

## POINT NETWORK CONTROL POINT 800 SERVICE DATA BASE MEASUREMENTS, REPORTS, AND DATA BASE UPDATING

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D. Message Handling . . . . .	10	<b>1. GENERAL</b>	
E. Buffering . . . . .	11	1.01 This section describes the data base measure- ments, reports, and messages emanating from the 800 service data base. This section also includes a descriptive outline of commands originating at the Network Administration Center (NAC) to the design- ated 800 service data base for validation, additions, or changes.	
8. CUSTOMER AND DATA BASE PARAMETERS . . . . .	11	1.02 This section is reissued to reflect changes	

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made in the 800 service database reports; and to change the title. Revision arrows are used to emphasize the more significant changes. This issue does not affect the Equipment Test List.

**1.03** The 800 service data base will provide the following administrative capabilities:

- (1) Total Data Base Measurements
- (2) Scheduled Reports
- (3) Exception Reports
- (4) Special Study Data
- (5) Sample Study Data.
- (6) Administer 800 service records.

**1.04** All these reports, messages, and data will contain the time/date of origin. The time will be based upon the 24-hour clock accurate to  $\pm 1$  second. (The event time will be minutes after the hour.)

**1.05** Application processing of these items will be accomplished in the NAC processor Network Support System (NSS).

## 2. MEASUREMENTS

**2.01** The data base will keep a set of counts of the following quantities on a per data base basis. These counts will be reported to NAC as scheduled reports or on request from NAC.

- (1) Inquiries (each time the data base receives an inquiry on an 800-XXX-XXXX)
- (2) Busy messages received
- (3) Idle messages received
- (4) Miscellaneous messages received
- (5) Invalid busy/idle messages
- (6) Success replies
- (7) Vacant number replies
- (8) Nonpurchased NPA replies
- (9) Busy replies

- (10) Overload replies
- (11) Mass announcement replies
- (12) Automatic network management messages sent
- (13) Manual network management messages sent
- (14) Miscellaneous output messages sent
- (15) Unrecognized input messages
- (16) 800 service messages turned around by signal transfer points (STPs) due to overload
- (17) 800 service messages turned around by STPs due to network blockage
- (18) 800 service messages turned around by STPs due to missing data
- (19) 800 service messages turned around by STPs due to function unequipped
- (20) 800 service attempts with miscellaneous errors
- (21) Miscellaneous 800 service data base errors
- (22) 800 service attempts sampled
- (23) Disk reads due to inquiry traffic
- (24) Secondary attempts

## 3. SCHEDULED REPORTS

**3.01** The data base will provide three kinds of scheduled reports to the NAC. These are hourly reports, 5-minute reports, and 2.5-minute reports.

### A. Hourly Reports

**3.02** The data bases will provide a summary report on the measured items in paragraph 2.01. These items will be collected by the data base on an hourly basis and transmitted to NAC automatically on a "link available" basis.

**3.03** The data base will only automatically zero the counters of the previous hour when the con-

tents are moved to the buffer for the data link on the normal hourly schedule.

**3.04** The ability to request this summary for the current hour on a demand basis only, will be provided to allow NAC to interrogate this report to determine the data base data handling capacity. These reports will be on the TOTAL DATA BASE and not reducible to per customer levels. However, the counters remain intact and do not get set to zero.

**3.05** The count for any hour in which a data base malfunction occurred will contain a flag (asterisk) next to the hour in the report. This would alert the NAC to the possibility of errors in that hourly report. NAC will be responsible to gather these hourly reports to provide a "24-hour" report.

**B. Hourly Report of Outstanding Busy/Idle Activate/Deactivate Requests**

**3.06** The data base will keep an Activation/Deactivation Request Pending List for which activation/deactivation messages have been sent out but responses have not been received. Then on an hourly basis, the data base will automatically inform NAC of those destinations which have not completed the activation/deactivation request.

**3.07** The report will contain: the number of destinations with outstanding requests, destination plain old telephone service (POTS) number, origin of request (NSS or data base compare of data), and requested action (activate or deactivate).

**3.08** NAC will be responsible to gather these hourly reports to provide a "24-hour" report.

**C. 5-Minute Reports**

**3.09** This report will be generated on a scheduled 5-minute interval to provide NAC with the current contents of the following lists:

- Manual network management
- Vacant code
- Nonpurchased numbering plan area (NPA)
- Special study
- Data base status formation
- Report of counts related to 800 service function thresholds.

**3.10** The report will contain the count of attempts against the number during the preceding 5-minute interval for the 800 number, destination POTS number (only for manual controls on destination), and the level at which the number is being controlled (0 if special study).

**3.11** A report will also be generated at the end of each 5-minute period for each of the following counts

- 800 service attempts
- Invalid busy/idle message
- Message with miscellaneous errors with reply SENT
- Data base refusal message with miscellaneous errors, no reply sent
- Secondary attempts
- 800 service messages turned around by STP
- 800 service attempts sampled.

**D. 2.5-Minute Reports**

**3.12** This report will be generated on a scheduled 2.5-minute interval to provide NAC with the contents of the surveillance list. The report will contain the count of attempts against the number during the preceding 2.5-minute interval, the 800 number, and the destination POTS number.

**4. EXCEPTION REPORTS**

**4.01** Exception reports are divided into two categories: service effecting and maintenance. This subsection will define all the data base related exception reports.

**4.02** Some of these reports are maintenance related and required by the node maintenance group to resolve the problem. These reports are also transmitted to the NAC for information purposes. Transmitted exception reports are shown in Table A.

**4.03** Exception report detail for each event is described in Table B. The table identifies the exception along with the data which the data base will provide.

**4.04** All exception reports will be delivered to the NAC via the full-time data link via the "On Link Available" mode.

◆ TABLE A ◆

## EXCEPTION REPORT

REPORT	DESCRIPTION
XAC	Network Management Automatic Control Activity
XBI	Busy/Idle Related Exception
XCF	Customer File Reload Required
XDC	Data Check Exception
XDS	Direct Signaling Exception
XER	Query Processing Sanity Test Error Exception
XFR	File Reconfiguration Exception
XNM	Network Management List Activity
XOS	OSO Related Exception
XRA	Remove Application Exception
XSA	Secondary Attempt Exception
XSC	800-Service Data Base State Change
XST	Network Entity Status Change
XTA	STP Turned Around Message
XTH	800-Service Function Threshold Exceeded

**4.05** All exception reports will carry time/date of origin as well as a type indicator identifying the report type. NAC will sort and deliver exception reports to the network operations center (NOC) as required.

## 5. SPECIAL STUDY DATA

**5.01** The data base will provide special study data on a maximum of 10 simultaneous 800-XXX-XXXX's per data base. These studies will be initiated by NAC. Special study activity will be deferred when a data base has assumed its mate's load.

**5.02** The data base will return the following information to NSS for each dialed attempt against any 800 number which is on special study.

- (a) 800-XXX-XXXX
- (b) Originating NPA
- (c) Final attempted POTS destination
- (d) First choice indicator.

### Ineffective Attempt Reason

- (a) Busy
- (b) Out of band

(c) Miscellaneous error ◆with reply sent◆

(d) ◆Miscellaneous error without reply sent.◆

**5.03** Busy/idle (B/I) information for each destination under the specified 800 number will be provided as follows:

- (a) 800 XXX
- (b) ◆B/I bit number
- (c) B/I status indicator. ◆

**5.04** Once an 800-XXX-XXXX is placed on a special study list, the data base will continue to transmit the special study data including the type indicator until NSS removes the 800-XXX-XXXX from the list.

## 6. SAMPLE STUDY DATA

**6.01** The data base will provide ◆three◆ types of sample data. The first will be for customers and consist of a 0, 6.25, 12.5, 25, 50, or 100 percent sample attempts to an 800 number. The second type of sample will consist of a 0 or 100 percent sample of vacant codes per NSS specified 800 XXX. ◆The third is a 0, 1, 2, 3, 4, or 5 percent sample of all queries to a data base.◆ The contents of the customer sample

♦TABLE B♦

## EXCEPTION REPORT DETAIL

EVENT	DATA INCLUDED IN EXCEPTION REPORT
XAC	(a) Type of Activity: <ul style="list-style-type: none"> <li>– Destination cannot be placed on automatic control because list is full</li> <li>– Destination is on automatic control</li> <li>– Destination has been removed from automatic control</li> <li>– Destination has been removed from automatic control to audit error</li> </ul> (b) 800-XXX (c) Destination POTS Numbers (d) Time in Seconds Which it Took for the Threshold to be Exceeded or for the Interval to Elapse (e) Level at Which Destination is Being Controlled (f) Count of Attempts Against the Destination During Time Seconds
XBI	(a) Reason for Exception: <ul style="list-style-type: none"> <li>– Invalid busy/idle message (threshold exceeded)</li> <li>– No room in busy/idle—activate/deactivate list</li> <li>– Invalid busy/idle activate/deactivate completion message received from end office</li> <li>– Idle response to busy/idle status update message</li> </ul> (b) 800-XXX on Which Message Was Routed to or From the End Office (c) Busy/Idle Bit Number Sent to or Received From End Office (d) Action Taken at Terminating End Office: <ul style="list-style-type: none"> <li>– BISI feature activated</li> <li>– BISI feature deactivated</li> </ul> (e) Reason for Message: <ul style="list-style-type: none"> <li>– 800-Service data base activate/deactivate message</li> <li>– Terminatng end office data check sequence</li> <li>– Craft activate/deactivate</li> </ul> (f) Terminating End Office Return Address
XCF	(a) Notification to NSS That an Unrecoverable Error Has Occurred at the 800-Service Data Base and That NSS Must Reload the 800-Service Data Base
XDC	(a) Reason for Exception: <ul style="list-style-type: none"> <li>– Mismatch in comparison of end office and 800-Service data base data</li> <li>– Data check response message received from end office but data check message not sent by 800-Service data base</li> <li>– Data check message sent to 800-Service data base but no response received from end office within 10 seconds</li> </ul> (b) 800-XXX Stored at 800-Service Data Base (c) Busy/Idle Bit Number Stored at 800-Service Data Base (d) Destination POTS Number Stored at 800-Service Data Base (e) Busy Report Frequency Stored at 800-Service Data Base (f) Not Found Indicator: <ul style="list-style-type: none"> <li>– POTS number found at end office (success)</li> <li>– POTS number not found at end office (failure)</li> </ul> (g) 800-XXX Received From End Office (h) Busy/Idle Bit Number Received From End Office (i) Status of Busy/Idle Feature at End Office (j) Busy Report Frequency Stored at End Office (k) Terminating End Office Return Address

## ♦TABLE B (Contd)♦

## EXCEPTION REPORT DETAIL

EVENT	DATA INCLUDED IN EXCEPTION REPORT
XDS	(a) Reason for Exception: — FOR received, but not originated by mate — FOG received, but FOR not sent (b) Function Number Which Identifies the Node and Function That Requires Network Service
XER	(a) Notification to NSS That the 800-Service Data Base's Query Processing Sanity Tests Have Detected an Error
XFR	(a) Notification to NSS That Disk File Reconfiguration Has Begun at the 800-Service Data Base
XNM	(a) Type of List: — Manual control-800 number — Manual control-destination — Special study — Nonpurchased NPA — Surveillance — Vacant code (b) Type of Activity: — Number added to list — Analysis failed (XXX threshold exceeded but line number threshold not exceeded) — Number cannot be added to list because list is full — Number removed from list — Number removed from list due to audit error (c) 800 Number (d) Indication of Whether 800 Number is 6-digit or 10-Digit (e) 10-Digit Destination Number
XOS	(a) Dialed 800 number (b) Originating NPA of the Attempt (c) OSO Return Address
XRA	(a) Notification to NSS That Local Personnel Have Entered a Request to Disable the 800-Service Data Base at a Feature Processor
XSA	(a) 800 Number (b) Return Address of Office Sending the Message to the 800-Service Data Base
XSC	(a) Current Major State: — Disabled — Enable — Unequipped (b) Current Service State: — Out of State—Administration Center — In Service — Out of Service—Maintenance — Out of Service—Node — Out of Service—Application

## ♦TABLE B (Contd)♦

## EXCEPTION REPORT DETAIL

EVENT	DATA INCLUDED IN EXCEPTION REPORT
	<p>(c) Current Disk State:</p> <ul style="list-style-type: none"> <li>– Duplex</li> <li>– Simplex</li> </ul> <p>(d) 800-Service Data Base Entity That is in a State of Overload</p> <ul style="list-style-type: none"> <li>– Both</li> <li>– Disk</li> <li>– Processor</li> <li>– Neither Disk or Processor</li> </ul> <p>(e) Overload Level:</p> <ul style="list-style-type: none"> <li>– Overload removed</li> <li>– Overload level 0</li> <li>– Overload level 1</li> <li>– Overload level 2</li> <li>– Overload level 3</li> <li>– Overload level 4</li> <li>– Overload level 5</li> <li>– Overload level 6</li> <li>– Overload level 7</li> <li>– Overload level 8</li> </ul>
XST	<p>(a) Network Entity Which Has Had a Change in Status</p> <ul style="list-style-type: none"> <li>– C link</li> <li>– Mate 800-Service data base</li> </ul> <p>(b) Current Status of Network Entity:</p> <ul style="list-style-type: none"> <li>– Failed or removed from service</li> <li>– Restored or returned to service</li> </ul>
XTA	<p>(a) NPA-NXX of POTS Number Sent Out by the 800-Service Data Base</p> <p>(b) Type of Message Turned Around by the STP</p> <ul style="list-style-type: none"> <li>– 800-Service busy/idle activate/deactivate message</li> <li>– 800-Service destination busy count message</li> <li>– 800-Service data check message</li> <li>– 800-Service busy/idle status update message</li> </ul> <p>(c) Return Code in Turned Around Message</p> <ul style="list-style-type: none"> <li>– No routing data for destination</li> <li>– Network overload</li> <li>– Network blockage</li> <li>– Function unequipped</li> </ul>
XTH	<p>(a) Type of 800-Service Function Threshold Which was Exceeded</p> <ul style="list-style-type: none"> <li>– Attempts</li> <li>– Miscellaneous errors without responses to OSOs</li> <li>– Sample messages</li> </ul>

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sent to NAC is shown in paragraph 6.06 and the contents of the vacant code sample in paragraph 6.08.

**6.02** Sample rates for customer purchased samples will be obtained from the service order and will be placed in the active customer's record. Vacant code samples will be inputted to the data base on command from the NSS.

**6.03** Because of real time and link considerations, a data base should sample no more than about 5 percent of the 800 service attempts. The data base will provide the following information to NSS concerning the amount of the sample being taken:

- (a) An hourly report of the overall sampling rate excluding vacant code samples (part of existing hourly report).
- (b) A 5-minute threshold on the calculated percent will be provided on input from NSS and a 5-minute report will be generated and sent to NSS when the threshold is exceeded (part of existing 5-minute report).

**6.04** All sample study data will be transmitted to NSS via an "on link" available basis. Hence NAC will be accumulating sample data as they are developed by the data base.

**6.05** The data base would be required to buffer the study data in the event of a data link unavailable situation. This could be due to data link overload or data link failure.

### A. Customer and Attempt Samples

**6.06** These reports will consist of the following information:

- (a) Dialed 800 XXX XXXX
- (b) Originating NPA
- (c) Final destination POTS number
- (d) Sampling rate
- (e) Success/ineffective attempt indication
- (f) Ineffective attempt reason
  - (1) Busy
  - (2) Other

(3) Out of band (nonpurchased NPA)

(4) Miscellaneous error

(5) Inter/intra state indicator

(6) First choice indicator.

(7) Ownership flag

**6.07** The sampling rate for a customer sample will be specified when the record is created in the pending file at the NSS and can only be changed via a system service order.

### B. Vacant Code Sample

**6.08** The vacant code sample will be taken on the 800-XXX which is input by NSS. The sample will include the dialed 800 number and originating NPA of the attempt.

## 7. 800 SERVICE DATA BASE COMMUNICATIONS

**7.01** Every data base will communicate with the NSS via two data links (an active and a standby link). The data links will be used for administrative and control functions (Fig. 1 and 2).

**7.02** The following list contains the principle purpose of the data link:

- (a) Convey data base changes
- (b) Gather data for data base reports
- (c) Audit data base
- (d) Remove/restore 800 service data base from/to service
- (e) Network management controls and replies.

**7.03** Most of the administrative activity between NSS and the data base will be on an unscheduled basis. Therefore, the data bases must not be able to "LOCK OUT" the NSS processor (NSS) unless it is in a recovery situation. If an STP experiences difficulties and routing must be accomplished to the mate data base, then the mate data base will inform NSS of this condition.

**7.04** Updating of an off-net data base will be accomplished via the NSS to data base link. NSS

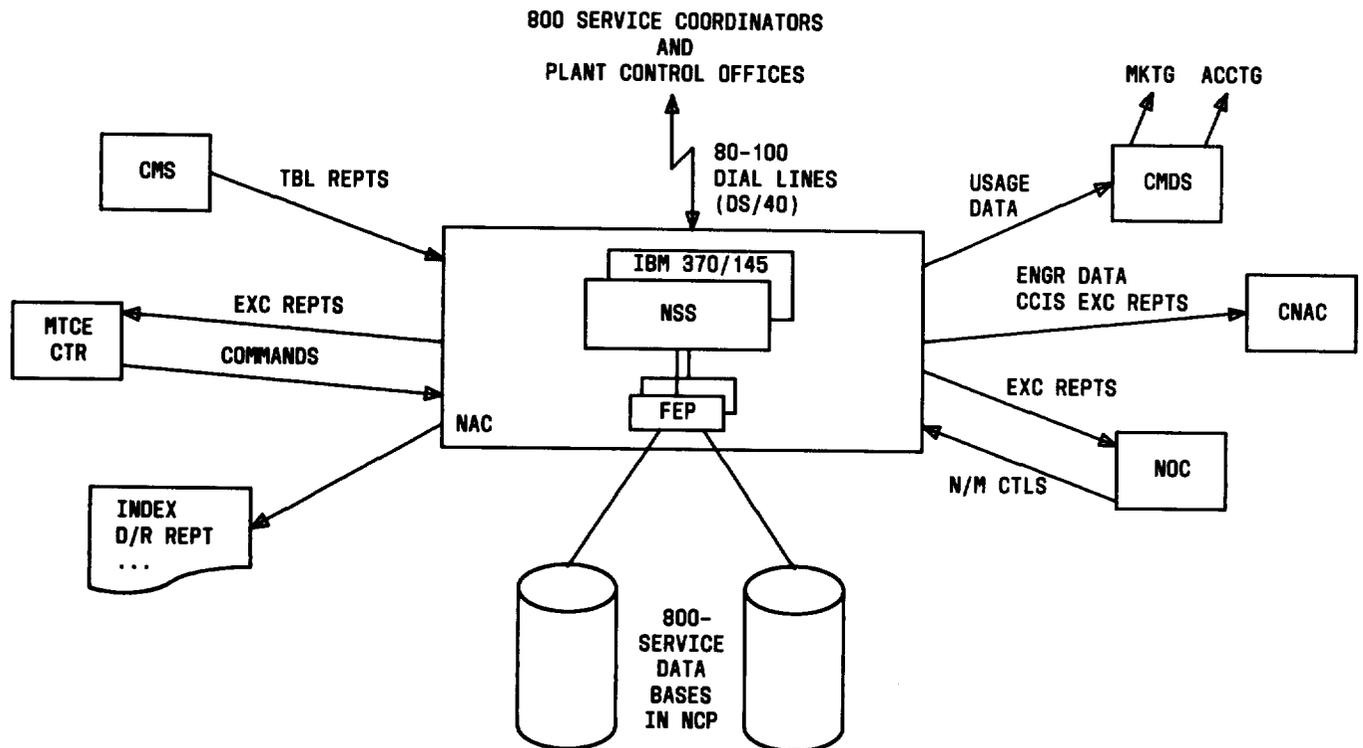


Fig. 1—800 Service Administration

auditing of data bases will also be accomplished via this link. The data base will be able to go out of service for file maintenance. This will usually be via NSS request to the data base.

#### A. Data Base to NSS Data Link Requirements

7.05 The "Data Link" between the data base and the NSS consists of the following:

- (1) 3B interface unit
- (2) Data links and data sets
- (3) Duplicated interface to NAC processor (NSS).

7.06 This link will have a 99 percent monthly availability factor which means that it be required to have no greater than 15 minutes of continuous downtime per day. Therefore, all the major components mentioned above must have a redundancy plan which will meet this criteria.

#### B. Data Link Characteristics

7.07 The data links will have the following characteristics:

Line	HDLC
Message	BX.25
Speed	Each link will operate at 4800 BPS synchronous
Mode	Full duplex
Redundancy	Dedicated active 4-wire private line connection as a backup.

#### C. Communications Characteristics

7.08 The data base to NSS communications involves symbolic references to data base entries as well as a command language, for example,

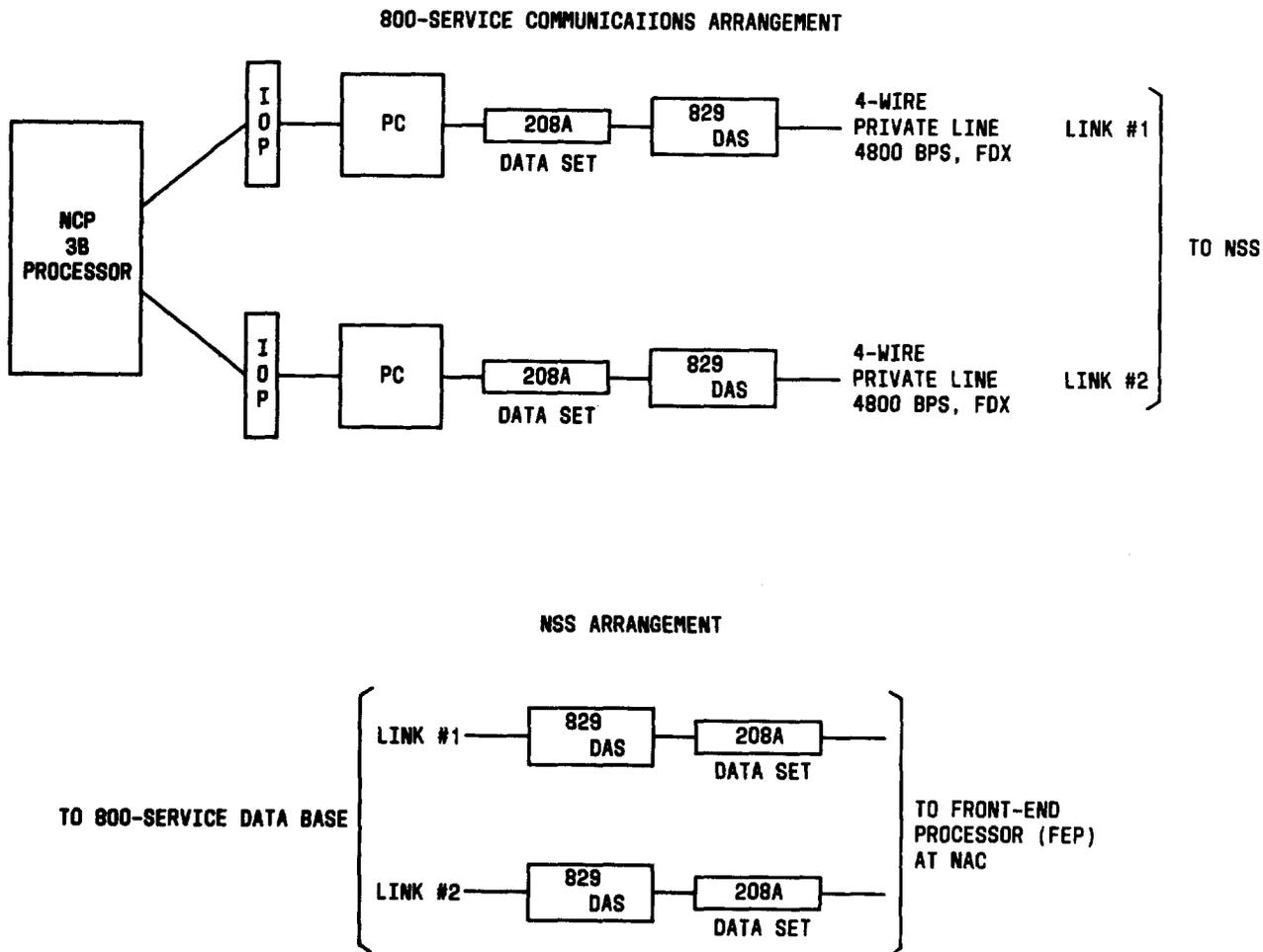


Fig. 2—Typical Data Base to NAC Communication Link

“Update Customer Record.” The data base must intercept the message streams conveyed on the data link. A communications protocol between the data bases and the NSS is required which addresses the following:

- (a) Acknowledgment delays
- (b) Validity checks
- (c) Failure messages
- (d) Retry strategies.

**7.09** HDLC will provide the necessary error detection and retransmission capability. The design of the “Data Link” will provide the necessary link reliability. NSS and the data bases will provide

the communications protocols which will allow the necessary commands and reply messages. This protocol will also specify the WAIT for reply interval (acknowledgment delay).

#### D. Message Handling

**7.10** The link shall accommodate varying length messages and shall pack messages into varying length blocks. The maximum block length shall be 256 bytes. To promote efficient use of the link, the average block size should be as near the maximum as practical. A message can span more than one block. The maximum number of blocks that a message can span is a design choice.

**E. Buffering**

7.11 When the data link is down, both the NSS and the INWATS data base shall hold all sampling type messages for a maximum of 30 minutes down time. On link recovery, both NSS and the data base transmits all held messages.

**8. CUSTOMER AND DATA BASE PARAMETERS**

8.01 Two sets of parameters will be required for operation of the data base:

- (1) **Customer Parameters**—Those that apply on an individual customer record.
- (2) **Data Base Parameters**—Those that apply to all the customer records served by the data base.

**A. Customer Parameters**

8.02 The customer parameters will be provided by the NSS each time a customer record is created. A customer record may include all or a subset of the following:

- (a) Customer 800 Number
- (b) Activation Date
- (c) Purchased Attempt Sample Rate
- (d) Originating NPA to Destination Number
- (e) Number of Destinations
- (f) Number of Call Distribution Chains
- (g) Number of Clock/Calendar Tables
- (h) Network Management + Class
- (i) Destinations:
  - (1) Destination POTS number
  - (2) Busy/idle bit number of this destination
  - (3) Busy/idle feature indicator
  - (4) Busy time allowed for destination
  - (5) Frequency of reporting of destination's busy count to end office

(6) Network management class of this destination

(7) Interstate/intrastate indicator

(8) Indication of ownership of the terminating line.

(j) Mass Indicator

(k) Clock/Calendar Index Table:

(1) Number of destinations within this call distribution chain

(2) Index of destinations in clock/calendar tables.

(l) Clock/Calendar Tables:

(1) Number of entries in this clock/calendar table

(2) Time of routing change on a weekly quarter-hour clock basis

(3) Index into route table.

**B. Data Base Parameters**

8.03 800 service data base parameters will be provided by NSS before the data base is brought on line. These data will be inputted via the NSS to the data base data link (Part 7).

(a) Daylight Savings Time Indicator

(b) List of Assigned XXXs

(c) For Each Assigned XXX:

(1) Primary/secondary indicator

(2) Vacant code turnaround indicator

(3) Vacant code sampling rate.

(4) Number of active lines in the XXX.

(d) 5-Minute Thresholds for:

(1) Total 800 service attempts

(2) Messages turned around by STP

(3) Vacant code data by NXX:

- Vacant code (one per data base)
- Vacant line number control (one per data base)
- Vacant number decontrol (one per data base).

(4) Nonpurchased NPA data by XXX:

- Nonpurchased NPA (one per data base)
- Nonpurchased NPA control (one per data base)
- Nonpurchased NPA decontrol (one per data base).

(5) Number of samples

(6) Invalid busy/idle message

(7) Messages with miscellaneous errors (Example = invalid originating NPA)

(8) Miscellaneous data base errors

(9) Secondary attempts

(e) Network Management Data:

- (1) Initial control level for focused overloads
- (2) Eight 6-digit control levels for STP feature processor overload.
- (3) Network management class data:
  - Surveillance threshold for detecting focused overloads
  - Control threshold for preventing focused overloads.

**9. MESSAGE PROCESSING**

**9.01** The data base will provide a file manipulation mechanism which involves the use of an active file. The active file will contain the current customer records which are in use. These records will be addressed by 800-XXX-XXXX. All customer record administration functions will be handled by the NSS.

**9.02** NSS will transmit active records which will be validated and activated by the data base. Ac-

tive processing of inquiries, B/I, etc, will be via these records. NSS will provide the mechanisms for pending and superseded record activity.

**9.03** NSS will format and validate a pending record and transmit it to the data base for activation. The data base will verify that the data can be activated and then activate it. NAC will establish the mechanism to control this activity.

**9.04** The records sent to the data base will indicate the action that the data base will perform. The following list contains the required activity:

- (a) Create an active record
- (b) Modify an active record
- (c) Delete an active record.

**9.05** NAC will provide the necessary administrative activity to maintain these records to insure meeting the service date of the service orders.

**9.06** The data base will acknowledge each command sent to it by NSS. The data base will treat responses to commands as high priority items for transmission to NSS.

**9.07** The NSS will be able to make the following requests of the data base.

- (a) Get Customer Record—obtain the complete contents of a customer record.
- (b) Get Function Related Data—obtain function parameters stored at the data base.
- (c) Get XXX Data—obtain, for a specified 800-XXX, various types of data associated with that XXX.
- (d) Initiate Busy/Idle Activate/Deactivate Message—activate or deactivate the busy/idle feature for a customer destination.
- (e) Initiate Data Check Message—obtain BISI related data from an end office.
- (f) Update Attempt Sample Rate—change rate at which function attempts are being sampled.
- (g) Update BIBNUM to POTSNUM Translation—delete from the data base BIBNUM to

POTSNUM translations after all occurrences of the POTSNUM have been deleted from the data base.

- (h) Update Customer Record—update at the data base by adding, replacing, or removing 800 number records.
- (i) Update Daylight Savings Time Indicator—change the value of the Daylight Savings Time Indicator at the data base.
- (j) Update Network Management Overload Control Levels—change network management control levels for processor and destination overload.
- (k) Update Manual Controls—to add, change, or remove manual controls on an 800 number or destination POTS number.
- (l) Update Network Management Data—change the network management designation class/threshold table of the data base.
- (m) Update 800-XXX Data—to add or remove an XXX to or from the data base or to change the primary/secondary role of an XXX at the data base.
- (n) Update Special Study List—start or stop a special study on an 800 number.
- (o) Update Function Status—remove or return the function from/to service.
- (p) Update Thresholds—change thresholds affecting the function at the data base.
- (q) Update Vacant Code Data—change for a specified 800-XXX, the vacant code turnaround indicator and/or the vacant code sampling rate at the data base.

**9.08** The data base will be able to make the following responses to requests by NSS.

- (a) 800 Service Function Attempt + Sample Rate Response—provide NSS the value of the function attempt + sample rate at the data base.
- (b) Busy/Idle Activate/Deactivate Response—notify NSS of action taken with respect to a

request to change the status of the busy/idle feature of a customer destination.

- (c) BIBNUM to POTNUM Translations Update Response—notify NSS that the BIBNUM to POTSNUM translations have been deleted from the data base.
- (d) Customer Record Retrieval Response—provide NSS with the information associated with a customer record.
- (e) Customer Record Update Response—provide NSS acknowledgment that an 800 number record was added, replaced, or removed at the data base.
- (f) Data Check Response—notify NSS of action taken with respect to a request to launch a data check message to a terminating end office.
- (g) Daylight Savings Time Indicator Response—provide NSS the value of the Daylight Savings Time Indicator at the data base.
- (h) Error Response Invalid Message Type or Data Type—notify NSS that a message with an invalid message code or an invalid data type has been received at the data base.
- (i) Free Space Response—notify NSS of the amount of free space available at the data base.
- (j) 800 Line Number Data Response—provide NSS a list of active 800 line numbers associated with an 800-XXX.
- (k) Network Management Overload Control Levels Response—provide NSS with the network management control levels for processor and destination overloads.
- (l) Manual Controls Update Response—notify NSS of action taken at the data base with respect to manual controls.
- (m) 800-Service Measurements Retrieval Response—to provide NSS with the current hour's measurements.
- (n) Network Management Data Response—provide NSS the network management designation class/threshold table.

- (o) 800-XXX-Data—provide NSS the number of lines assigned, the primary/secondary indicator, and other information about an 800-XXX.
- (p) Special Study List Update Response—notify NSS of action taken with respect to the Special Study List.
- (q) Function Status Update Response—notify NSS of action taken with respect to the status of the 800 Service function.
- (r) Function Thresholds—provide NSS 5-minute thresholds affecting the 800 Service function at the data base.
- (s) Vacant Code Data—provide NSS, for a specified 800-NXX, the vacant code turn around indicator and the vacant code sampling rate.
- (t) 800-XXX Assignment Retrieval Response—provide NSS information about 800-XXXs assigned to the data base.

**10. ADMINISTRATION CENTER RESPONSIBILITIES (NAC)**

**10.01** The following are the NAC's responsibility with respect to data base updating:

- (a) Format a customer record (NSS provided)
- (b) Set thresholds
- (c) Change sampling rates
- (d) Audit record prior to sending to data base:
  - activity type valid for customer
  - events in pairs with reasonable times
  - correct number of destination and events
  - etc.
- (e) Check data base acknowledgment against request
- (f) Place/remove network management control against an 800 number
- (g) Place/remove network management control against a destination (primarily an NOC responsibility).

**10.02** The NAC interfaces with the data base in the following areas:

- (a) Periodically retrieves customer records from mate data bases for auditing
- (b) Monitors data base characteristics
- (c) Requests switch to mate data base
- (d) Receives data base measurements
- (e) Receives exception reports
- (f) Receives special study reports
- (g) Receives sample study reports.

**11. UPDATING/BACKUP/RECOVERY**

**A. NAC Audits**

**11.01** NAC will request periodic dumps of selective active records in the data base for customer record audits.

**B. Update Control**

**11.02** The data base will delay accepting updates from the NAC when the data base is in overload. Updates will be permitted when a mate is not available. However, NAC will have to update the mate and verify that the data bases are synchronized before the mate is brought on line.

**C. File Backup and Recovery**

**11.03** To backup and recover data base files, the network control point provides facilities to be used by maintenance personnel for backup and recovery of generic programs.

**11.04** To permit recovery from uncorrectable data errors that may occur in the on-line files at a data base site, backup copies of essential files are to be maintained.

**11.05** Essential files include those containing the customer and data base parameters described in paragraph 8.03 and any associated files required; for example, for maintenance and direct access control.