guide shall enable the operator to define, configure, install and operate the TESTABN software entity in an RcPAX network node.

This guide is intended for RcPAX NMC operators.

It is assumed that the reader is familiar with the RcPAX Data Transmission System and the RC5000 Network Switch to the extent of ref. 1-2.

1. 2. Scope

The scope of this guide is the RcPAX NMC operations (NMC database definitions, NMC on-line activities, EM operations etc.), which are needed to configure, install and operate the TESTABN software entity.

The following basic and mandatory NMC installation activities for the TESTABN entity are not described in this guide, but they must be executed, before you can configure, install and operate the TESTABN entity in a RcPAX node:

- 1) Enter the load file components of the TESTABN software component into appropriate load file libraries.
- 2) Install the entire DES-FILE of the TESTABN software component in the NMC database by means of the NMC batch program "desload".

1. 3. History

Date	Version	Change description
1991-10-15	1.00	First version covering ver.3.4 of the TESTABN SOFTWARE COMPONENT

All changes and updates to this guide result in a new version of the guide.

When a new version of the software is released, the version number in the guide title and in the page header must be updated along with this guide history.

1. 4. Structure

Chapter 2: General Description

Contains a general description of the functions of the TESTABN entity and how it interacts with other RcPAX software entities.

Chapter 3: Requirements

Describes the software and hardware requirements which must be satisfied by the RcPAX node, in which the TESTABN entity is installed.

Chapter 4: Definition in NMC

Describes all NMC-operations, which must be performed in order to define the TESTABN entity at a general NMC-level, i.e. operations which are independent of nodes and groups of nodes.

Chapter 5: Definition in LSM/NCP group

Describes all NMC operations, which must be performed in order to define the TESTABN entity in an LSM/NCP group in NMC.

Chapter 6: Definition in a Node

Describes all NMC operations, which must be performed in order to define the TESTABN entity in a specific RcPAX node.

Chapter 7: Configuration

Describes the initial configuration and initialization of the TESTABN entity.

Chapter 8: Normal Operation

Describes how the TESTABN entity should be operated in normal situations.

Chapter 9: Error Operation

Describes how the TESTABN entity should be operated in error situations.

Chapter 10: Guidelines for Error Reporting

Describes which information could be collected, when an error is reported.

Chapter 11: References

Chapter 12 : Exception codes

Chapter 13: Trace codes

Chapter 14: TESTABN EM-SUMMARY

1. 5. Using this Guide

1. 5. 1. Installation of the TESTABN software entity in NMC

Install the object code for the TESTABN software component in the NMC as described in the packet description.

Check the name in the NMC load file description.

Check that the files fulfilling the software requirements in chapter 3 are available.

Follow the instructions in chapter 4.

Follow the instructions in chapter 5.

1. 5. 2. Installation of TESTABN software component in a Node

The present version (3.4) of the TESTABN software component can only be installed in an RC5000 Network Switch.

Check that the installation as described in section 1.5.1 is carried out.

Create a suitable configuration request-set following the guidelines in chapter 7. The request-set could usually be created by modifying the request-set described in chapter 7.

Follow the instructions in chapter 6.

1. 5. 3. Operation of the TESTABN entity

Follow the instructions in chapter 8.

In case of troubles use chapter 9 together with chapter 12 and 13 to solve the problem.

If no solution is found follow the instructions in chapter 10 to report the error.

1. 6. Conventions

Reference to an EM operation is stated as:

(XXX,Y,ZZ): where XXX is the EM name, Y is the operation type (a = answer, e = event, r = request) and ZZ is the operation number.

Reference to the EM-request number 24 for the TESTABN entity will have the format (TESTABN,r,24).



2. General Description

The TESTABN (TEST Answer Back from Network) software entity implements a test DTE to the network user.

The TESTABN can be operated in a number of functional modes determined by EM operation 24 (Change Functional Mode):

Mode	Value
Conversational mode	0
Echo test mode	1
Black hole test	2
Alphabet test lines	3
Character test packets	4
Net News instead of test line	5
Echo test mode (no interrupt packets)	21
Black hole test "	22
Alphabet test lines "	23
Character test packets "	24

As the name "Conversational Mode" implies, functional mode 0 assumes that the remote user calls TESTABN via an RcPAD or other equipment allowing character stream based access.

In this mode the TESTABN entity will send a selection menu to the user when connecting the call, and expect the user to select a menu item. The menu is described later in this chapter.

Functional modes other than 0 are non-conversational, i.e. the test selected by the functional mode is initiated as soon as the TESTABN detects an incoming call.

The functional modes 1-4 can be interrupted by the user by an interrupt packet or a data packet containing the text "INT" or "int". In this case TESTABN will clear the call.

Functional modes 21-24 can only be cleared by the user.

2. 1. Conversational Mode (mode 0)

After accepting the call in conversational mode the TESTABN will send the selection menu to the remote user. This menu is shown below:

Please select test (a,b,c,e,h,i,j) 'h' for help?

The user can select a test from the menu by typing one of the letters indicated between the parantheses.

Each letter indicates a test, and the letters can be typed in either lower or upper case.

When the selection indicates a test function the selection can be followed by one or two parameters. The first parameter is a repetition count for the test, and the second parameter depends on the selected test.

The letter 'h' will give the help-menu as shown below:

911025.140032 RcPAX

help text:

testabn version.3.4

Select among following possible tests:

- a -- continous sending of test text sequences (4 lines, 1 packet)
- b -- 'black hole test' packets is continously received and discarded
- c -- continous sending of iso char value 126 (128 char in every packet) or iso char given as parameter.
- e -- echo received packet back
- 'l' as parameter echoes received line back with 'lf' insertion
- h -- display of help menu (1 line per packet)
- i -- display of RcPAX information
- l -- logoff initiated from RcPAX test

A number as first parameter after selection of one of the active tests indicate the repetition factor, (default repetitive factor is eight), maximum repetitive factor is 999, zero indicates infinite repetition).

An interrupt packet received stops continous test and return to test selection (the three char 'int' is interpreted as an interrupt packet).

Parameters to a command are given as numbers or letters in the same input

line Multiple parameters are separated by a space or comma char.

2. 2. Fixed Functional Modes

In the fixed functional modes, i.e. mode is nonzero, a test selected by a EM-operation is started immediately as soon as the remote user connects to the TESTABN entity.

Some of the functions in the fixed modes can be interrupted by the user sending an interrupt packet or a packet containing the 3 letters 'INT' (or 'int'). In this case the TESTABN will clear the call.

In other tests only the remote user can clear the call.

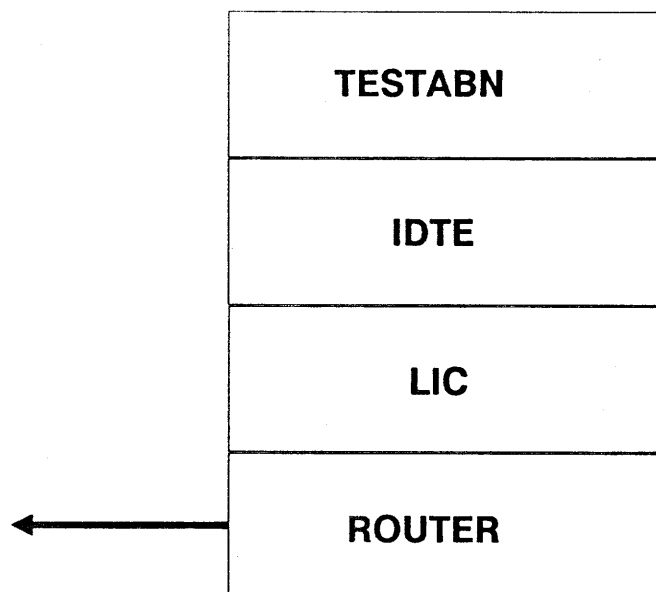
The fixed test functional mode is set by an EM-operation. Functional mode 3, 5 and 23 may involve network identification initialization or net news initialization. Functional values above 20 are unable to handle interrupt packets.

3. Requirements

3. 1. Software Requirements

In this section it is stated which other software components must be installed in a RcPAX node together with the TESTABN entity.

The general requirements for the TESTABN entity are that the IDTE must run in the node, and fig. 1 shows how the TESTABN software entity is located on top of the IDTE (Internal DTE) and the LIC in an RcPAX node.



If the LSM/NCP is already running in the node, the IDTE and LIC software entities are already present and the only thing to do is to start a new incarnation of IDTE and LIC. Otherwise the IDTE and LIC software components must be loaded in the node.

Further, the ROUTER entity must be present in the node.

It should be noted that the TESTABN also could reside upon the XDTE (eXternal DTE) instead of the IDTE. However, all descriptions and examples in this document will assume that the IDTE is used.

3. 2. Hardware Requirements

Any node in an RcPAX network containing enough memory for the software entities as described in the previous section, will allow the TESTABN to be created and started.

3. 3. Storage Requirements

The TESTABN entity (ver. 3.3) requires 19854 bytes of storage plus a stack of (4659) bytes.

The amount of heap used by TESTABN is: $(134 * \text{no. of streams})$ bytes

The size of the runtime stack is obtained from the default create-size calculated by the compiler.

3. 4. Network Requirements

The TESTABN entity has no requirements to other network nodes.

4. Definition in NMC

This chapter describes all NMC operations, which must be performed in order to define the TESTABN software component in NMC, at a general NMC level. These definitions should only be performed once for an NMC, i.e. they apply to the software component as such and are independent of nodes and groups.

4. 1. EM Identity

4. 1. 1. EM Class Name

The TESTABN entity has been defined with Class: paxnet.

4. 1. 2. EM Type

This section defines the EM Type Name and Number of the TESTABN entity to be defined in the NMC database by means of the NMC "typ" on-line activity.

<u>Entity Name</u>	<u>EM Number</u>
TESTABN	88

4. 1. 3. Software Component Classification

The TESTABN Software Component is classified as "public".

4. 2. Creator Process Name

The creator-process (father) of the TESTABN entity is: PAXOPSYS.

4. 3. Event Mask Definition

This section defines the correspondence between events and the individual bits in the old 16-bit event mask, as defined with the "eve" NMC on-line activity. Bit 1 is the lsb.

Bit	Event
1	Event lost
2	Exception event
3	Trace event
4	Snoop event
5	Unassigned
6	Stream reset event (TESTABN, e,39) Packet lost event (TESTABN, e,43) DTE restart event (TESTABN, e, 47) Datagram received event (TESTABN, e,51)
7	Connect stream event (TESTABN, e, 31) Stream cleared event (TESTABN, e, 35)
8	Connect last stream event (TESTABN, e, 27)
9	Unassigned
-	-
-	-
16	Unassigned

4. 4. Initial Event Mask

The recommended initial event mask for the TESTABN entity as specified in the DES-file is as follows:

Update mask	11111111 11111111
Value mask	00000000 00100000

This enables the following events:

- Stream reset (39)
- Packet lost (43)
- DTE restart (47)
- Datagram received (51)

4. 5. DES-FILE

The description of the EM operations is included in the NMC database by installing the DES-FILE for the TESTABN entity.

The EM operations for the TESTABN entity are described in ref. 3.

The installed DES-file can be inspected by using the "des" on-line utility.

5. Definition in LSM/NCP Group

This chapter describes all NMC operations, which must be performed in order to define the TESTABN software component in an LSM/NCP group in NMC. These operations must be performed once for each LSM/NCP group, in which the TESTABN software component should be defined.

Before you make the NMC definitions at LSM/NCP group level, which are described in this chapter, you must have made the NMC definitions for the TESTABN component at a general NMC level as described in chapter 4.

5. 1. Initial Event Mask

This section specifies the recommended value for the initial event bit mask for the TESTABN entity at the LSM group level.

The individual bits are defined in the database using the NMC "event mask" (MAS) on-line activity.

The same initial event mask as for the NMC level is recommended for the LSM group level, i.e. the event bit mask specified in section 4.4:

Initial Event Mask: 00000000 00100000

5. 2. Treatment Category

For each group containing TESTABN software components, the treatment category and log handling shall be defined for each EM event by using the "not" NMC on-line activity.

The INITIAL LOG and ACTUAL LOG are identical and shall be set ON for all events.

The INITIAL TRC and ACTUAL TRC are identical and shall be set so that the following events are handled as alarm notifications:

exception event (254)
events lost event (255)

Using the RcPAX convention for treatment categories this means that the following treatment categories should be defined:

27	Connect last stream event	00000000 00000000 00000001
31	Connect stream event	00000000 00000000 00000001
35	Stream cleared event	00000000 00000000 00000001
39	Stream reset event	00000000 00000000 00000001
43	Packet lost event	00000000 00000000 00000001
47	DTE restart event	00000000 00000000 00000001
51	Datagram received event	00000000 00000000 00000001
254	Exception event	00000010 00000000 00000000
255	Event lost	00000010 00000000 00000000

6. Definition in a Node

This chapter describes all NMC operations, which must be performed in order to define the TESTABN software component in a RcPAX node in NMC. These operations must be performed once per node, into which the TESTABN software component should be installed.

It is assumed that the definitions described in chapter 4 and 5 have already been done.

In order to perform the physical installation of the TESTABN software component in the node in question, and start/initialize the TESTABN software component in that node, the node must be reloaded from NMC (after the TESTABN software component has been defined in that node in NMC). The reload of the node is done by means of the NMC on-line activity "In-clude Component" (INCO).

6. 1. EM Incarnation

The recommended value of the incarnation number of the EM of the TESTABN is 83, which is also the recommended value for the incarnation number of the underlying IDTE.

The EM incarnation number of a TESTABN software component shall be defined using the "inc" NMC on-line activity.

6. 2. Initial Event Mask

The recommended value of the initial event mask at node and entity level is identical to the recommended value for the initial event mask on the NMC and LSM group level as specified in section 4.4 and 5.1.

The initial event mask EM of a TESTABN software component shall be defined using the "inc" NMC on-line activity.

6. 3. Load File Description

The TESTABN software component is contained in the load-file "plib2".

The load file description defines the load files and the sequence in which they are loaded in the node whenever:

- the node is down-line loaded from the NMC either automatically or by using the "inco" on-line activity.

- the node's winchester disk is filled using the "wd-fill" function of the "inco" on-line activity.

The RC5000 Operating System (SW50020) and RcPAX Operating System (SW51010) must be loaded before load of TESTABN.

7. Configuration

This chapter describes how the TESTABN entity can be configured by means of EM operations.

The following example shows how to create and start the IDTE and TESTABN in a node.

Req. no. 1 (idte): start idte, 1

FIELD-NO	EXPLANATION	VALUE
1	Start IDTE as family 2 proc.	100
2	Process name of IDTE	idte
3	LCP ident, incarnation number	83
4	LCP ident,module type of IDTE	14
5	Stack size (0 = default)	0
6	LIC LCP ident, module type	12
7	IDTEACCOUNT LCP ident, "-"	129
8	X.121 DCC. (0: default addr.)	0
9	X.121 network number	0
10	Own PAXNET net no. (org net)	0
11	Own PAXNET reg. no. (org reg)	0
12	Own PAXNET node no.(org node)	0
13	Own LIC extention address	3083
14	Max no. of logical channels	15
15	Number of PVC's.	0
16	Number of SVC's.	15
17	Number of 1. logical channel	1
18	Max credit on a LIC	4
19	Dedic input return (0 = no)	0
20	Incoming call barred (0 = no)	0
21	Outgoing call barred (0 = no)	0
22	PAD func. (0:x.25, 1:PAD)	0
23	Max allowed pac size (0 = def.)	0
24	Max allowed w size (0 = def.)	0
25	Check on user cause	0
26	Scc incarnation number	82
27	Scc assignment	0
28	TAKE CARE: NUI-TA to user :	0
29	Ic" per internal lic buffer	0
30	Header buffers in LIC	0
31	Dummy	

Req. no. 2 (idte): Set default packet size, 60

FIELD-NO	EXPLANATION	VALUE
1	size to DTE (2**x)	: 7
2	size from DTE (2**x)	: 7

Req. no. 3 (testabn): create & start testabn, 1

FIELD-NO	EXPLANATION	VALUE
1	run family 2	: 100
2	process name	: testabn
3	LCP ident, incarnation number	: 83
4	LCP ident, module type	: 88
5	stack size	: 0
6	max streams	: 15
7	dte name	: idte
8	dte incarnation number	: 83

Req. no. 4 (testabn): set new netid, 8

FIELD-NO	EXPLANATION	VALUE
1	new net dnic	: 2043
2	new net version	: 1984
3	new net name	: RC International
4	new net site	: test19
5	new net operator	:

Req. no. 5 (ats): add access port to group, 240

FIELD-NO	EXPLANATION	VALUE
1	group (PNIC)	: 3920
2	port (extension)	: 83
3	status	: 5

Req. no. 6 (ats): define ixi address.(text), 64

FIELD-NO	EXPLANATION	VALUE
1	dis operation	: 1
2	ixi country code	: 39
3	ixi LNNNNNNNN	: 70000019
4	private network code (PNIC)	: 3920
5	length of private address	: 14
6	private address value	: 20430801193083

Req. no. 7 (idte): set event bit mask, 4

FIELD-NO	EXPLANATION	VALUE
1	bits to be updated	: 11111111 11111111
2	new values	: 11110011 01111111
SET NAME : tabntest19		FINISHED

The TESTABN and IDTE should normally be created with incarnation number 83, and the incarnation number is used as extension in the private address. The IDTE is configured with 15 streams, which means that there can be at most 15 concurrent calls to the TESTABN. For further information on configuration of the IDTE, see ref. 4.

Request no. 2 starts the TESTABN software component as a Midi Family process at incarnation 83, which is the same as the incarnation of the IDTE. "Max streams" is set to 15, the same as "Max. no. of logical channels" in request 1.

Request no. 4 sets the information for the TESTABN Information Picture ordered by typing "i" at the help menu:

911023.111001 RC International
Network information:

```

Net name                :RcPAX
Net operator             :batman
Test site                :bahama
DNIC                     :4711
CCITT version            :1984
Non standard network specific diagnostics:
Decimal diagnostics
  128 Originated from network management center
  129 Lack of network resources
  251 Module busy on all communication streams
  
```

No news from
Network Management Center

Request no 5 defines extension 83 to be a member of the group labeled by PNIC = 3920. "Status" should always be set to 5 (= active).

Request no. 6 defines the IXI address and the private address of the TESTABN. These requests are of course only mandatory if address translation is used.

The initial functional mode is 0 (conversational mode). If any other mode is wanted, (TESTABN,r,24) can be used to select a new functional mode.

8. Normal Operation

This chapter describes how the TESTABN entity should be operated in normal situations after installation and configuration.

8. 1. EM Operations

The EM operations for operating the TESTABN entity are described in the following sections.

8. 1. 1. Set network identification in info

With this request the following information can be set:

(TESTABN,r,8):

- The DNIC of the network
- The CCITT version (i.e. year of the recommendation)
- The name identifying the network
- The site of the network managing center in charge
- The name of the company operating the network

8. 1. 2. Set net news lines in info

(TESTABN,r,12):

Insert the two supplied lines of text into the information picture. The request can be issued at any time after the component is started.

8. 1. 3. Change functional mode

(TESTABN,r,24):

The functional mode can be changed by this request. See chapter 5 and ref. 3 for a detailed description.

8. 2. Statistical information

Statistical information from a TESTABN entity is available through the following operations :

8. 2. 1. Get TESTABN Survey (TESTABN,r,6)

The information returned includes:

- Number of currently active streams, i.e. the number of remote users currently connected to the TESTABN.
- Number of free streams.
- The number of calls made by remote users including the currently active streams, if any.
- The number of calls to the last stream, indicating how many times the TESTABN entity has been busy.

8. 2. 2. Get TESTABN Stream Survey (TESTABN,r,10)

The information returned for the selected stream includes:

- The number of the chosen stream
- Number of calls to this stream
- X.121 address of latest user
- The state of the stream:
 - 0. Free.
 - 1. Call accept state. Wait for acknowledge on accept incoming call.
 - 2. Mode select state. Send select menu, wait data to select test.
 - 3. Wait mode select state. Wait for a buffer to send the menu.
 - 4. Perform test state. Data transfer state.
 - 5. Clear req. state. Waiting for acknowledge on clear request.
- Test state.

If the stream is active in a test, this value designates the test performed, otherwise it is the latest test performed. The possible values are:

- 0. Logout state. Logout from the remote user.
- 1. Echo test state. Echo input back.
- 2. Echo line test state. Echo a line back with LF insertion.
- 3. Info test state. Print information picture.
- 4. Help test state. Print help menu.
- 5. Black hole test. Read and discard all input.
- 6. Test line state. Continuous write of test lines.

- 7. Test char state. Continuous write of a test character.
- 8. Open state. No selected test, i.e. stream unused.

- Detailed survey of currently active stream, or - if stream inactive - the latest completed connection. The survey includes:
 - Number of transmitted and received packets
 - Number of interrupt packets
 - Number of resets
 - Number of lost packets
 - Time stamp for start of connection

8. 2. 3. Get Functional Mode

Returns the value of the actual functional mode selected with (TESTABN,r,24), Change Functional Mode.

8. 3. Close down of TESTABN Entity

In order to prepare a removal of the TESTABN entity or otherwise make it inoperable, the entity may be disconnected from the DTE with a "disconnect user" EM-operation:

(TESTABN,r,32)

9. Error Operation

This chapter describes how the TESTABN entity should be operated in error situations after installation and configuration.

9. 1. Handling of Exceptions

Concerning the TESTABN entity exceptions can be of two kinds:

- a) Exceptions explicitly generated by the TESTABN entity. These exceptions and the advised action to take are described in chapter 12.
- b) Exceptions occurring in the TESTABN entity by situations not foreseen by the entity.

In these situations an error-report must be filed together with the part of the logfile for this node corresponding to the last 5 minutes before the exception.

9. 2. Handling of Serious Events

Three of the events received from TESTABN are categorized as "serious", i.e. they should be reacted upon by the NMC operator. These events are listed below:

- Packet lost

The local DTE reports that it has lost a packet. There can be several reasons for that, including:

The buffers supplied by the TESTABN are too small to hold the packet from the remote user.

A call from a remote user has arrived before the TESTABN had time to supply buffers to the DTE. This problem can only occur at initialization of the TESTABN.

- DTE restart

This event is reported from the XDTE (as opposed to IDTE) only.

- Datagram received

The DTE has received a datagram from the net. This should not happen normally.

9. 2. 1. Trace event

The trace event is not used by the TESTABN entity.

9. 2. 2. Events Lost

Identification: (TESTABN,e,255)

Action

Normally no action. If the event occurs often, the size of the event spool buffer must be increased (in this case report to the responsible for the TESTABN software component).

9. 3. Handling of Other Error Situations

No information available.

10. Guidelines for Error Reporting

When reporting an error that involves the TESTABN entity the following information is required :

- version number of the entities involved, i.e. TESTABN and (I)DTE.
- relevant part of the log-file (5 minutes back).
- a personal description of how the error is experienced.
- the stack trace in case of an exception.
- a printout of the request set used for starting and initialization.

other information about the error to be supplied when writing an actual error-report.

11. References

1. RcPAX
An Introduction
Edition 2.0 Denmark, june 1990.
2. RcPAX Network System
The Data Transmission System
General Description
PN: 99001391
3. RcPAX Network System
Test Answer Back from Network (TESTABN)
EM Reference Manual
PN: 99001416
4. RcPAX Network System
Internal DTE (IDTE)
Installation and Operating Guide
PN: 99001407

12. Exception Codes

The codes explained here are those that the TESTABN entity generates on purpose in certain situations.

Excode (hex)	Explanation
3000	DTE semaphore not found
3001	Cannot connect to DTE. A trace has been sent to the debug console with the u2-value
3002	Buffer allocation error. Number of buffers actually allocated is less than expected.
3010	Disconnect event from the DTE.

13. Trace Codes

Trace no. 3003h occurs if a message is received at main semaphore. The immediately preceding trace gives the u1-value.

14. TESTABN EM-Summary

This chapter contains a summary print of the request/answer EM operations and the EM events for the TESTABN module.

14. 1. Requests

Operation Description

OPERATION	DESCRIPTION
0	TESTABN EM survey
4	Set event mask
7	Order events
8	Set network identification code
11	Cpounterorder events
12	Set network news lines into network information
15	Start snoop
19	Stop snoop
24	Change functional mode
28	Send reset request
32	Disconnect as DTE user
36	Send clear request

14. 2. Monitoring operations

Operation	Description
5	Get event mask
6	Get TESTABN general survey
10	Get TESTABN stream survey
25	Get functional mode
67	Read EM state
71	Read program version

14. 3. Events

Operation	Description
27	Connect last stream
31	Connect stream
35	Stream cleared
39	DTE stream reset event
43	DTE packet lost event



PN: 99001414