

**QUALITY OF SERVICE MONITORING
SWITCH NETWORK ELEMENTS
(QSM/SNE)**

<u>CONTENTS</u>	<u>PAGE</u>
1. GENERAL	2
2. OUTLINE	2
3. APPLICATION.....	3
4. OBJECTIVE.....	4
5. GENERAL INSTRUCTIONS.....	4
6. INTERPRETATION AND USE OF RESULTS	5
7. PERFORMANCE INDICATORS - 1AESS	5
8. PERFORMANCE INDICATORS - 5ESS	11
9. PERFORMANCE INDICATORS - DMS 100	16
10. PERFORMANCE INDICATORS - AXE 10.....	22
GLOSSARY.....	27
APPENDIX 1 (DATA FLOW).....	30

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1. GENERAL

- 1.01 This document describes the Quality of Service Monitoring Plan for Switch Network Elements (QSM/SNE). This plan was developed in response to Network Operations Center Committee (NOCC) Initiative 97-002. QSM provides for a company level report intended to identify the service performance of the 1AESS, 5ESS, DMS 100, and AXE 10. QSM is an automated process.
- 1.02 QSM does not replace any other plan. QSM provides a quick health check of the specific SNE's listed under 1.01. QSM is applicable to all listed SNEs regardless of their function within the network. Items not applicable to the SNE's mission are discarded prior to establishing an overall confidence level rating for a particular SNE.
- 1.03 QSM results will be validated for one year beginning with the January '98 calendar month. The Network Integrity and Reliability District will review results on a quarterly basis and distribute summary findings to the Market Area Management Team (MAMT). A quadrennial review of this practice should be conducted by the Network Operations Staff to determine if additions, changes or deletions are required. This Quadrennial Practice Review (QPR) will act as a sunset clause to assure that QSM is updated to reflect the evolving SNE platforms.
- 1.04 The responsibility for the efficient functioning of the SNE is jointly shared by Network Operations, Network Engineering, Network Design, Network Administration and the Company Network Operations Center (CNOCC). The Network Operations Center (NOC) is responsible to coordinate and document all efforts required to correct depressed levels of service. It is anticipated that brief periods of low confidence will occur with the influence of external factors such as weather, earthquake, fire, acts of terrorism, mass calling events, unanticipated use or inadequate provisioning of the Public Switched Telephone Network (PSTN) and/or Public Packet Switched Network (PPSN).
- 1.05 A Quality of Service Monitoring plan will be written for Quality of Service Monitoring Transport Network Elements (QSM/TNE) and a Quality of Service Monitoring plan for SS7 Network Elements (QSM/C7NE).

2. OUTLINE

- 2.01 This plan is structured to evaluate the performance of the central office switch. The plan components identified on the tables in Section 7 to 14 were selected as indicators to critically evaluate the overall health of each SNE. The components selected have been grouped under four categories.

- (1) MACHINE ACCESS
- (2) SYSTEM OUTAGE
- (3) SS7 (Includes LNP)
- (4) CUSTOMER TROUBLE REPORTS

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- 2.02 Maintenance Methods and Procedures (MMP) for each switch type will aid the NOC in determining and correcting the root cause of depressed service levels. The cross reference to associated MMPs and other practices will be added as they become available to the glossary of this practice.
- 2.03 The Network Integrity and Reliability organization as well as the CNOC will share responsibility with the NOC for escalating chronic levels of depressed service to the appropriate entity for resolution.
- 2.04 QSM components are assigned a numeric weight in accordance to the perceived impact upon customer service as determined by the sponsoring team identified on Exhibit 1. Each sub item of the four categories specified in 2.01 can yield a performance value point of 1, 2, 3, or 4. The overall point value is then determined by dividing the total number of points by the total of available components. This is further described in section 3.
- 2.05 QSM components are collected on a daily basis with the company level report synchronized to the calendar month, requiring a minimum of 10 days for validity.

3. APPLICATION

- 3.01 QSM is fundamental in nature and intended to isolate SNEs where management attention can be effectively focused. QSM results are defined by level of confidence; level four (C4) being the best performance and (C1) indicating a depressed level requiring immediate attention.

Confidence Level	Performance/Threshold ²	Meaning
4	99.0 to 100 % or < 1.0 % Failures	High level of service (Point Weight 4)
3	98.5 to 98.99 or < 1.6 % Failures	High average level (Point Weight 3)
2	95.5 to 98.49 or < 1.9 % Failures	Low average level (Point Weight 2)
1	< 95.5 or > 2.0 % Failures	Below average (Point Weight 1)

- 3.02 There are many other indicators useful to managers in the detection of adverse service conditions or trends. One such indicator is the NMA control log. The NMA log evolved as a mechanized tool for collection of the Network Switching Performance Measurement Plan (NSPMP).
- 3.03 A selected group of SS7 measurements have been added to the established NSPMP collected by NMA.

² Customer Trouble Report thresholds are not covered by this table, see 7.13

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4. OBJECTIVE

- 4.01 QSM is designed to provide a confidence level for the quality of customer service provided by the 1AESS, 5ESS, DMS 100, and AXE 10. It is expected to reflect the quality of operation, administration, maintenance, network management, and engineering/provisioning relative to the central office Switch Network Element (SNE).
- 4.02 **The regional Network Operation Center (NOC) is expected to focus the efforts necessary to resolve issues pertinent to depressed service levels.** The joint cooperation and involvement of personnel from each primary area of responsibility listed under 4.01, 1.03 and 2.03 are expected to resolve problem areas.

5. GENERAL INSTRUCTIONS

- 5.01 The service month to be used for this plan will be the calendar month. Reports will be generated on a monthly basis. The accumulation of data will be mechanized to the extent possible. The only exception to automated collection and reporting is the System Outage Measurement. System outages that are machine detected will add to outages that are reported via ARMIS. Only unplanned outages will be reported and measured.
- 5.02 Components requiring data obtained from "busy hour" measurements require a minimum of 10 days' valid busy hour data for each calendar month.
- 5.03 The plan makes no provision for emptying or discounting results. The plan is intended to measure SNE performance and not individual objectives. The plan focus is on optimizing network performance by focusing on weak areas not in celebration of strong results.
- 5.04 Listed below, and in sectional order, are the MA sponsors. Each section is jointly developed by the MA, CNOC, NI, and INSO districts under the auspices of NOCC initiative 97-002.

Section	Performance Indicators	Sponsor (MA)
7	1AESS	DFW/HOU & SE, TX
8	5ESS	KS/MO
9	DMS 100	OK/AR
10	AXE 10	DFW/HOU & SE, TX

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6. INTERPRETATION AND USE OF RESULTS

- 6.01 Switching performance, as defined by this plan, is strongly dependent on the control of equipment failure rates, the availability of equipment for service, adequate provisioning of switch and network resources, effective use of the maintenance window, effective quality control of the work force, adequate network management control, and development of effective techniques to deal with new services and features. The introduction of new platforms and services without proper approval for use testing can also impact the SNE health.
- 6.02 While it may be argued that responsibility for QSM should be assigned to functional groups or individuals that can exclusively control their performance, examination of the cause of any failure reveals that such isolation is impossible.
- 6.03 Sections 7 to 11 of this practice provide a detailed view of the QSM measured components. Each component is described, the means of measure identified and references provided.

7. PERFORMANCE INDICATORS - 1AESS

The fundamental nature of this plan affords no provision for deduction of failures or exclusion of results. This includes events as described in section 1.04 and/or as the result of under provisioning of this SNE or other network resource.

- 7.01 **Machine Access** This category identifies the machine access afforded to our customers. The ability to originate, terminate, switch, and correctly furnish call progression marks from within the switch. This section, used in conjunction with the SS7 measurements, should provide a means for placing the fault either within or external to the SNE. Paragraphs 7.02 to 7.04 describe Machine Access.
- 7.02 **Dial Tone Speed (DTS)** The dial tone speed result is a measurement of the machine's capability to provide dial tone within 3 seconds during the busy hour. It is used as the primary measurement component evaluating the capability of providing originating customer service. The 1A ESS' dial tone speed tests are generated over existing idle customer lines. The originations and encountered delays score registers by class of service (dial pulse or TOUCH-TONE service). The number of dial tone speed tests and corresponding delays by class of service, as specified in translations, are printed on the quarter-hour schedule and the hourly schedule. There would normally be 225 test calls each quarter hour and 900 for the total hour. However, due to certain overloads and recovery actions which defer dial tone speed tests, this figure can vary. DTS is obtained from the NMA control record. Additional information on this item can be found in BR231-001-005.

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- 7.03 **Office Overflow (OFC OFL)** This component is a count of calls routed to regular and common overflow tone trunks. It will also include calls routed to route indexes 0180 through 0184 where provided. Any overflows on these route indexes must be subtracted from the regular or common overflow tone trunk peg count before computing the office overflow component. This measurement plan assumes the regular overflow tone trunks **do not** overflow to the common overflow tone trunks. If the regular overflow tone trunks overflow to the common overflow tone trunks, duplicate scores will occur. Overflow encountered as a result of customer-sized trunk groups (i.e., DID, PRI), or as a result of mass media calling events directed to a “choke network”, will be deducted prior to being captured on the NMA control record. Office Overflow conditions resulting from problems encountered on the SS7 network can be resolved using practice LT 231-390-207 and the associated Traffic Measurement Codes for the various SS7 parts. During the validation period identified in 1.03, the QSM committee will continue to refine office overflow to assure that customer seized trunk groups are managed.

OFC OFL is obtained from the NMA control record. Additional information on this item can be found in BR231-001-005.

- 7.04 **Matching Loss (IML)** This indicator is a count of failures to match a talking path between the incoming trunk and the called line, or on a last trial failure to find a path between the trunk and a service circuit or the called line and a ringing circuit.

IML is obtained from the NMA control log. Additional information on this item can be found in BR231-001-005. (see Glossary, item LENBP).

- 7.05 **System Outage** This category identifies overall system availability. A system outage occurs any time the function of call processing is suspended or delayed in accordance to the criteria established for switch downtime. Switch downtime and system outage are considered synonymous terms when used in this practice. The criteria for switch downtime is defined by FCC Docket 87-313. FCC reporting of switch downtime is accomplished via the Automated Reporting Management Information System (ARMIS) report. The ARMIS report is segmented to provide cumulative counts of switch downtime measured in .1/10 second increments and tabled by switch size. The ARMIS report is further delimited by outages exceeding 2 minutes and outages of less than 2 minutes.

In addition to ARMIS, another FCC Docket is used to define FCC outages on a singular entity (i.e., SNE/TNE, etc.). That docket is FCC 91-273 which is clarified by practice SW010-200-900 Service Interruption Reporting (SIRs). It is conceivable that a SNE loses sanity to the point that self counting and reporting of the outage duration is not possible. On those occasions where the duration must be manually adjusted to exceed 30 seconds, a SIR report will be required. The NOC is responsible to report all unplanned system outages via ARMIS.

System Outage Performance will be calculated by subtracting 1 point per outage from the default performance which is expected to be zero outages.

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This is accomplished by subtracting each outage from the default value of 4 (Confidence Level 4 minus outages = performance).

- 7.06 **System Outage Unplanned** Count all system-initiated automatic recoveries of Phase 4 or higher. Count all FCC reportable outages pertinent to the SNE as defined in practice SW010-200-900. Count all manually initiated Phase 4 or higher required to back out of planned additions or growth. Do not count planned outages identified on a Method of Procedure (MOP).
- 7.07 **Signaling System 7 (SS7)** This category provides the capability to measure the SNE's ability to complete calls, query data bases, manage transactions, and furnish Number Portability. SS7 components are not covered by any of the previous measurement plans. Paragraphs 7.08 to 7.11 describe the selected components in tabular format. LT 231-390-207 can also be used as a reference. The root cause of depressed SS7 results can be determined by investigating all Equipment Groups (EGs) of the associated Traffic Measurement Codes (TMC). Maintenance outputs from the 1AESS and it's Attached 3B20 Processor (APS) can also provide additional information. Daily cumulative results are printed at approximately 2:30 a.m.

The procedure for determining the Busy Hour (BH) to be measured and for gathering and summarizing the data are as currently instructed in Practice 231-070-580. When no other source is available, the default will be the DTS BH.

Note: Performance is calculated by QSM to equate with successful completion of the action in relation to the base. Points are determined by applying the completion percentage to the table under paragraph 3.01. [Base Row 1 - Failures (R2+R3) = Adj. Base] then [Adj. Base / Base x 100 = Completion %], applicable to 7.09 through 7.12

- 7.08 **Integrated Services User Part (ISUP)** The ISUP protocol defines functions, procedures, and interexchange signaling information flows. Circuit-switched connections (including message trunks) between access points are setup, supervised and released for both ISDN and non-ISDN calls at this high layer of the SS7 protocol. This measurement is intended to verify the SNE's ability to handle call setup and release. Paragraph 7.07 describes the method used for calculating ISUP performance utilizing the table below.

TMC ¹⁵⁹ ¹	Description	EG ²
1. Base	Counts the total number of attempts to seize a CCS7 timing block.	0
2. Failure	Counts the total number of times a CCS7 IAM (Initial Address Message) is not processed.	4
3. Failure	Counts CCS7 calls that failed due to a fault in the signaling network.	46

¹ TMC (Type Measurement Code)

² EG (Equipment Group)

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- 7.09 **Number Service (NS)** Defines the "800/888" Data Base Service and verifies the ability of the SNE to perform it's SSP function when a Special Access Code (SAC) is recognized. Paragraph 7.07, on the previous page, describes the method used for calculating NS performance utilizing the table below.

TMC164	Description	EG
1. Base	Counts the total number of NS calls originating at the SSP which reach the dialing complete stage.	15
2. Failure	Counts the number of times call processing routines fail before the query message is sent to SCP. This will happen when SSP is unable to get the NS data.	11
3. Failure	Counts the number of times call processing routines fail after the query message is sent to SCP.	12

- 7.10 **Advanced Intelligent Network (AIN)** Defines the ability of the SNE to perform the SSP function in regards to call processing via AIN trigger and the utilization of Service Logic created on the Integrated Services Control Point (ISCP) SS7 Node. Paragraph 7.07 on the previous page describes the method used for calculating AIN performance utilizing the table below.

TMC 180	Description	EG
1. Base	This count is pegged for all ASP line originated calls at the SSP that attempt to query. In general, for each origination (including 3/6/10-digit triggers), the originating peg count should only be pegged once. This includes forwarded calls. This count is not pegged for Serial Triggers.	6
2. Failure	This count is pegged when an ASP call is terminated before the query to the SCP is sent. The reason for an ASP call being terminated could either be from a hardware or software initialization, or because of a failure in the normal call processing routine. Any pre-Query call processing failure that can be detected by the SSP is counted under this failure (e.g., TCAP unable to send Query).	9
3. Failure	This count is pegged when an ASP call is terminated after the query is sent. The reason for an ASP call being terminated could either be of a hardware or software initialization, or because of a failure in the normal call processing routine. Any post-Query call processing failure that can be detected by the SSP is counted under this failure. This count indicates a more serious event than the previous one because of the waste in resources.	10

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- 7.11 **Number Portability (NP)** Defines the SNE's ability to deliver a query to the SCP and to correctly route the call whenever a NP trigger is encountered. Paragraph 7.07 on the previous page describes the method used for calculating NP performance utilizing the table below.

TMC 195	Description	EG
1. Base	Counts the number of calls encountering a Number Portability (NP) trigger that result in a Service Control Point (SCP) query.	0
2. Failure	Counts the number of calls encountering an NP trigger that result in an SCP query failure.	1
3. Failure	Counts the number of calls encountering an Integrated Services User Part (ISUP) REL message with an American National Standards Institute (ANSI) cause value of "misrouted call to a ported number" (26).	3

- 7.12 **Customer Trouble Reports (CTR)** This category measures the SNE's ability to provide customer service as perceived by the external customer. Reference practice 660-100-013.

Table 7.12(a) Central Offices Over 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .09	.00 to .40	.00 to .01
(3)	.10 to .15	.41 to .52	.02 to .03
(2)	.16 to .46	.53 to .57	.04 to .05
(1)	> .46	> .57	> .05

Table 7.12(b) Central Offices Under 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .14	.00 to .45	.00 to .01
(3)	.15 to .19	.46 to .57	.02 to .03
(2)	.20 to .50	.58 to .60	.04 to .05
(1)	> .50	> .60	> .05

- 7.13 **CTR Disposition Code 05X** Trouble reports with this disposition code were corrected by network operations people involved with repair and provisioning of customer lines at the SNE. See tables under paragraph 7.12.
- 7.14 **CTR Disposition Code 07 Test OK** Trouble reports with this disposition code are suspected to be caused by the SNE or a feature interaction. Tested OK inside, not dispatched outside. See tables under paragraph 7.12.
- 7.15 **CTR Disposition Code 08 Found OK** Trouble reports with this disposition code were found to be OK inside even though the initial test results showed a fault in the SNE. See tables under paragraph 7.12.

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Table 7 [1AESS]¹

LN	COMPONENT	SOURCE	WEIGHTED VALUE	MAX POINTS	CONFIDENCE LEVEL RANGE = 1-4
01	(Machine Access)				
02	Dial Tone Speed	SNE/TDMS	*1	4	
03	Office Overflow	SNE/TDMS	*1	4	
04	Matching Loss	SNE/TDMS	*1	4	
05	(System Outage)				
06	Unplanned ²	SNE/ARMIS	*1	4	
07	(SS7)				
08	ISUP	SNE/TDMS	*1	4	
09	NS	SNE/TDMS	*1	4	
10	AIN	SNE/TDMS	*1	4	
11	NP	SNE/TDMS	*1	4	
12	(CTR)				
13	Code 5	STAT	*2	8	
14	Code 7	STAT	*1	4	
15	Code 8	STAT	*1	4	

OVER ALL
CONFIDENCE LEVEL

¹ Base counts, failure counts, performance computations, and component details can be found by referencing the table number and line number to Section 8 paragraph XX (XX = Table LN #).

² The default performance is four (C4) all unplanned outages are subtracted before weighting.

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8. PERFORMANCE INDICATORS - 5ESS

The fundamental nature of this plan affords no provision for deduction of failures or exclusion of results. This includes events as described in section 1.04 and/or as the result of under provisioning of this SNE or other network resource.

- 8.01 **Machine Access** This category identifies the machine access afforded to our customers. The ability to originate, terminate, switch, and correctly furnish call progression marks from within the switch. This section, used in conjunction with the SS7 measurements, should provide a means for placing the fault either within or external to the SNE. Paragraphs 8.02 to 8.04 describe Machine Access.
- 8.02 **Dial Tone Speed (DTS)** The dial tone speed result is a measurement of the machine's capability to provide dial tone within 3 seconds during the busy hour. It is used as the primary measurement component evaluating the capability of providing originating customer service. The 5ESS' dial tone speed tests are generated over existing idle customer lines. The originations and encountered delays score registers by class of service (dial pulse or TOUCH-TONE service). The number of dial tone speed tests and corresponding delays by class of service, as specified in translations, are printed on the quarter-hour schedule and the hourly schedule. There would normally be 225 test calls each quarter hour and 900 for the total hour. However, due to certain overloads and phase actions which defer dial tone speed tests, this figure can vary. DTS is obtained from the NMA control log. Additional information on this item can be found in BR235-020-005.
- 8.03 **Office Overflow (OFC OFL)** This component is a count of calls routed to regular and common overflow tone trunks. It will also include calls routed to the following types of fixed route indexes: ovld, nca, ea1, ea2, and reorder. Any overflows on these route indexes must be subtracted from the regular or common overflow tone trunk peg count before computing the office overflow component. This measurement plan assumes the regular overflow tone trunks **do not** overflow to the common overflow tone trunks. If the regular overflow tone trunks overflow to the common overflow tone trunks, duplicate scores will occur. Overflow encountered as a result of customer-sized trunk groups (i.e., DID, PRI), or as a result of mass media calling events directed to a "choke network", will be deducted prior to being captured on the NMA control record. Office overflow conditions resulting from problems encountered on the SS7 network can be resolved using practice 235-070-100 and the associated Traffic Measurement Codes for the various SS7 parts.

OFC OFL is obtained from the NMA control log. Additional information on this item can be found in BR235-020-005.

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- 8.04 **Matching Loss (IML)** This indicator is a count of failures to match a talking path between the incoming trunk and the called line, or on a last trial failure to find a path between the trunk and a service circuit or the called line and a ringing circuit.

IML is obtained from the NMA control log. Additional information on this item can be found in BR235-020-005.

- 8.05 **System Outage** This indicator is a count of outage hours of the major equipment items in the 5ESS switch. This measurement is obtained from the equipment performance portion of the 24-hour plant measurement printout for equipment items ONTC, MSCU, MMP, FPC, and PPC. The outage is recorded in seconds.

System outages are obtained from the NMA control log and the ARMIS report. Unplanned outages will be added to reportable outages and subtracted from 4 to establish the performance of this component.

Planned outages are carried into this report as an aid in managing the switch supplier; they are not counted in the component or overall confidence level. Planned outages which affect other measured items could indicate a problem with maintenance window adherence.

- 8.06 **Emergency Action Unplanned** Count all call-processing outages caused by the initiation of SM's, AM's, or CMP's. These initiations may occur as a result of automatic recoveries or manually invoked MML commands.

- 8.07 **Signaling System 7 (SS7)** This category provides the capability to measure the SNE's ability to complete calls, query data bases, manage transactions, and furnish Number Portability. SS7 components are not covered by any of the previous measurement plans. Paragraphs 8.08 to 8.11 describe the selected components in tabular format. Lucent document 235-070-100 can also be used as a reference. The root cause of depressed SS7 results can be determined by investigating all keywords and registers of the associated section. Maintenance outputs from the 5ESS can also provide additional information. This information is provided in the PLNT24 report.

Note: Performance is calculated by QSM to equate with successful completion of the action in relation to the base. Points are determined by applying the completion percentage to the table under paragraph 3.01. $[\text{Base Row 1 - Failures (R2+R3)} = \text{Adj. Base}]$ then $[\text{Adj. Base} / \text{Base} \times 100 = \text{Completion \%}]$, applicable to 8.08 through 8.11.

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- 8.08 **Integrated Services User Part (ISUP)** The ISUP protocol defines functions, procedures, and interexchange signaling information flows. Circuit-switched connections (including message trunks) between access points are setup, supervised and released for both ISDN and non-ISDN calls at this high layer of the SS7 protocol. This measurement is intended to verify the SNE's ability to handle call setup and release. Paragraph 8.07 describes the method used for calculating ISUP performance utilizing the table below.

Section 120	Description	Keywords	Register
1. Base	Outgoing ISUP Messages	ISUPOUT	0
	Incoming ISUP Messages	ISUPIN	1
2. Failure	ISUP call failures due to incomplete address digits in the called party parameter of the received IAM. Release message with a cause value of 28 sent to the distant office.	ISUPAIF	11
3. Failure	Count of blocking messages (BLO) received on in-service ISUP trunks. Blocking messages are sent to remove trunks from service due to equipment trouble or to permit testing. This count does not represent lost calls.	ISUPBRCV	4

- 8.09 **Number Service (NS)** Defines the "800/888" Data Base Service and verifies the ability of the SNE to perform it's SSP function when a Special Access Code (SAC) is recognized. Paragraph 8.07 describes the method used for calculating NS performance utilizing the table below.

Section 91	Description	Keywords	Register
1. Base	Number Services (NS) calls originating at this switch	NSORPC	0
2. Failure	Number of NS call terminations due to call processing failure prior to sending the TCAP query to an SCP.	CPFAILBIQ	5
3. Failure	Number of NS call terminations due to call processing failure after sending the TCAP query to an SCP.	CPFAILAIO	6

- 8.10 **Advanced Intelligent Network (AIN)** Defines the ability of the SNE to perform the SSP function in regards to call processing via AIN trigger and the utilization of Service Logic created on the Integrated Services Control Point (ISCP) SS7 Node. Paragraph 8.07 describes the method used for calculating AIN performance utilizing the table below.

Section 118	Description	Keywords	Register
1. Base	This count is pegged for all ASP line originated calls at the SSP that attempt to query. In general, for each origination (including 3/6/10-digit triggers), the originating peg count should only be pegged once. This includes forwarded calls. This count is not pegged for Serial Triggers.	PVNORIG	13
2. Failure	Call processing failures before initial query. This count is pegged when an ASP call is terminated before the query to a Service Control Point (SCP) is sent.	CPFLBIQ	0

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3. Failure	Call processing failures before initial query. This count is pegged when an ASP call is terminated after the query to a Service Control Point (SCP) is sent.	CPFLAIQ	1
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- 8.11 **Number Portability (NP)*** Defines the SNE's ability to deliver a query to the SCP and to correctly route the call whenever a NP trigger is encountered. Paragraph 8.07 describes the method used for calculating NP performance utilizing the table below.

Section 117	Description	Keywords	Register
1. Base	Counts the number of calls encountering a Number Portability (NP) trigger that result in a Service Control Point (SCP) query.	LNPSCPQ	0
2. Failure	Counts the number of calls encountering an NP trigger that result in an SCP query failure.	LNPQFAIL	2
3. Failure	Counts the number of calls encountering an Integrated Services User Part (ISUP) REL message with an American National Standards Institute (ANSI) cause value of "misrouted call to a ported number" (26).	LNPREI	5

* Measurement requirements for LNP will not be supported prior to generic 5E - 12. In 5E - 12, LNP queries will be moved from Section 117 to Section 241, which will include number portability with LRN (Location Routing Number).

- 8.12 **Customer Trouble Reports (CTR)** This category measures the SNE's ability to provide customer service as perceived by the external customer. Reference practice 660-100-013.

Table 8.12(a) Central Offices Over 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .09	.00 to .40	.00 to .01
(3)	.10 to .15	.41 to .52	.02 to .03
(2)	.16 to .46	.53 to .57	.04 to .05
(1)	> .46	> .57	> .05

Table 8.12(b) Central Offices Under 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .14	.00 to .45	.00 to .01
(3)	.15 to .19	.46 to .57	.02 to .03
(2)	.20 to .50	.58 to .60	.04 to .05
(1)	> .50	> .60	> .05

- 8.13 **CTR Disposition Code 5** Trouble reports with this disposition code were corrected by network operations people involved with repair and provisioning of customer lines at the SNE. See tables under paragraph 8.12.

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8.14 **CTR Disposition Code 7 Test OK** Trouble reports with this disposition code are suspected to be caused by the SNE or a feature interaction. Tested OK inside. See tables under paragraph 8.12.

8.15 **CTR Disposition Code 8 Found OK** Trouble reports with this disposition code were found to be OK inside even though the initial test results showed a fault in the SNE. See table under paragraph 8.12.

Table 8 [5ESS]¹

LN	COMPONENT	SOURCE	WEIGHTED VALUE	MAX POINTS	CONFIDENCE LEVEL RANGE = 1-4
01	(Machine Access)				
02	Dial Tone Speed	SNE/TDMS	*1	4	
03	Office Overflow	SNE/TDMS	*1	4	
04	Matching Loss	SNE/TDMS	*1	4	
05	(System Outage)				
06	Unplanned ²	SNE/ARMIS	*1	4	
07	(SS7)				
08	ISUP	SNE/TDMS	*1	4	
09	NS	SNE/TDMS	*1	4	
10	AIN	SNE/TDMS	*1	4	
11	NP	SNE/TDMS	*1	4	
12	(CTR)				
13	Code 5	STAT	*2	8	
14	Code 7	STAT	*1	4	
15	Code 8	STAT	*1	4	

OVER ALL
CONFIDENCE LEVEL

¹ Base counts, failure counts, performance computations, and component details can be found by referencing the table number and line number to Section 8 paragraph XX (XX = Table LN #).

² The default performance is four (C4) all unplanned outages are subtracted before weighting.

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9. PERFORMANCE INDICATORS - DMS 100

The fundamental nature of this plan affords no provision for deduction of failures or exclusion of results. This includes events as described in section 1.04 and/or as the result of under provisioning of this SNE or other network resource.

- 9.01 **Machine Access** This category identifies the machine access afforded to our customers. The ability to originate, terminate, switch, and correctly furnish call progression marks from within the switch. This section, used in conjunction with the SS7 measurements, should provide a means for placing the fault either within or external to the SNE. Paragraphs 9.02 to 9.04 describe Machine Access.
- 9.02 **Dial Tone Speed (DTS)** The dial tone speed result is a measurement of the machine's capability to provide dial tone within 3 seconds during the busy hour. It is used as the primary measurement component evaluating the capability of providing originating customer service. In the DMS100 switch, the Dial Tone Speed Recording (DTSR) feature obtains data by simulating calls on Line Modules (LM) and by observing actual calls on Line Concentrating Modules (LCM). DTSR activity is reflected in OM groups DTSR and SITE, which record the following information: line types available, number of calls recorded during the accumulation period and number of calls delayed more than three seconds. From this, it is a simple matter to calculate the percentage of delayed calls and compare the results with the acceptable grade of service. OM group DTSRPM records dial tone speed for each peripheral module. DTS is obtained from the NMA control log. For more information refer to NTP 297-1001-318 Service Problem Analysis.
- 9.03 **Ineffective Machine Attempts (IMA), Office Overflow (OFC OFL)** This indicator measures the percentage of all originating and terminating calls that are not successfully connected to a trunk or line for the incoming busy hour. Base is the total number of incoming attempts from trunks recognized by the Central Control (NIN) + total number of originating attempts from lines recognized by the Central Control (NORIG) + Call Condense Block and Seizing Process (CCBOVFL) + Call Processing Letter Overflow (CPLOOVFL), **-minus** the emergency announcements and the no circuits announcements controlled by Network Management. **Failures** equal the following: INLKT, SYFL, RODR, CQOV, CGRO, AIFL, ANFL, ERDS, GNCT, MTOC, NBLN, NBLH, NOSC, NOSR, ORIGLKT, SSTS, STOB, STOC, TOVD. Calculate the percentage of failed calls and compare the results with the acceptable grade of service. (See glossary for keyword definitions.) Overflow encountered as a result of customer-sized trunk groups (i.e., DID, PRI), or as a result of mass media calling events directed to a "choke network", will be deducted prior to being captured on the NMA control record. Additional information on this item can be found in NTP297-1001-318 Service Problem Analysis.

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- 9.04 **Network Matching Loss (NML)** This indicator is a count of failures to find a network path on an outgoing or terminating basis to complete on the final (second) attempt during the Network Matching Loss time consistent busy hour. Divide the sum of the outgoing matching failures (OUTRMFL) and terminating matching failures (TRMMFL) by the sum of the outgoing network attempts (OUTNWAT) and terminating network attempts (TRMNWAT) for the percentage of NML. Additional information can be found in NTP 297-1001-318 Service Problem Analysis and NTP297-1001-304 Capacity Administration.
- 9.05 **System Outage** This category identifies overall system availability. A system outage occurs any time the function of call processing is suspended or delayed in accordance to the criteria established for switch downtime. Switch downtime and system outage are considered synonymous terms when used in this practice. The criteria for switch downtime is defined by FCC Docket 87-313. FCC reporting of switch downtime is accomplished via the Automated Reporting Management Information System (ARMIS) report. The ARMIS report is segmented to provide cumulative counts of switch downtime measured in .1/10 seconds increments and tabled by switch size. The ARMIS report is further delimited by outages exceeding 2 minutes and outages of less than 2 minutes.

In addition to ARMIS, another FCC Docket is used to define FCC outages on a singular entity (i.e., SNE/TNE, etc.). That docket is FCC 91-273 which is clarified by practice SW010-200-900, Service Interruption Reporting (SIRs). It is conceivable that a SNE loses sanity to the point that self counting and reporting of the outage duration is not possible. On those occasions where the duration must be manually adjusted to exceed 30 seconds, a SIR report will be required. The NOC is responsible to report all unplanned system outages via ARMIS.

System Outage Performance will be calculated by subtracting 1 point per outage from the default performance which is expected to be zero outages.

This is accomplished by subtracting each outage from the default value of 4. (Confidence Level 4 minus outages = performance).

- 9.06 **System Cold and System Warm Restarts Unplanned** System cold and warm restarts are synonymous with unplanned outages. Count all system-initiated automatic recoveries. Count manual cold and manual warm restarts if initiated to improve severe service degradation. Do not count if involved with a Method of Procedure (MOP). Do not count planned reloads substantiated by a signed MOP. All other reloads, whether induced manually or automatically by the processor, are considered to be unplanned and must be counted.

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- 9.07 **Signaling System 7 (SS7)** This category provides the capability to measure the SNE's ability to complete calls, query data bases, manage transactions, and furnish Number Portability. SS7 components are not covered by any of the previous measurement plans. Paragraphs 9.08 to 9.11 describe the selected components in tabular format. The root cause of depressed SS7 results can be determined by investigating all SS7 keywords in the Bellcore EADAS document for the DMS100, and the Signaling Engineering and Administration System (SEAS) includes logs, alarms, and interfaces to further monitor SS7 in NTP 297-1001-531.

Note: Performance is calculated by QSM to equate with successful completion of the action in relation to the base. Points are determined by applying the completion percentage to the table under paragraph 3.01. [Base Row 1 - Failures (R2+R3) = Adj. Base] then [Adj. Base / Base x 100 = Completion %], applicable to 9.09 through 9.12.

- 9.08 **Integrated Services User Part (ISUP)** ISUP provides the signaling functions required to provide voice and data service in a CCS7 network. It also provides inter-exchange signaling to support the normal trunk dialing and supervisory functions for interoffice trunks using CCS7 protocol. ISUP trunks are interoffice circuits that carry voice and data traffic between originating and terminating signaling points or service switching points. An ISUP call is failed after two attempts at connection have failed.

Section 77 & 38	Description	OM Group	Keywords
1. Base (Total Messages)	Counts successful incoming and outgoing ISUP calls.	ISUPUSAG	ISMSGOUT+(ISMSG0T2 X 65,536)+ISMSGIN+(ISMSGIN 2X65,536) (Section 77)
2. Failure (Fail Add)	Calls failing due to invalid format or incomplete address digits.	ISUPCONN	ISCNUA (Section 38)
3. Failure BLO (Blocking)	Count of blocking messages received on in service ISUP trunks. This count does not represent lost calls.	ISUPUSAG	ISMSGIN+(ISMSGIN2 X 65,536) (Tuple #2 OM_BLO) (Section 77)

- 9.09 **Number Service (NS)** Defines the "800/888" Data Base Service and verifies the ability of the SNE to perform it's SSP function when a Special Access Code (SAC) is recognized. Paragraph 9.07 above describes the methods used for calculating AIN performance utilizing the table.

Section 17	Description	OM Group	Keywords
1. Base (total calls)	Counts the total number of NS calls originating at the SSP which reach the dialing complete stage.	NSC	NSCORIG+NSCATIN
2. Fail (Fail BIQ)	Counts the number of times call processing routines fail before the query message is sent to the SCP.	NSC	NSCTOFL+NSCSFEA+NSCPRIQ
3. Fail (Fail AIQ)	Counts the number of times call processing routines fail after the query message is sent to the SCP.	NSC	NSCFAIL+ NSCLICM+ NSCLICS+NSCT2TO+ NSCIVCAR

See Bellcore EADAS Keyword Document Section 17

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- 9.10 **Advanced Intelligent Network (AIN)** Defines the ability of the SNE to perform the SSP function in regards to call processing via AIN trigger and the utilization of Service Logic created on the Integrated Services Control Point (ISCP) SS7 Node.

Section 183	Description	OM Group	Keywords
1. Base (total triggers)	This count is pegged for all ASP line originated calls at the SSP that attempt to query. In general, for each origination (including 3/6/10-digit triggers), the originating peg count should only be pegged once. This includes forwarded calls. This count is not pegged for Serial Triggers.	AIN	TRIG
2. Failures (Failed BIQ)	This count is pegged when an ASP call is terminated before the query to the SCP is sent. The reason for an ASP call being terminated could either be from a hardware or software initialization or because of a failure in the normal call processing routine. Any pre-Query call processing failure that can be detected by the SSP is counted under this failure (e.g., TCAP unable to send Query).	AIN	CPLBFQ+ MAXQEXCD+ TIBFQOFL+ CIBFQOFL
3. Failures (Failed AIQ)	This count is pegged when an ASP call is terminated after the query is sent. The reason for an ASP call being terminated could either be of a hardware or software initialization or because of a failure in the normal call processing routine. Any post-Query call processing failure that can be detected by the SSP is counted under this failure. This count indicates a more serious event than the previous one because of the waste in resources.	AIN	AMAMAX+ CPLAFQ+ TIAFQOFL+ CIAFQOFL

- 9.11 **Number Portability (NP)** Defines the SNE's ability to deliver a query to the SCP and to correctly route the call whenever a NP trigger is encountered. Paragraph 9.07 describes the method used for calculating NP performance utilizing the table below.

Section 200	Description	OM Group	Keywords
1. Base	Counts the number of calls encountering a Number Portability (NP) Trigger that result in a Service Control Point (SCP) query.	LNP	LNPQRY
2. Failure (SCPQ)	Counts the number of calls encountering an NP trigger that result in an SCP query failure.	LNP	LNPQFRT+ LNPQFSCP+ LNPQFSSP+ LNPUADNR+ LNPUAHOM
3. Fail (MISROUTE 26)	Counts the number of calls encountering an Integrated Services User Part (ISUP) REL message with an American National Standards Institute (ANSI) cause value of "misrouted call to a ported number" (26).	LNP	LNPREL

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- 9.12 **Customer Trouble Reports (CTR)** This category measures the SNE's ability to provide customer service as perceived by the external customer. Reference practice 660-100-013.

Table 9.12(a) Central Offices Over 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .09	.00 to .40	.00 to .01
(3)	.10 to .15	.41 to .52	.02 to .03
(2)	.16 to .46	.53 to .57	.04 to .05
(1)	> .46	> .57	> .05

Table 9.12(b) Central Offices Under 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .14	.00 to .45	.00 to .01
(3)	.15 to .19	.46 to .57	.02 to .03
(2)	.20 to .50	.58 to .60	.04 to .05
(1)	> .50	> .60	> .05

- 9.13 **CTR Disposition Code 05X** Trouble reports with this disposition code were corrected by network operations people involved with repair and provisioning of customer lines at the SNE. See tables under paragraph 9.12.
- 9.14 **CTR Disposition Code 07 Test OK** Trouble reports with this disposition code are suspected to be caused by the SNE or a feature interaction. Tested OK inside, not dispatched outside. See tables under paragraph 9.12.
- 9.15 **CTR Disposition Code 08 Found OK** Trouble reports with this disposition code were found to be OK inside even though the initial test results showed a fault in the SNE. See tables under paragraph 9.12.

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Table 9 [DMS100]¹

LN	COMPONENT	SOURCE	WEIGHTED VALUE	MAX POINTS	CONFIDENCE LEVEL RANGE = 1-4
01	(Machine Access)				
02	Dial Tone Speed	SNE/TDMS	*1	4	
03	IMA/Office Ovfl.	SNE/TDMS	*1	4	
04	Matching Loss	SNE/TDMS	*1	4	
05	(System Outage)				
06	Unplanned ²	SNE/ARMIS	*1	4	
07	(SS7)				
08	ISUP	SNE/TDMS	*1	4	
09	NS	SNE/TDMS	*1	4	
10	AIN	SNE/TDMS	*1	4	
11	NP	SNE/TDMS	*1	4	
12	(CTR)				
13	Code 5	STAT	*2	8	
14	Code 7	STAT	*1	4	
15	Code 8	STAT	*1	4	

OVER ALL
CONFIDENCE LEVEL

¹ Base counts, failure counts, performance computations, and component details can be found by referencing the table number and line number to Section 8 paragraph XX (XX = Table LN #).

² The default performance is four (C4) all unplanned outages are subtracted before weighting.

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10. PERFORMANCE INDICATORS - AXE 10

The fundamental nature of this plan affords no provision for deduction of failures or exclusion of results. This includes events as described in section 1.04 and/or as the result of under provisioning of this SNE or other network resource.

10.01 Machine Access This category identifies the machine access afforded to our customers. The ability to originate, terminate, switch, and correctly furnish call progression marks from within the switch. This section, used in conjunction with the SS7 measurements, should provide a means for placing the fault either within or external to the SNE. Paragraphs 10.02 to 10.04 describe Machine Access.

10.02 Dial Tone Speed (DTS) The dial tone speed result is a measurement of the machine's capability to provide dial tone within 3 seconds during the busy hour. It is used as the primary measurement component evaluating the capability of providing originating customer service. In the AXE 10 switch, Dial Tone Delay is measured from detection of off-hook in EMRP until tone sending starts or on-hook is received (abandoned call). Delay is measured on sampled calls of real ordinary subscriber traffic according to the following principle : The last 512 calls every 100 seconds-period are sampled (i.e. observed), for a maximum of 18,432 calls per hour of ordinary subscriber traffic.

DTS activity is reflected in Object Type DTDSUBS for both Dial Pulse (DP) and Dual Tone Multi-Frequency (DTMF) services. The recording parameters are defined per subscriber stage Extension Module Group (EMG), which are identified by the EMG number. The information recorded includes: number of observed non-abandoned calls (DPCALL and MFCALL); number of calls where the dial-tone-delay exceeds threshold 6 (>3.0 s and < 3.5 s) and threshold 7 (>3.5 s) (DPDLR4 and MFDLR4).

DTS is obtained from the NMA control log. For more information refer to Functional Specification (FS) 2/155 17-ANTU 211 15/1 Uen - Counters in the Measurement Database for Traffic and Event Measurements in the SSS Subsystem.

10.03 Overflow (OFL) These indicators measure the percentage of all originating and terminating calls that are not successfully connected to a trunk or line for the incoming busy hour. There are several types of overflow included in this component: Keyset Receiver (KRC); Code Sender/Receiver (CSR); and Office Overflow (OFC OFL).

The object type used to record KRC overflow is KRROUTE and is defined by route name or number, usually number. The recording parameters are: number of KR seizure attempts (SEIZ); number of queued KR seizure attempts (QSEIZ); and number of fetched queued KR seizure attempts (AQSEIZ).

CSRROUTE is the object type used for CSR overflow. The recording parameters are: number of MF seizure attempts (SEIZ); number of queued seizure events (QSEIZ); and number of fetched queued seizure events (AQSEIZ). CSR overflow is also defined by the route name/number.

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Office overflow uses the object type TRAFFTYPE and a single recording parameter, NOCIR, which indicates no circuit because of inter switch congestion. Office overflow is defined by the following counters: incoming external (IEX); outgoing external (OEX); internal (INT); originating (ORG); terminating (TE); transit (TRA); originating outgoing (ORGOEX); and incoming terminating (IEXTE). The number of originating calls offered to the load supervision function of the entire switch (ORGSEIZ) parameter of object type LOAS is also used. Overflow encountered as a result of customer-sized trunk groups (i.e., DID, PRI), or as a result of mass media calling events directed to a "choke network", will be deducted prior to being captured on the NMA control record.

OFL is obtained from the NMA control log. For more information refer to A 1551-FCDU 103 2001 Uae - Statistics Measurements, Initial Reports.

- 10.04 **Matching Loss (ML)** This indicator is a count of failures to find a network path on an outgoing or terminating basis to complete on the final (second) attempt during the Matching Loss time consistent busy hour. Object Type TRAFFTYPE is used, this time with a recording parameter that records failures to match because of intraswitch congestion (FTMTCH). The counters used are again IEX, OEX, INT, ORG, TE, TRA, ORGOEX, and IEXTE. Recording parameter ORGSEIZ of object type LOAS is also used along with IEXSEIZ, which is the number of incoming seizures offered the load supervision function of the entire switch.

ML is obtained from the NMA control log. For more information refer to A 1551-FCDU 103 2001 Uae - Statistics Measurements, Initial Reports.

- 10.05 **System Outage** This category identifies overall system availability. A system outage occurs any time the function of call processing is suspended or delayed in accordance to the criteria established for switch downtime. Switch downtime and system outage are considered synonymous terms when used in this practice. The criteria for switch downtime is defined by FCC Docket 87-313. FCC reporting of switch down time is accomplished via the Automated Reporting Management Information System (ARMIS) report. The ARMIS report is segmented to provide cumulative counts of switch downtime measured in .1/10 seconds increments and tabled by switch size. The ARMIS report is further delimited by outages exceeding 2 minutes and outages of less than 2 minutes.

In addition to ARMIS, another FCC Docket is used to define FCC outages on a singular entity (i.e. SNE/TNE etc.). That docket is FCC 91-273 which is clarified by practice SW010-200-900, Service Interruption Reporting (SIRS). It is conceivable that a SNE loses sanity to the point that self counting and reporting of the outage duration is not possible. On those occasions where the duration must be manually adjusted to exceed 30 seconds, a SIR report will be required. The NOC is responsible to report all unplanned system outages via ARMIS.

System Outage Performance will be calculated by subtracting 1 point per outage from the default performance which is expected to be zero outages. This is accomplished by subtracting each outage from the default of 4 (Confidence Level 4 minus outages = performance).

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- 10.06 **System Outage Unplanned** Count all automatic small (NSMLA), large (NLRGA) or large with reload (NRELA) restarts. Count all FCC reportable outages pertinent to the SNE as defined in practice SW010-200-900. Count all manually-initiated small (NSMLM), large (NLRGM) or large with reload (NRELM) restarts. Do not count planned outages identified on a Methods of Procedure (MOP).
- 10.07 **Signaling System 7 (SS7)** This category provides the capability to measure the SNE's ability to complete calls, query data bases, manage transactions, and furnish Number Portability. SS7 components are not covered by any of the previous measurement plans. Paragraphs 10.08 to 10.11 describe the selected components in tabular format. The root cause of depressed SS7 results can be determined by investigating all SS7 keywords in the Bellcore EADAS document for the AXE10.

Note: Performance is calculated by QSM to equate with successful completion of the action in relation to the base. Points are determined by applying the completion percentage to the table under paragraph 3.01. [Base Row 1 - Failures (R2+R3) = Adj. Base] then [Adj. Base / Base x 100 = Completion %], applicable to 7.09 through 7.12

- 10.08 **Number Service (NS)** Defines the "800/888" Data Base Service and verifies the ability of the SNE to perform it's SSP function when a Special Access Code (SAC) is recognized.

Section 58	Description	Keywords
1. Base (total calls)	Counts the total number of NS calls reaching the SSP (NSC), NS calls received from other offices (NSCFO), and NS calls originated by locally connected customers (NSCLS).	NSC+NSCFO+NSCLS
2. Fail (Fail BIQ)	Counts the number of times call processing routines fail before the initial query message is sent to the SCP.	CFBIQ
3. Fail (Fail AIQ)	Counts the number of times call processing routines fail after the initial query message is sent to the SCP.	CFAIQ

- 10.09 **Advanced Intelligent Network (AIN)** Defines the ability of the SNE to perform the SSP function in regards to call processing via AIN trigger and the utilization of Service Logic created on the Integrated Services Control Point (ISCP) SS7 Node.

Section 89 and 90	Description	Keywords
1. Base (total triggers)	This count is pegged for all ASP line originated calls at the SSP that attempt to query. In general, for each origination (including 3/6/10-digit triggers), the originating peg count should only be pegged once. This includes forwarded calls. This count is not pegged for Serial Triggers.	AINOHI+AINOHD+AIN3610+AINN11+AINAFR+AINTA
2. Failures (Failed BIQ)	Call processing failures before initial query. This count is pegged when an ASP call is terminated before the query to the SCP is sent.	FAILB4
3. Failures (Failed AIQ)	Call processing failures after initial query. This count is pegged when an ASP call is terminated after the query to the SCP is sent.	FAILAFT

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- 10.10 **Number Portability (NP)** Defines the SNE's ability to deliver a query to the SCP and to correctly route the call whenever a NP trigger is encountered. Number Portability is provided in LR8.0/AS308, but data is not currently available. This section will be updated once this changes.
- 10.11 **Customer Trouble Reports (CTR)** This category measures the SNE's ability to provide customer service as perceived by the external customer. Reference practice 660-100-013.

Table 10.11(a) Central Offices Over 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .09	.00 to .40	.00 to .01
(3)	.10 to .15	.41 to .52	.02 to .03
(2)	.16 to .46	.53 to .57	.04 to .05
(1)	> .46	> .57	> .05

Table 10.11(b) Central Offices Under 5000 Subscribers

Confidence Level	Code 5 RPHL	Code 7 RPHL	Code 8 RPHL
(4)	.00 to .14	.00 to .45	.00 to .01
(3)	.15 to .19	.46 to .57	.02 to .03
(2)	.20 to .50	.58 to .60	.04 to .05
(1)	> .50	> .60	> .05

- 10.12 **CTR Disposition Code 05X** Trouble reports with this disposition code were corrected by network operations people involved with repair and provisioning of customer lines at the SNE. See tables under paragraph 10.11.
- 10.13 **CTR Disposition Code 07 Test OK** Trouble reports with this disposition code are suspected to be caused by the SNE or a feature interaction. Tested OK inside, not dispatched outside. See tables under paragraph 10.11.
- 10.14 **CTR Disposition Code 08 Found OK** Trouble reports with this disposition code were found to be OK inside even though the initial test results showed a fault in the SNE. See tables under paragraph 10.11.

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Table 10 [AXE10]¹

LN	COMPONENT	SOURCE	WEIGHTED VALUE	MAX POINTS	CONFIDENCE LEVEL RANGE = 1-4
01	(Machine Access)				
02	Dial Tone Speed	SNE/TDMS	*1	4	
03	Office Overflow	SNE/TDMS	*1	4	
04	Matching Loss	SNE/TDMS	*1	4	
05	(System Outage)				
06	Unplanned ²	SNE/ARMIS	*1	4	
07	(SS7)				
08	NS	SNE/TDMS	*1	4	
09	AIN	SNE/TDMS	*1	4	
10	NP	SNE/TDMS	*1	4	
11	(CTR)				
12	Code 5	STAT	*2	8	
13	Code 7	STAT	*1	4	
14	Code 8	STAT	*1	4	

OVER ALL
CONFIDENCE LEVEL

¹ Base counts, failure counts, performance computations, and component details can be found by referencing the table number and line number to Section 8 paragraph XX (XX = Table LN #).

² The default performance is four (C4) all unplanned outages are subtracted before weighting.

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GLOSSARY

AIFL – Automatic Identified Outward Dialing Overflow keyword

AIN - Advanced Intelligent Network

ANFL – Announcement Fail keyword

CCBOVFL – Call Condense Block and Seizing Process keyword

CGRO – Customer Group Resource Overflow

CNOC — Company Network Operations Center

CPLOOVFL – Call Processing Letter Overflow keyword

CQOV – Cama Que Overflow keyword

ERDS – Trunks Permanent Ground keyword

GNCT – General No Circuits Announcement keyword

LENBP - 1AESS line and trunk network path blocking analysis tool. Use to determine source of IML.

INLKT – Incoming Calls Failing and Routed to Lockout keyword

LNP — Local Number Portability

MAMT - Market Area Management Team

MMP - Maintenance Methods and Procedures

MTOC – MFC Timeout for Confusion keyword

NBLN – Network Blockage Normal Traffic

NBLH – Network Blockage Heavy Traffic

NCRT – No Circuit Treatment

NMA - Network Monitoring and Analysis system

NIN – Total number of originating attempts from trunks recognized by the Central Control keyword

NOCC - Network Operations Center Committee

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NOC — Network Operations Center

NORIG – Total number of originating attempts from lines recognized by the Central Control keyword

NOSC – No service circuits keyword

NOSR – No Software Resource keyword

NSPMP - Network Switching Performance Measurement Plan

ORIGLKT – Originating calls forced to re-originate without connection or treatment keyword

PSTN - Public Switched Telephone Network

PPSN - Public Packet Switched Network

QSM - Quality Service Monitoring

RODR – Reorder keyword

SNE — Switch Network Element

SSTO – Start Signal Timeout keyword

STOB – Signal Timeout BOC (Bell Operating Company) keyword

STOC – Signal Timeout OC (other company) keyword

STP — Signal Transfer Point

SYFL – System Failure keyword

TOVD - Toll Overload, see table TMTNCTL

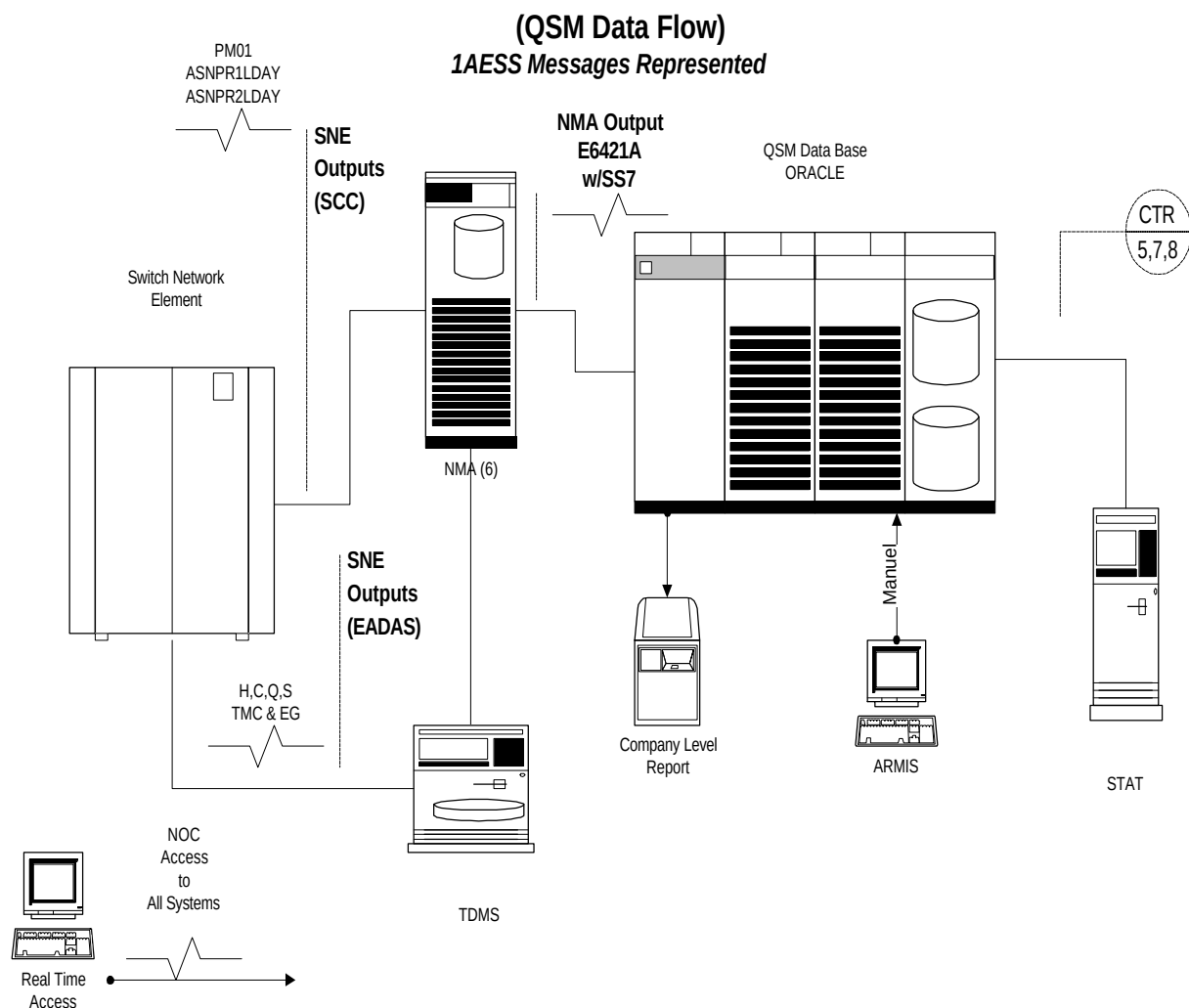
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