SUBJECT: IIN Testing Using Predictor System

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FILE: WT88-26-03 (Revised)

PROCEDURE FOR: DSOC Personnel

INFORMATION FOR: I&M Field Personnel

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This letter replaces WT88-26-03 dated February 2, 1988.

Our DMS, #5ESS and Siemens central offices can provide a Centrex service that the rest of our central offices can't offer, called Integrated Information Network or IIN.

This service allows the use of a new type of telephone called a Meridian Business Set (MBS). However, the MBS can only be used in a DMS type office. What's unique about the MBS is a special "line card" (LEN) in the central office associated to the MBS's Primary Directory Number (PDN). The "line card" allows 56 separate telephone numbers to be assigned to a single cable pair.

Other services and features are explained in the following UPDATE letters:

WT87-26-05 Integrated Information Network (IIN) Service
WT87-26-05A, B, C... IIN Customer Profiles
WT87-26-06 IIN Central Office Features - DMS 100
WT87-26-07 IIN Central Office Features - 5ESS
WT88-26-01 CRSAB Repair Answer for IIN Service
WT88-26-02 IIN Business Set Trouble Shooting Procedures

IIN service with Meridian Business Sets are not MLT testable. Predictor is the vehicle that must be used when testing under these conditions.

Attached you'll find flow charts, sign-on and sign-off procedures, testing sequences and explanations to testing IIN MBS lines.

This letter will be revised as new tests and procedures are developed and added as new attachments.

Please refer your questions and concerns regarding this subject to the author.

R. E. Brown
District Staff Manager -
Distribution Services

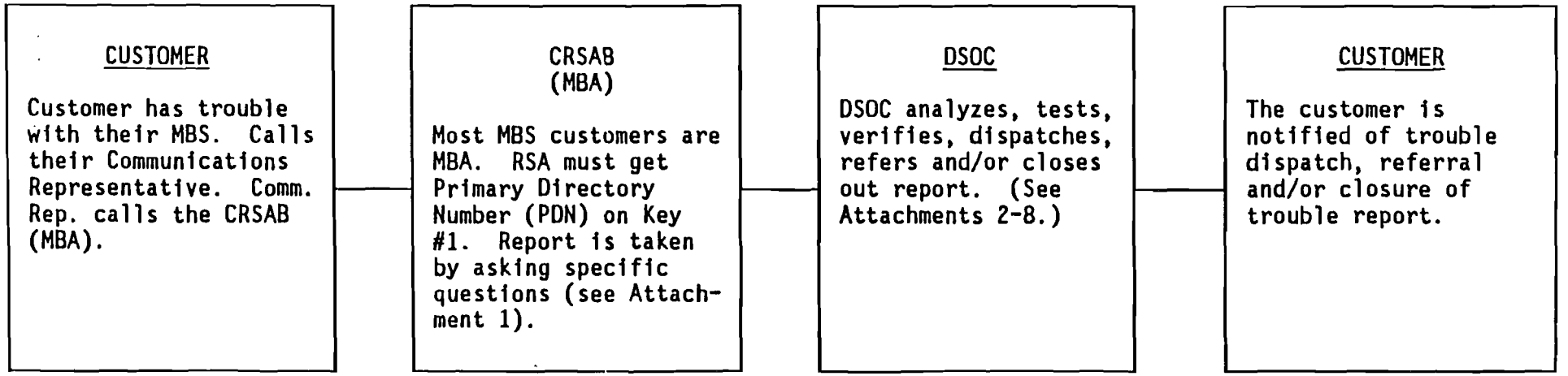
DJA:lmh

Attachments

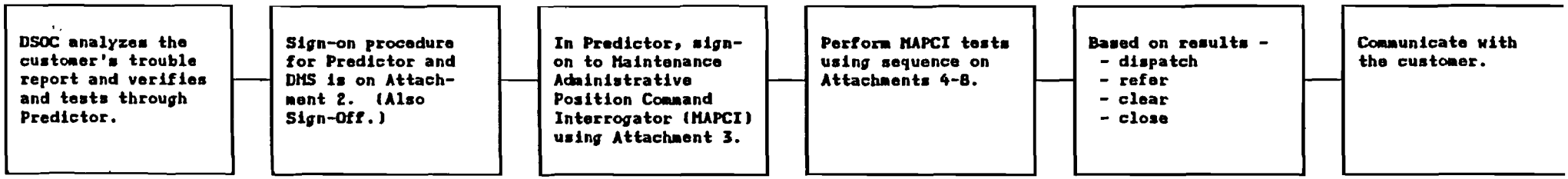
IIN TESTING
USING THE
PREDICTOR SYSTEM
FOR TESTING
MERIDIAN BUSINESS SETS

- Table of Contents -

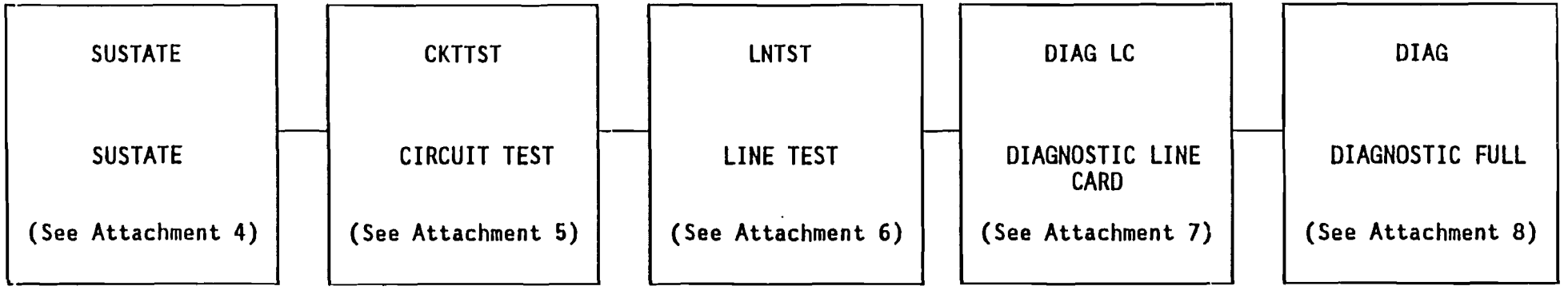
BASIC MBS TROUBLE REPORT FLOW



SIGN-ON/OFF AND REQUEST INFORMATION



MAPC1 TEST SEQUENCE INTRODUCTION



BASIC MBS TROUBLE REPORT FLOW

MBA/CRSAB

To assist the DSOC in analyzing the customer's trouble report, the Repair Service Attendant (RSA) should ask our customer the following questions:

1. Primary Directory Number on Key 1.

2. Location of the Business Set.

   a. Floor
   b. Room
   c. Desk

3. Complete description of the problem.

   a. Time problem occurred.
   b. What number(s) was the customer talking to and who called who.
   c. Does the problem occur all the time or at times.
   d. Does the problem occur while using a feature.
   e. Etc.

4. Handle Code - MBA.

5. Contact name and number.

6. Time received and commitment.

7. Send to DSOC.

NOTE - When received, make sure that the report is not involved with a cable trouble or service order activity.

SIGN-ON/OFF PROCEDURE
PREDICTOR/DMS

MBS are unique in that you can't test them with LMOS. MBS will test as a short or open depending on the customer's equipment that is associated with the MBS. MBS troubles must be tested using Predictor. The following is the sign-on procedure to be used to verify and test MBS lines.

AT&T 6500 Sign-On -

1. Obtain session that contains Predictor (usually D)
2. Depress Command Key
3. Cursor to CH (Change Host)
4. Depress Enter Key
5. Cursor to ASYNC MODEM
6. Depress Enter Key
7. Check CAPS LOCK (will use lowercase)
8. Depress PF3 for Modem/Dial
9. Depress PF2 for Select
10. Enter Predictor number
11. Depress PF1
12. Enter login: ver (lowercase)
13. Enter Password: VER (uppercase)
14. Enter Terminal VT100
15. Response will be $

At this point, you are now signed on to Predictor.

16. Enter Query
17. Enter Switch I.D. (Wire Center's lowest NXX)
18. Response will be a ?
19. Enter login
20. Enter User Name: LOCTST
21. Enter Password: LOCTST

At this point, you are now signed-on to the DMS switch.

22. Verify Directory Number (QDN) and LEN (QLEN) (Testing is also done at this level - see Attachment 3)

AT&T 6500 Sign-Off -

Any time you are not using Predictor to verify a DMS line, you must sign-off from the switch and also Predictor. This will free up the customer's line and will also free up the ports to Predictor and the switch as there are a limited number of ports.

1. Enter logout
2. Response will be "Bye Bye"
3. Depress shift and the number 6
4. Change Host (CH)

SIGN-ON/OFF AND REQUEST PROCEDURES

MAINTENANCE ADMINISTRATIVE POSITION COMMAND INTERROGATOR (MAPCI)

MBS will only work in a DMS type office. Since MLT cannot be used to properly test MBS, Predictor is your only vehicle for testing. To test MBS with Predictor, you must gain access to the various "maintenance levels" in the DMS switch. The Maintenance Level Flow Chart is on Attachment 3A.

There are various methods of signing on to the Maintenance Levels and they are as follows:

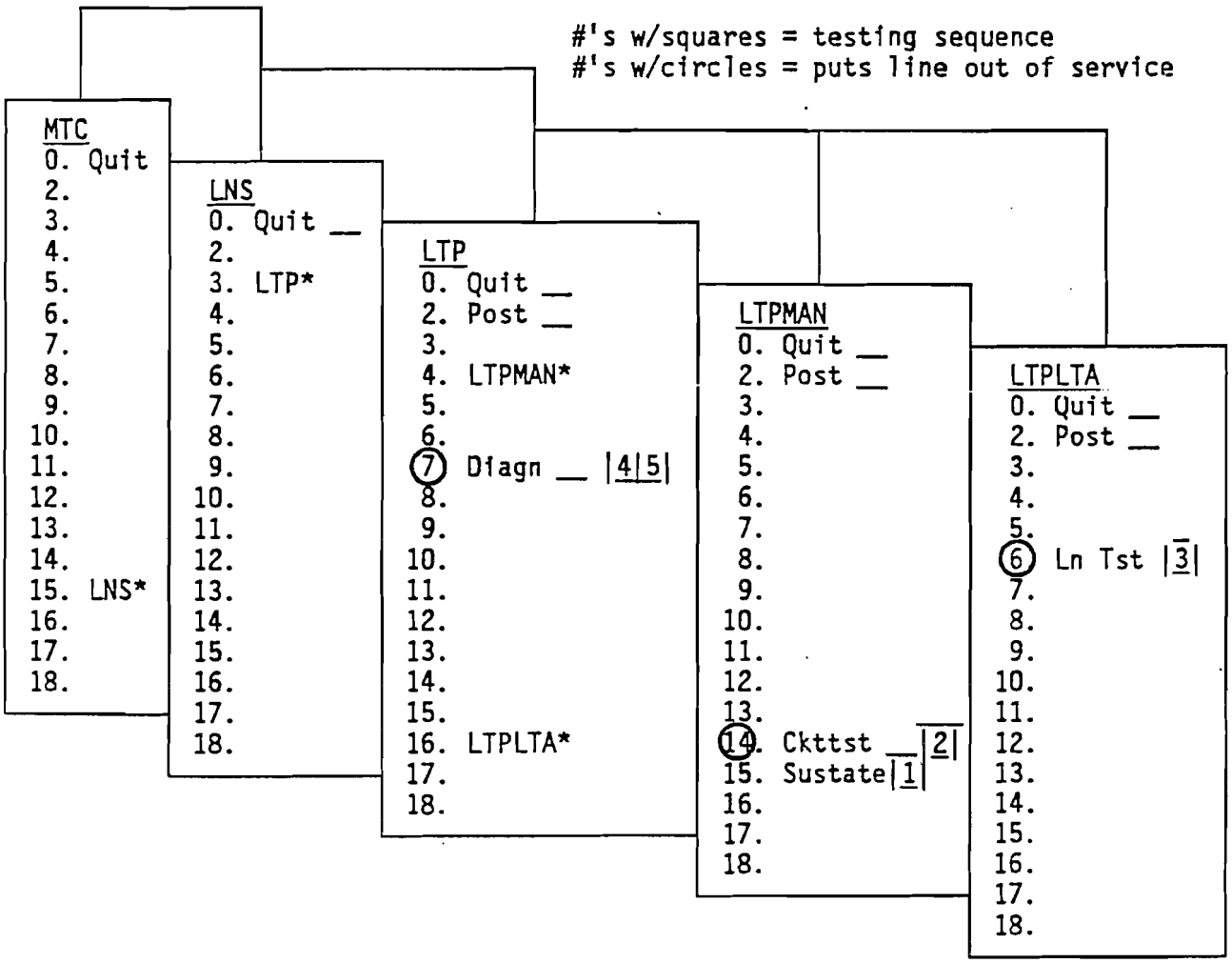
Method 1	Method 2	Method 3
Enter MAPCI	Enter	(Future)
Response MAPCI:	MAPCI; MTC; LNS; LTP;	
Enter MTC	Response	
Response MTC:	MAPCI; MTC; LNS; LTP;	
Enter LNS	MAPCI:	
Response LNS:	MTC:	
Enter LTP	LNS:	
Response LTP:	LTP:	

Once access is gained to the DMS switch by any of the methods listed above, you now have access to various tests located within the levels you sign-on to. There are 5 tests that must be performed on all trouble reports. These tests are addressed on Attachments 4 through 8.

MAINTENANCE ADMINISTRATIVE POSITION COMMAND INTERROGATOR
MAPCI

Testing Levels:

MTC = Maintenance
LNS = Lines
LTP = Line Test Position
LTPMAN = Line Test Position Manual
LTPLTA = Line Test Position Line Test Access



NOTE - Capital letters indicate other menus.*
Regular letters indicate the tests.

Additional tests will be added as procedures are developed.

Lines in use will show - line state in-appropriate
- line state invalid

MAPCI TEST SEQUENCE PROCEDURE

To properly analyze and test MBS trouble reports, Attachments 4 through 8 must be followed in proper sequence. Any deviation could result in improper analysis and tests and possibly an irate customer.

To begin the testing sequence, you should have a printed copy of the Primary Directory Number (PDN) by using the Query Directory Number (QDN) command and a copy of the LEN information by using the Query Line Equipment Number (QLEN) command.

Note - When testing, turn on printer just prior to and at completion of testing.

To test a line, you must first "POST" the LEN, i.e., POST L XX X XX XX. If you post the Directory Number, you may get the Primary appearance of the MADN LEN. Now you are ready to perform the following test:

SUSTATE

This test is the 1st of 5 tests to be performed on the customer's line. It will verify that the set and add-ons are responding to each software condition assigned. To begin, select SUSTATE from the LTPMAN menu:

Type in LTPMAN

Response LTPMAN:

Type in SUSTATE

Note - Do not enter the directory number if the line in trouble is a MADN (Multiple Appearance Directory Number) because the switch may enter the incorrect LEN and thus you would have the wrong telephone number. Upon successful entry your response should be:

ADDRESS	0	1	2	3	4	5	6	7
DATA FILLED	.	_	_	_	_	_	_	_
RESPONDING	.	_	_	_	_	_	_	_

. = What is programmed in the switch for a directory number for an address
_ = Switch doesn't recognize the MBS equipment responsing or the switch hasn't been programmed for a directory number for each address.

In other words, this is a comparison between what's programmed in the switch and what's in the field.

EXAMPLE OF IMPROPER RESPONSE

ADDRESS	0	1	2	3	4	5	6	7	
DATA FILLED	.	.	_	_	_	_	_	_	= MBS w/Add-on
RESPONDING	.	_	_	_	_	_	_	_	= Add-on not responding

NOTE A - When an address (0-3) has a (.) under it, it would indicate the following:

DATA FILLED Address 0 = Main Station on MBS
DATA FILLED Address 1 = First Add-on module
DATA FILLED Address 2 = Second Add-on module
DATA FILLED Address 3 = Third Add-on module

RESPONDING Address 0 = MBS on line and appears to be working
RESPONDING Address 1 = Module on line and is responding
RESPONDING Address 2 = Module on line and is responding
RESPONDING Address 3 = Module on line and is responding

NOTE B - When an address (4-7) has a (.) under it, it would indicate the following:

DATA FILLED ADDRESS 4 = Extension MBS in software
DATA FILLED ADDRESS 5 = First module on EXT MBS
DATA FILLED ADDRESS 6 = Second module on EXT MBS
DATA FILLED ADDRESS 7 = Third module on EXT MBS

RESPONDING ADDRESS 4 = EXT MBS on line and appears to be working
RESPONDING ADDRESS 5 = First module on EXT responding
RESPONDING ADDRESS 6 = Second module on EXT responding
RESPONDING ADDRESS 7 = Third module on EXT responding

NOTE C - Further action may be required based on SUSTATE results.

Response - No data filled but field responding.

Action - Check station records. Is there suppose to be something in the field or is the software incorrect?

Response - Data filled but no response from MBS.

Action - Perform CKTTST (Circuit Test on Attachment 5).

NOTE D - The SUSTATE test should be performed 5 times in succession to ensure proper responses from the MBS.

Enter Repeat 5(SUSTATE)

NOTE E - At times you may encounter an "ERROR." Be sure to read what the error message is. In most cases, when you go to reenter your request, do not retype the command. The switch already knows what command you entered so just reenter the DN or LEN.

If you make an error for the "command" entry, i.e., QND instead of QDN, you get an error message directed to the command.

Attachment 5
CKTTST
MBS and Internal
Components

MAPCI TEST SEQUENCING PROCEDURE

To properly analyze and test MBS trouble reports, Attachments 4 through 8 must be followed in proper sequence. Any deviation could result in improper analysis and tests and possibly an irate customer.

CKTTST

(CIRCUIT TEST)

This is the 2nd of 5 tests to be performed on the customer's line. It will verify that the components or computer chips of the MBS are working properly. To begin, select CKTTST from the LTPMAN menu:

Type in CKTTST

The switch will respond in the following manner:

Messages Sent = 10
Messages Received = 10

The results are an indicator that the MBS is responding correctly to messaging. The test signals are addresses internal to the MBS and each message sent expects proper responses from each component in the MBS. If the results are not equal (10 and 9), the MBS is defective and should be replaced. Refer the customer to their vendor.

NOTE A - This test must be performed 5 times to ensure proper operation of the internal components of the MBS.

Enter Repeat 5(CKTTST)

NOTE B - Messaging is sent to the MBS at 8 KHz from the line card in the central office. Messages are sent out on the ring side of the facilities and returned on the tip side.

	RES	CAP	VAC	VDC
TIP	999.K	2.055UF	0	0
RING	999.K	1.055UF	0	0
TIP to RING	999.K	1.005UF	0	0

The above results could indicate an open ring side out in the field.

	RES	CAP	VAC	VDC
TIP	999.K	5.00UF	.5	.5
RING	999.K	5.00UF	0	0
TIP to RING	999.K	5.00UF	0	0

The above results could indicate a faulty MBS or facility problem. VAC and VDC should be zero.

	RES	CAP	VAC	VDC
TIP	999.K	5.00UF	0	0
RING	10.K	5.00UF	0	0
TIP to RING	500.K	5.00UF	0	0

The above results could indicate a ground on the line.

	RES	CAP	VAC	VDC
TIP	500.K	0.00UF	0	0
RING	500.K	0.00UF	0	0
TIP to RING	10.K	0.00UF	0	0

The above results could indicate a short on the line.

	RES	CAP	VAC	VDC
TIP	999.K	2.86UF	0	0
RING	999.K	4.79UF	0	0
TIP to RING	999.K	5.00UF	0	0

The above results could indicate a Non-Display MBS.

NOTE B - Perform this test only once. Repeated tests will reduce the capacitance.

NOTE C - Mark down what a good test looks like to various customers.

MAPCI TEST SEQUENCE PROCEDURE

To properly analyze and test MBS trouble reports, Attachments 4 through 8 must be followed in proper sequence. Any deviation could result in improper analysis and tests and possibly an irate customer.

DIAG LC

(DIAGNOSTIC LINE CARD)

This is the 4th of 5 tests to be performed on the customer's line. It is used to test the operation of the line card located in the central office that is assigned to our customer's LEN. To begin, select DIAG from the LTP menu.

Type in DIAG LC

The results may look like the following:

```
Attempting to Diagnose Line Card only
MILWWI13DSO***+LINE 100 JAN 25 08:56:49 4700 PASS LN_DIAG
     LEN HOST 01 1 17 14  DN 2270077
     DIAGNOSTIC RESULT  CARD DIAGNOSTIC OK
     ACTION REQUIRED NONE
     CARD TYPE 6X21AC
```

If the line card test "fails," you should do the following:

1. Change line card*
2. Check facilities

*First Priority

Attachment 8
DIAG
Full Test

MAPCI TEST SEQUENCE PROCEDURE

To properly analyze and test MBS trouble reports, Attachments 4 through 8 must be followed in proper sequence. Any deviation could result in improper analysis and tests and possibly an irate customer.

DIAG

(DIAGNOSTIC)

This test is the last test to be performed on the customer's line. It will test the entire line. To begin, select DIAG from the LTP menu.

Type in DIAG

The DIAGNOSTIC test looks at the following items:

- Facilities
- Line Card
- Interaction of Electronics
- Micro Processor
- Chips
- Proper KEY Response
- Key Pad Operation
- Display

The results may look like the following:

```
MILWWI13DSO***+LINE 100 JAN 25 09:04:01 9000 PASS LN_DIAG
          LEN HOST 01 1 17 14  DN 2270077
          DIAGNOSTIC RESULT CARD DIAGNOSTIC OK
          ACTION REQUIRED NONE
          CARD TYPE 6X21AC
```

If the results are as indicated above, verify with customer.