

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

DA 91-619

In the Matter of)
)
Policy and Rules Concerning Rates) CC Docket No. 87-313
for Dominant Carriers)
)

MEMORANDUM OPINION AND ORDER

Adopted: May 16, 1991 ; Released: May 17, 1991

By the Chief, Common Carrier Bureau:

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I. INTRODUCTION

1. On March 8, 1991, the Common Carrier Bureau (Bureau) released a Public Notice suggesting service quality reporting requirements for local exchange carriers (LECs) subject to price cap regulation, and soliciting

comments on its proposed reports.¹ On April 10, 1991, 25 parties filed comments; 16 parties filed reply comments on April 25.² In this Order we consider the various submissions and finalize the reporting format to be used by price cap LECs beginning with the first report, due June 30, 1991. Attachment A lists parties and filings; Attachment B annotates modifications suggested by the parties or devised by the Bureau; and Attachment C contains the reporting tables.

2. In the LEC Price Cap Order, the Commission considered suggestions that the implementation of price cap regulation for LECs could create cost-cutting incentives that might result in degradation of service quality and diminishing investment in network infrastructure development.³ The Commission concluded that price cap regulation will provide the LECs with the impetus and opportunity to create and advance a communications network that will keep the United States at the forefront of a worldwide "information economy," and will encourage the LECs in network modernization, advanced applications, and new services, through investment incentives. That Order also reiterated the Commission's commitment to assuring the availability of high quality, innovative communications services and to the development of the telecommunications infrastructure needed to provide these services. The LEC Price Cap Reconsideration Order affirmed this commitment, stressing the LECs' efficiency incentives to modernize the network.⁴

3. In order to evaluate the actual effects of price cap regulation on service quality and network modernization, the Commission decided to expand significantly the monitoring of service quality and infrastructure development. The Commission determined that all price cap LECs (including LECs that elect to be covered by the price cap rules) will be required to submit quarterly service quality reports. Further, local exchange carriers for whom price cap regulation is mandatory⁵ will be required to file the

1 Public Notice, 6 FCC Rcd 1621 (Com.Car.Bur. 1991) (March 8 Public Notice).

2 Attachment A lists parties' pleadings.

3 Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Second Report and Order, 5 FCC Rcd 6786, 6827-31 (1990) (LEC Price Cap Order).

4 Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Order on Reconsideration, FCC 91-115, released April 17, 1991 (LEC Price Cap Reconsideration Order) at para. 178.

5 The mandatory price cap LECs are GTOC and the Regional Bell Operating Companies: Ameritech, Bell Atlantic, BellSouth, NYNEX, Pactel, SWB and US West.

semiannual service quality information requirements. The mandatory price cap LECs will also be required to submit infrastructure reports annually.⁶ The Commission delegated to the Chief, Common Carrier Bureau, authority to establish reporting requirements designed to capture trends in service quality and telephone industry infrastructure development under price cap regulation, and improve and standardize existing reporting requirements for this purpose. The Commission determined what reports are required, and delegated to the Bureau the establishment of particular reporting formats. Pleadings received leading up to the LEC Price Cap Reconsideration Order have been incorporated into the record of the Bureau's reporting proceeding when those pleadings raise issues that were delegated to the Bureau.

4. As stated in the March 8 Public Notice, we are particularly concerned that our reporting requirements be clear and usable, and that the reports we require be reasonably designed to allow the Commission and interested parties to gain a meaningful overview of LEC service quality and infrastructure development under price caps. To that end, we invited comments particularly on our proposed definitions and explanations of the measurements solicited. In developing these reporting requirements, the Bureau attempted to balance the need for data that will accurately reflect trends in service quality and infrastructure development with our goal of minimizing the administrative costs of LECs. The March 8 Public Notice included attachments displaying the proposed reports as the carriers would submit them.

5. Most parties voice support for our efforts to establish reports to monitor price cap LECs' service quality and infrastructure development, although some believe some modification may be needed. While LECs tend to argue that the proposed reporting requirements are overly burdensome, they generally propose minor adjustments or reorganization of the tables.⁷ MCI also agrees that the proposed service quality and infrastructure reports meet the goal of achieving a proper balance between adequate and meaningful reports and avoidance of placing useless administrative burdens on the LECs.⁸ Other parties argue that the scope of reporting requirements should be broadened. In our discussion here and in Attachment B, we address each of the issues raised concerning our proposed reporting requirements. We first decide service quality reporting issues, then turn to the reporting of infrastructure development. Finally, we address various other issues parties have raised.

6 LEC Price Cap Order, 5 FCC Rcd at 6827-30, aff'd LEC Price Cap Reconsideration Order at paras. 174-184.

7 See, e.g., USTA Comments at 2-5 and annotated Attachment.

8 MCI Comments at 2.

II. SERVICE QUALITY REPORTS

A. Quarterly Reports

Table I - Interexchange Access Installation and Repair Intervals

6. As presented in the March 8 Public Notice, Table I collected data on installation intervals for both interexchange access service and local service; Table II collected data on interexchange access repair intervals; Table III collected data on local service trouble reports.⁹ In the interests of simplicity and clarity, and because most LECs have different operational and reporting systems for local service and for access service, we have decided to reorganize our reports so that Table I includes access service installation and repair intervals, and Table II includes local service installations and trouble reports. The discussion below incorporates this reorganization.

7. Table I, as presented in the March 8 Public Notice, collects information concerning the time interval between the order and installation of circuits from the LEC office to an interexchange carrier (IC) point of presence (POP) for interLATA service. Table I collects the total number of orders or circuits, the percentage of commitments met during the three-month reporting period, and the average interval of missed commitments.¹⁰ The commitment dates for various kinds of installations are published by the LECs for their customers and prospective customers; these lists must now be kept on file with the Commission.¹¹

8. A number of parties raise the issue of whether to include local service information in the reports on installation intervals.¹² Our

9 Although the March 8 Public Notice referred to "Table 1," we will use Roman numerals for the sake of consistency with other ARMIS reports.

10 These categories are separated between switched and special access circuits.

11 March 8 Public Notice, Attachment A, Table I, n. 4. Some commitment dates are established through negotiation on an individual case basis. These will not be filed with the Commission.

12 See, e.g., Florida Comments at 3; NARUC Comments at 7 (contending that installation intervals for local service should be reported). But see BellSouth Reply at 6 (Commission should focus on interstate services). Table 1 as attached to the March 8 Public Notice did not include local service data.

quarterly report should be a combination of the installation interval report suggested in the BellSouth/Rochester plan¹³ and the "On Time Service Orders" report we have been collecting from the BOCs since divestiture.¹⁴ In the LEC Price Cap Order, the Commission decided that the BOC semiannual report's installation interval data should be reported quarterly rather than semiannually. According to the Commission, the reports we establish "should provide sufficient information to permit evaluation of LEC performance in areas of most concern to local customers, installing and maintaining their service and completing their calls."¹⁵ Furthermore, we find that we are not jurisdictionally barred from including local service installation interval data in our reporting requirement, continuing a requirement that has been in place for several years.¹⁶ Our regulation of the interstate jurisdiction occasionally requires us to monitor the effects of our regulations on intrastate operations of the carriers.¹⁷ We do believe, however, that combining local service installation reports with the proposed Table I would create some difficulties that we can avoid by creating a separate table for reporting of local service installations and repairs. We have accordingly determined that Table I will record installation intervals and repair intervals for LEC interexchange access service, and Table II will record installation intervals and repair data for LEC local services. See Attachment C.

9. In addition to the issue of the scope of installation interval reports, parties raise several definitional issues. The definitions of switched access and special access, and of circuits and orders, stimulated many suggestions for clarification.¹⁸ To the extent that these clarifications are consistent with the objectives of the Commission in collecting this information, they have been incorporated in the instructions accompanying the tables.

13 See LEC Price Cap Order, 5 FCC Rcd at 6828.

14 The BellSouth/Rochester Plan reported interstate access installations only. The BOC semiannual report included residential, business/special, and interstate access installations.

15 LEC Price Cap Order, 5 FCC Rcd at 6828, para. 342.

16 Accord NARUC Comments at 7.

17 See, e.g., MTS and WATS Market Structure, Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board, CC Docket Nos. 78-72 and 80-286, Establishment of a Program to Monitor the Impact of Joint Board Decisions, 2 FCC Rcd 3298 (1987).

18 These arguments are detailed and addressed in Attachment B.

10. Table II of the March 8 Public Notice addresses interexchange access service Repair Intervals (circuit-specific trouble reports that are referred to the LEC). As discussed above, this information will now be included in Table I, Interexchange Access Installation and Repair Intervals. As proposed, this report seeks to determine the average time interval from the time of the LEC's receipt of the trouble report to the time of acceptance by the IC control office. This information is divided between switched and special access.

11. Comments concerning repair data (Tables II and III of the March 8 Public Notice) fall into two general categories: those suggesting or seeking clarifications of instructions, and those suggesting either a greater or lesser extent of detail.¹⁹ Most of the requests for clarification concern the lack of clarity regarding data on interexchange access service repairs as opposed to local service repairs;²⁰ we believe those questions are resolved by our reorganization of the reports. To the extent that suggested clarifications will contribute to the value and uniformity of information reported, we have included them in the attached instructions. With respect to the level of detail, we have carefully considered all arguments raised. Our objective is to develop a sufficient amount of information to allow discernment of any trends of service degradation. By specifying too little detail, we could allow indicators of change to disappear; by specifying too much detail, we could create a reporting system that is unmanageable and difficult to use, and that would impose unwarranted burdens on the reporting LECs. We therefore adhere to the level of detail we proposed in the March 8 Public Notice.

12. We have also included in Table I a further breakdown of data in the repair interval report, to include high-speed data lines in the special access category. We had proposed to include data transmission service quality reporting in the Semiannual Reports; the March 8 Public Notice solicited comments on the inclusion of reporting on bit error rate, availability, and error-free seconds.²¹ However, we are persuaded for several reasons that the inclusion of high speed data transmission in the repair interval report is a better approach. First, a requirement that LECs record and report these measures is undesirable because it is intrusive on service²² and very

19 See, e.g., TCA Comments at 13 (recommending expansion); but see USTA Comments at 31.

20 For more detail, see Attachment B.

21 These comments are summarized and discussed in Attachment B.

22 Accord SWB Reply at 6; TCA Reply at 16-17.

costly.²³ While we believe that reporting on bit error rate, availability, and error free seconds is important, it is also clear that it fails to establish the balance between usefulness and burden that the Commission directed us to seek. Second, including the requirement in the Semiannual Report would make it applicable only to the mandatory price cap LECs, not to all price cap LECs, and would reduce the frequency of reporting from every three months to every six months. Further, we know that such testing and monitoring are available on a tariffed basis, and that the complaint process is available if needed. High speed special access customers who believe they are receiving inadequate service can resort to tariffed testing and/or trouble reports; if they are unable to receive satisfaction on this point with the LEC providing the service (through reference to a quality control biparty discussion, or a regional or national industry group) they can file complaints with the Commission.

13. Finally, we note that the technology is now available and is beginning to be deployed that will allow for non-intrusive monitoring of high speed data transmission. It is likely that such monitoring and reporting will become the norm. As that occurs, we can revisit this monitoring issue. In the meantime, we note with approval the ongoing attempts of various industry forums to reach consensus on realistic and up-to-date standards for high speed data transmission. Presumably it was such services that the Commission included in its exhortation to LECs to accept the incentives of price cap regulation as creating an opportunity to build the national infrastructure.²⁴ High quality service for DS1 and higher data transmission uses is also within the scope of factors the Commission will consider in its upcoming performance review of price cap LECs and the price cap plan.

Table II - Local Service Installation and Repair Reports

14. We have created a report for local service installations that mirrors the semiannual report's collection of this data; it includes a total number of orders and a percentage of on-time installations. Orders are separated into residence and business. Further, in keeping with our concerns regarding the possibility of distinctions between service quality in rural areas as opposed to urban areas, the report also separates MSA and non-MSA installation orders. This is consistent with our treatment of local service trouble reports.

15. Reporting requirements for local service Trouble Reports were set forth in Table III of the March 8 Public Notice, which requests information

23 See SWB Reply at 5-12 (estimating industry-wide cost at \$1 billion).

24 LEC Price Cap Order, 5 FCC Rcd at 6834-35.

concerning complaints of service quality made by customers or end users to LECs. That report is now incorporated into Table II. The proposed report breaks trouble reports into business and residential and into MSAs and non-MSAs. As noted above, challengers focused on the level of detail and some definitional ambiguities.²⁵ We have resolved these issues as noted, incorporating such suggested modifications as are useful.

Table III - Trunk Blockage

16. As proposed in the March 8 Public Notice, this table collects information concerning trunk blockage on a quarterly basis.²⁶ Blocking is measured as a percentage of calls that fail to be completed due to equipment malfunction or inadequate facilities. Blockage will be reported in this report in two measures, for each month of the quarter. Specifically, LECs will report the number of trunk groups that exceed the reporting carrier's servicing threshold,²⁷ and the number of trunk groups that exceed equipment design blocking objectives.²⁸ We require data on the number of trunk groups exceeding servicing threshold for one and three months and the number exceeding design blocking objectives for three months.

17. The majority of comments focus on whether servicing threshold and design blocking objective are the best measures of trunk blockage, and address ways to define them.²⁹ We have considered these suggestions; we are not persuaded that for our purposes here we should use measures other than servicing threshold and design blocking objectives. The Table relies on carriers' tariffed servicing thresholds, and states that design blocking objectives range from 0.5 percent to 1.0 percent.

18. The Commission directed that the trunk blocking data requirement be eliminated from the semiannual reports if that was necessary to avoid redundancy.³⁰ Although the reports are not identical, we believe that the

25 For a more detailed discussion, see Attachment B.

26 Trunk blockage reporting was Table IV in the March 8 Public Notice.

27 Servicing threshold is the carrier's interstate access tariff measured blocking threshold.

28 Design blocking objective is the level of blocking for which a trunk group is sized.

29 See Attachment B.

30 LEC Price Cap Order, 5 FCC Rcd at 6828, para. 342.

data required in Table 3 of the quarterly report is sufficient to serve our monitoring purposes, and we accordingly delete trunk blockage reporting from the semiannual reports.

Table IV - Total Switch Downtime

19. The March 8 Public Notice table on Total Switch Downtime seeks information to monitor the number, size, and urban/rural character of switches experiencing a loss of the ability to process calls. The report seeks, inter alia, the amount of downtime in seconds. Information on an incident-by-incident basis is requested for downtime occurrences of two minutes or more. A number of parties offer or request clarification.³¹ We have incorporated such modifications as we believe will be helpful; for example, we have clarified the difference between scheduled and unscheduled downtime,³² and have more clearly defined switching entities. We have also specifically declined to adopt USTA's suggested modification of the definition of downtime to include stable calls.³³ Such a change would restrict the incidence of downtime below the level we seek to capture in this report.

Table V - Service Quality Complaints

20. This Table seeks information on an MSA and non-MSA basis concerning federal and state, and business and residential, service quality complaints.³⁴ The table explicitly excludes complaints relating to billing, operator services or 900 services.³⁵

31 See SNET Comments at 8; United Comments at 8; SWB Comments at 23.

32 A number of parties suggested that we eliminate scheduled downtime from this Table. Those arguments are discussed in Attachment B.

33 USTA Reply at 14; USTA Comments, Attachment at 8. "Stable calls" are calls that have been processed (under this report's definition) and are merely ongoing. Our definition indicates that a switch is down if it is no longer able to process (i.e., connect) calls, even if existing calls can be maintained. USTA's proposal would narrow the definition of a downed switch to one that was not functioning even to the extent of maintaining an existing call.

34 Service Quality Complaints were proposed in the March 8 Public Notice as Table 6.

35 The suggestion of several LECs to add complaints concerning 976 numbers to the list of excluded services has been incorporated into the attached instructions. Pactel Comments at 11-12; SWB Comments at 23-24; NYNEX Comments at 6. We will not expand the list further, despite requests to do so, since it is clear from the table's heading and requirements that it will

Table VI - LEC Call Set-up Time

21. In the LEC Price Cap Order, the Commission included in price cap LECs' reporting requirements the reporting of post-dial delay, and defined post-dial delay as the time between the dialing of the last digit and the response of a "winkback," or the acknowledgment of signal receipt, from the interexchange carrier.³⁶ In the LEC Price Cap Reconsideration Order the Commission affirmed the post-dial delay reporting requirement, but stated that ongoing measurement and reporting of post-dial delay using D-ASPEN sampling methods was unwarranted on a cost-benefit basis.³⁷

22. It is apparent that definitional and measurement problems have combined to create some difficulty for the implementation of the Commission's monitoring plan. In discussing post-dial delay in the LEC Price Cap Order, the Commission stated that the LECs' arguments against reporting post-dial delay "seem to be predicated on a different, more inclusive definition of PDD (from dialing of last digit to ring or busy signal) than interests us. . ." ³⁸ Since that broader definition of post-dial delay is in use in other Commission proceedings, such as the Database 800 proceeding³⁹ and the Adjunct Devices proceeding,⁴⁰ the confusion is understandable. The Commission made it clear, however, that it was a narrower measure that was wanted in this context. As defined by the Commission and stated in the March 8 Public Notice, the part of the process to be measured for purposes of this monitoring plan is only from

collect only complaints dealing with service quality.

36 LEC Price Cap Order, 5 FCC Rcd at 6828, para. 344.

37 LEC Price Cap Reconsideration Order at para. 184. D-ASPEN (Bellcore's Digital Automatic System for Performance Evaluation of the Network) is a measuring procedure that was used on a one-time-only, limited-sample basis in a Bellcore study. Any pleadings submitted in this proceeding addressing these issues -- whether post-dial delay reporting should be required, and whether D-ASPEN is the appropriate measurement methodology -- constitute belated petitions for reconsideration of the Commission's determination, and are dismissed.

38 LEC Price Cap Order, 5 FCC Rcd at 6828, para. 344.

39 Provision of Access for 800 Service, CC Docket No. 86-10, 4 FCC Rcd 2824 (1989), recon. pending (Database 800).

40 Southwestern Bell Telephone Co. et al., CC Docket No. 88-287, Order Designating Issues for Investigation, 4 FCC Rcd 2580 (Com.Car.Bur. 1989).

the completion of dialing to the acknowledgment winkback from the interexchange carrier.⁴¹ In order to curtail further confusion or controversy, we will use the more accurate term, "LEC call set-up time," to refer to this part of the process, and the term "post-dial delay" to refer to the entire access period from dialing of the last digit to ring or busy signal.

23. Based upon this mandate from the Commission, we solicited comments on less burdensome means of measuring and recording this time period.⁴² We have concluded, based on the filings and on various ex parte presentations, that LEC call set-up time can be calculated from data already required in our Infrastructure Development reports, with only slight modification.⁴³ Accordingly, the LEC call set-up time report consists of a display of switch deployment and SS7-NI deployment (described infra) from which filing LECs will draw conclusions about LEC call set-up times in their own systems.⁴⁴ Because this Table is based on data in the annual infrastructure report, it will be moved to that report as Table III.⁴⁵

B. Semiannual Reports

24. The March 8 Public Notice contains three tables for the semiannual service quality reports. For Table I - Customer Satisfaction, and Table II - Dial Tone Response, we stated that we would use the current semiannual report

41 LEC Price Cap Reconsideration Order at para. 183.

42 In the LEC Price Cap Reconsideration Order, the Commission directed the Bureau to investigate alternative measurement methods for recording LEC call set-up time, including whether this report could be based on calculations derived from facilities and routing data supplied in the infrastructure reports. LEC Price Cap Reconsideration Order, para. 184.

43 The development of this calculation methodology is discussed in greater detail in Attachment B. The modification of Infrastructure Report Table I is discussed infra.

44 LECs will use the existing Bellcore data on representative LEC call set-up times for different combinations of switches and routing. They will then use their own switch and SS7-NI data to calculate the extent to which each of several such combinations is present in their respective networks. No actual measurement of call set-up time is involved in this reporting, except as it was previously performed by Bellcore to derive the underlying times.

45 Thus, LEC call set-up time data will be collected only annually, and only from the LECs for whom price cap regulation is mandatory.

requirements.⁴⁶ No commenter opposed this continuation, and we accordingly leave these requirements unchanged. We stated that Table III - Transmission Quality, will continue to collect the current data, plus information on availability, error-free seconds, and bit error rate, in an attempt to measure data transmission quality. As noted above, we have determined that the best means of monitoring high speed data transmission service quality is to include it in the repair interval data of the quarterly service quality reports, rather than in Semiannual Report Table III.

II. INFRASTRUCTURE REPORTS

25. To monitor LEC infrastructure development under incentive regulation, the Commission requires mandatory price cap LECs to file information annually, including (1) number of central offices by type of equipment (SPC, digital, equal access, SS7, ISDN); (2) number of access lines by type of office (same as above); (3) local loop transmission facilities by type of available channel (baseband, analog, digital, fiber, other); (4) local loop transmission facilities by type of channels in service (same as above); (5) interoffice transmission facilities by type of channels in service (circuits: baseband, analog, digital; carrier links: copper analog or radio, digital copper or radio, or fiber); (6) copper and fiber pairs available at main frames; sheath miles; fiber to users; and (7) gross construction in millions of dollars, including (a) number of access lines, (b) access lines gained, and (c) total gross capital expenditures.⁴⁷

Table I - Switching Equipment

26. In the March 8 Public Notice, the Bureau proposes to collect data on the total number of switching entities.⁴⁸ We find that expansion of the switching entity report is necessary. To obtain a thorough picture of newer technologies as they are deployed throughout the network requires a comprehensive record. We discuss specific reporting expansions below.

46 Table II reporting requirements have been modified to accommodate them to ARMIS. As noted in the March 8 Public Notice, however, Table I, Customer Satisfaction, does not readily lend itself to inclusion in a standardized format. Issues related to this concern are discussed more fully in Attachment B. For the present, Customer Satisfaction will continue to be reported in formats unique to each carrier.

47 LEC Price Cap Order, 5 FCC Rcd at 6829, para. 351.

48 March 8 Public Notice, Infrastructure Table I, n. 2. These issues are discussed in detail in Attachment B.

27. The March 8 Public Notice requests comments on a separate category in the switching equipment table to allow for isolating data pertaining to remotes, which are presently included in the "total switching entities" count. Some parties support this data collection,⁴⁹ while the LECs counter that separate reporting of host and remote entities provides little information regarding infrastructure development, and that remotes and hosts are becoming more alike, so that separate reporting is unnecessary.⁵⁰

28. We agree that the line between remotes and host entities is becoming increasingly blurred. Remotes are often technologically similar to hosts, performing the same functions and having the same reliability and trunking. Further, some remotes may be equal in size to, or even larger than some hosts. Some remotes are capable of switching calls within their local calling area if they lose contact with the host. Such remotes are increasingly able to perform the functions of a switching entity; others serve only the simplest functions to extend the reach of the host. Remotes in all their forms are playing an increasing role in the growth of the network. It is because of their growing importance that we deem it essential to track the evolution of remote deployment in the infrastructure reports. We therefore amend the definition of "local switching entities" to specify inclusion of remotes.⁵¹

29. The March 8 Public Notice also requests comments on collecting data on access tandems, which had previously been excluded from the proposed reports, by technology type, number of trunks, or other classifications. The commenters do not oppose tandem reporting, although some question its value.⁵² Since this data provides essential information regarding the deployment of certain technologies and services to customers, tandem entity reporting has been incorporated into the table.⁵³

30. The March 8 Public Notice proposes to collect information on CCSS7 deployment in the LEC network.⁵⁴ As discussed in the section on LEC call set-

49 See, e.g., Hawaii Comments at 7.

50 See BellSouth Comments at 16-17; SWB Comments at 14; BellSouth Reply at 16; USTA Reply at 15.

51 See Attachment B for further discussion, Attachment C for the modified Table I.

52 See, e.g., BellSouth Comments at 17; Pactel Comments at 16.

53 See Attachment B for discussion, Attachment C for amended table.

54 March 8 Public Notice, Infrastructure Table I, n. 6.

up time, supra and in Attachment B, we believe that a detailed and accurate reflection of the deployment of SS7 in LEC switches and tandems is essential to our monitoring process, as well as to LEC calculation of LEC call set-up time. We have accordingly strengthened our reporting requirements in this regard.⁵⁵

31. The March 8 Public Notice proposes to collect data on switches and access lines equipped with Integrated Services Digital Network (ISDN) capability.⁵⁶ Commenters suggest clarifications and modifications of the Table's definitions;⁵⁷ we have incorporated those suggestions as we found them helpful. A LEC equips a switch with ISDN capability and provides interface units and lines from the switch so that the customer may select ISDN services, but the customer chooses whether to make use of the service. Our reporting requirements focus on services the LEC offers, not what the consumer has selected.

32. Other comments urge modifications that would either expand or reduce the reporting requirements.⁵⁸ We believe that our expanded reporting of tandems, remotes and host entities, and requirements for reporting LEC provision of SS7 and ISDN capabilities, will provide an accurate picture of the LEC network, and we accordingly decline to adopt these modifications.

Table II - Transmission Facilities

33. Infrastructure Table II collects data on LEC transmission facilities. Some parties propose modifications to the "Total Sheath Miles" and "Interoffice Working Facilities" categories,⁵⁹ and to our definitions of circuit links and carrier links.⁶⁰ Proposed modifications have been incorporated to the extent that they offer clarification.

55 See discussion in Attachment B, and modified table in Attachment C.

56 March 8 Public Notice, Infrastructure Table I, n. 7.

57 See, e.g., BellSouth Comments at 19; BellSouth Reply at 13; SWB Comments at 16; NYNEX Comments at 7.

58 See, e.g., AT&T Comments at 4-5; MCI Comments at 4-5. But see SNET Reply at 5-6.

59 See, e.g., New York Comments at Attachment; MCI Comments at 4. But see USTA Reply at 16; SWB Reply at 19.

60 March 8 Public Notice, Table II, nn. 4 & 5.

34. The March 8 Public Notice proposes to collect data on pairs terminated at the main frame and fiber to customers.⁶¹ Some parties assert that those definitions should be clarified or modified.⁶² The focus of the LECs' proposals is on the type of service delivered to the customer. As we noted earlier, loop plant data provides information on terminations at the central office. Our purpose in this report is to collect information on terminations at the customer end of the loop. A subscriber loop may begin on one transmission medium as it leaves the central office, but reach the subscriber's premises on a different medium. We have accordingly modified our report to show terminations to customer premises at various data speeds; this should provide an indication of the use being made, and should allow the drawing of conclusions about the size of the customer or the actual number of end-users at a termination.⁶³

35. Some parties request other enhancements to various reporting requirements;⁶⁴ other parties support the table as proposed.⁶⁵ We believe that the report as set forth here will enable us to review LEC investment in transmission facilities.

Table IV - Additions and Book Costs

36. In order to track capital investment, Table IV reports the number of access lines in service, access line gain, and total gross capital expenditures.⁶⁶ Various commenters propose changes to this Table.⁶⁷ We find,

61 Table II, nn. 9-11. It proposes to collect fiber strands in central offices (number of individual fiber strands in central offices, n. 9), fiber to buildings (number of buildings equipped by fiber from central office, n. 10), and fiber to customers (number of individual fiber strands to customers other than on fiber trials, n. 11).

62 See, e.g., SWB Comments at 18-19; Pactel Comments at 17; D.C. PSC Comments at 21; SWB Reply at 21-22.

63 Our delineation of different data speeds is based on LEC suggestions, and on the presumption that large customers, in large facilities, will more often require the use of high-speed services.

64 See, e.g., D.C. PSC Comments at 21; SWB Reply at 21-22; SWB Comments at 17-18.

65 See Florida Comments at 5; BellSouth Comments at 19.

66 This table was Table III in the March 8 Public Notice. Because of our shifting the LEC call set-up time into the infrastructure report, however, Additions and Book Costs is now Table IV. Total gross capital expenditures is the dollar amount of investment additions during the current reporting period,

however, that these modifications are unnecessary, and we decline to accept them.

IV. OTHER REPORTING ISSUES

A. Disaggregation of Reporting

37. The LEC Price Cap Order directed that service quality data be filed at the study area level, disaggregated as to switched access and special access. The LEC Price Cap Reconsideration Order considered the arguments of those who urged greater disaggregation, especially as they related to rural concerns. The Commission directed the Bureau to consider these issues, and said that if the Bureau concluded that the level of geographic aggregation or service level detail should be adjusted, such changes are within the Bureau's delegated authority. LEC Price Cap Reconsideration Order at para. 188. The Bureau's March 8 Public Notice proposed MSA/non-MSA disaggregation for three service quality reports (Table I, Repair Intervals; Table IV, Switch Downtime; and Table V, Complaints) and one infrastructure report (Table I, Switching Entities), and solicited comments.

38. The LECs generally argue against the expansion of disaggregation in reporting requirements, stating that this disaggregation is unrelated to the provision of service.⁶⁸ Others assert that they do not maintain data according to MSA/non-MSA distinctions.⁶⁹ State and user groups, on the other hand, support the disaggregation of data to MSA and non-MSA,⁷⁰ and in some cases suggest still further disaggregation, such as to four levels of MSAs.⁷¹

39. We have carefully considered the views expressed in these pleadings, and have decided not to extend the geographic disaggregation of

and is defined to be consistent with the Form M and 43-02 ARMIS reports.

67 See, e.g., D.C. PSC Comments at 21-22; but see SWB Reply at 20; USTA Reply at 16.

68 See, e.g., USTA Comments at 9; GTOC Comments at 2-3. The LECs state they provide the same level of service to rural and urban areas.

69 See, e.g., GTOC Comments at 2-3; United Comments at 6.

70 For example, Hawaii supports MSA/non-MSA disaggregation because users' incentives and opportunities to utilize alternatives to LEC access provision differ across geographic areas. Hawaii Comments at 4.

71 The Commerce Department classifies LECs according to size, into 4 categories.

service quality data beyond what was proposed in our March 8 Public Notice.⁷² We believe it is important to retain this disaggregation in the four reports noted there, since, if rural service levels and investment levels were to diverge from urban levels, this divergence would likely become apparent in the areas of repair intervals, complaints, switch downtime, and switching facilities. We will not, at present, require disaggregation to the four levels of MSA, nor will we extend the MSA/non-MSA disaggregation requirement to other reports.⁷³

40. We will also not require further disaggregation, to wire center or NXX reporting levels, for several reasons. Such reporting would be burdensome and bulky; USTA states that there are 43,000 wire centers in the United States.⁷⁴ It would impose a large burden not only on reporting LECs, but also on the Commission, both staff and facilities. Such an expanded reporting requirement could render the reports cumbersome and inaccessible. Further, it fails to meet the Commission's direction to find a balance between the usefulness of data and the costs of providing it. Absent any indication of service degradation, such detailed filing is not justified by the Commission's determination to monitor and evaluate representative service quality indicators. In the LEC Price Cap Order at para. 350, the Commission suggested that it did not believe that very detailed, very disaggregated reporting is necessary. We agree.

B. Standards

41. The Commission stated and affirmed that it saw no present need to establish national standards in view of the existing high level of service quality and of price cap incentives and state monitoring programs.⁷⁵ The Commission stated that it would consider developing standards, sanctions,

72 We note, however, that our requirement of MSA/non-MSA reporting for repair intervals will apply to interexchange access and to local service repair data.

73 On this reasoning we reject also the suggestions of NARUC and various state commissions that reporting be required on an extremely disaggregated basis -- by wire center or by NXX. See, e.g., NARUC Comments at 4-6. We also decline to expand our requirements regarding service level disaggregation. See Boeing Comments at 13-14; TCA Comments at 10-11.

74 USTA Reply at 10.

75 LEC Price Cap Order, 5 FCC Rcd at 6829-30; LEC Price Cap Reconsideration Order at paras. 191-192.

and other enforcement mechanisms, if it became aware that those measures are required.⁷⁶ The Commission also directed the Bureau to use this proceeding to investigate the practicability of increasing the uniformity of reporting, and to consider the inclusion in LEC tariffs of LECs' own service quality standards.⁷⁷

42. TCA and Boeing favor disclosure of service standards in the LECs' interstate access tariffs.⁷⁸ They argue that a Bureau requirement that the LECs publish their internal service quality standards in their federal tariffs would yield two benefits: first, it would permit benchmarking, and second, it would compel the LECs to justify any reductions in standards, thus impeding the carriers' ability to redefine standards in order to mask service quality problems.

43. The LECs generally argue that standards are not required, either in general (as a national plan) or in particular (as a part of their interstate access tariffs).⁷⁹ They argue that a requirement to include service quality standards in their interstate tariffs would be administratively burdensome without any balancing benefit, and that standards are constantly changing and readily referenced.⁸⁰

44. We believe that a requirement that LECs file all service quality standards in their interstate tariffs is not warranted at this time. We agree with commenters who assert that such inclusion would provide a basis for ready benchmarking and would remove uncertainty, but we believe it would also entail considerable administrative burden and lag. Further, the Commission has determined that there is no need at least at present, for it to develop national standards.⁸¹ It appears likely that a requirement that interstate tariffs include service quality standards would lead to various challenges of the standards so filed, with the result that the Commission would be expected to rule upon the acceptability of these standards, and probably to enforce

76 LEC Price Cap Reconsideration Order at para. 192.

77 LEC Price Cap Reconsideration Order at paras. 191-192 and n.268.

78 TCA Comments at 5-8 (arguing that the LECs' internal standards should be disclosed wherever a report relies on those standards); Boeing Comments at 2-6. See also Michigan Comments at 1-2.

79 See, e.g., BellSouth Comments at 3.

80 See, e.g., Pactel Reply at 7-8; SNET Reply at 9-10; USTA Reply at 5-6.

81 Pleadings and discussion on the issue of national standards are included in Attachment B.

them. This is tantamount to establishing national standards, a result that is not within the range of authority delegated to this Bureau by the Commission. Further, while we believe that a standards requirement might provide certain benefits, we are not persuaded that these benefits cannot be realized through the detailed and thorough monitoring program we have established. We will continue to watch for cause to revisit the proposal, but we will not at this time impose a requirement that LECs file service standards in their tariffs.

C. Small LECs

45. In the LEC Price Cap Order, the Commission expressed its intention to initiate a separate proceeding to consider the unique concerns of small and mid-sized LECs. LEC Price Cap Order, 5 FCC Rcd at 6826-27. In recognition of the differing resources of LECs smaller than the 8 largest LECs, the Commission determined that 2 of its 3 service quality/infrastructure reports would be required only of the 8 largest LECs. Thus, smaller LECs electing price caps file only the quarterly reports. Any further special or different treatment of small and mid-sized LECs is not among the issues delegated to the Bureau for consideration in this proceeding. In the March 8 Public Notice we said that we declined to address the requests of smaller LECs that are regulated under price caps through their affiliation with larger mandatory or electing companies, or that wish to elect caps in the future, to provide lesser filing requirements for them. Until such time as the Commission addresses these concerns directly, we said, all price cap LECs are expected to file the required data, absent a waiver of this requirement. Nonetheless, several parties urge special treatment of smaller LECs in price cap regulation with respect to service quality reporting.⁸² The Commission has expressed and affirmed its intention to examine these carriers' concerns in detail in a separate proceeding; in the meantime, all price cap carriers will be required, absent a waiver, to file the mandated reports.

D. Timing and Procedural Matters

46. In the March 8 Public Notice, the Bureau stated our intention to release an Order specifying reporting requirements in time for price cap carriers to file their initial reports on July 1, 1991. USTA suggests that the filing date be modified to accord with current ARMIS filing dates, so that the first filing would be due June 30, with subsequent filings September 30, December 31, and March 31.⁸³ SNET asks clarification of the timing of report filing, and suggests that the reports use data from the previous

82 See, e.g., Rochester Comments at 7-9; USTA Comments at 5-7.

83 USTA Comments at 8.

quarter (so that reports filed June 30 would give data for January - March), and that carriers be required to collect and record the required data only from the date of their entry into price cap regulation.⁸⁴ USTA states that a July 1 filing deadline for the first service quality reports may not be feasible.⁸⁵ USTA cites LEC reliance on the final order in this proceeding, as well as the complexity of providing responses in the ARMIS format, and suggests that the first reports be due 90 days after the release of this Order.⁸⁶

47. We adopt the modification suggested by USTA, and set June 30, September 30, December 31, and March 31 as filing dates for the quarterly reports.⁸⁷ We also grant SNET's request for clarification: all quarterly reports will record data from the period previous to the one ending the day before the report is due.⁸⁸ In light of USTA's assertions about the difficulty of developing the ARMIS report (and considering our previous experience in this regard), we will grant the request that the first ARMIS filing be due 90 days after the release date of this Order.⁸⁹ We will not,

84 SNET Comments at 9. Accord GTOC Comments at 6.

85 USTA Comments at 7; accord GTOC Comments at 5-6. SNET also requests flexibility in the first required filing, and suggests that the Commission waive all waiver fees for the July 1, 1991 reports and allow the filing just on paper, rather than in a mechanized format. SNET Comments at 9. See also Ameritech Comments at 3 (urging that the Bureau liberally grant waivers of the July 1, 1991, due date for the first service quality reports).

86 USTA Comments at 8. Accord SWB Comments at 13; GTOC Comments at 5; NYNEX Comments at 2; United Comments at 6; BellSouth Comments at 19-20. USTA and SNET argue that filing of historical data should not be required if a carrier's initial filings are waived while it develops new reporting and data collection methodologies. USTA Comments at 7; SNET Comments at 9. Pactel requests an extension of time to complete Infrastructure Table II. Pactel Comments at 16.

87 Semiannual reports will be filed September 30 and March 31. The annual infrastructure report will be filed June 30.

88 The June 30 report will cover January through March; September 30 report will cover April through June -- and so on. Semiannual reports will record data from the previous half calendar year (September report covers January through June; March report covers July through December). Annual reports will cover the previous calendar year. We also confirm SNET's understanding that LECs will be required to compile the required data as from the date of their entry into price cap regulation.

89 Accord TCA Reply at 17-18.

however, grant that extension for the filing of paper copies of the service quality and infrastructure reports due June 30, 1991. For these paper filings, LECs should approximate as closely as possible the format of Attachment C of this Order.⁹⁰

VI. PAPERWORK REDUCTION ACT

48. On July 20, 1989, the Office of Management and Budget (OMB) approved the Commission's proposed information collection requirements contained in the Second Further Notice on LEC price cap regulations. The LEC Price Cap Order contained the final rules modifying the reporting requirements that were proposed in the Second Further Notice, which were approved by OMB. Request for approval of those modifications was submitted to OMB in March, 1991. The Memorandum Opinion and Order adopted here contains specific details regarding the reporting requirements adopted in the LEC Price Cap Order.

49. This Order adopts the specific reporting parameters required to capture trends in LEC service quality and infrastructure development under price cap regulation, and standardizes existing reporting requirements for this purpose. In connection with this Order, we renew our request for review of the Paperwork Reduction Act requirements. The reporting requirements contained herein have been analyzed with respect to the Paperwork Reduction Act of 1980 and found to have modified the information collection burden on the public. This modification in the information collection burden has been granted expedited approval by OMB as prescribed by the Paperwork Reduction Act.

V. CONCLUSION AND ORDERING CLAUSES

50. The reports adopted here, and attached to this Order, were developed pursuant to a delegation of authority by the Commission in the LEC Price Cap Order. The Commission directed this Bureau to create reporting requirements that balance the need for data against the burden imposed on the reporting LECs. The Commission said that the price cap plan creates incentives that encourage LECs to maintain and increase the current high level of service quality, and to invest in the network to modernize it and increase

90 We reject Pactel's suggestion that the reporting requirements expire at the first price cap review. Pactel Comments at 4-5. Our monitoring plan will be examined at that time to determine if it should continue and in what form. Any decision on those issues now would be premature. We also reject SNET's proposal that we waive all waiver fees for the June 30, 1991 reports. SNET Comments at 9. We believe that the extension of the filing date for ARMIS, together with the flexibility we are allowing on some of the filing requirements, will give LECs ample room while maintaining a reasonable filing expectation.

its capacity and capabilities. The Commission recognized, however, that some parties believe price cap incentives could operate in a different way -- to encourage LECs to cut funding for maintenance and repair, and to decrease their investments in the infrastructure. To assure that this does not happen, and to provide an information base to allow for a full evaluation of LEC performance under price cap regulation, the Commission directed that all price cap LECs will file quarterly service quality reports, and that mandatory price cap LECs will file semiannual service quality reports and annual infrastructure reports.

51. We have developed the attached reports with these policies, and the Commission's explicit directions, in mind. It is our intention, and the Commission's, that these reports be useful and complete without being unduly burdensome. It is also our intention that our consideration of service quality and infrastructure reporting is not terminated with the adoption of this Order. The Bureau, and the Commission, may find it necessary to revisit these matters periodically, for example to modify reporting requirements as technology and the industry change. We will also be intent on evaluating these reporting requirements as they are put into practice, and as the ARMIS database is developed. Finally, as noted herein, the Bureau and the Commission stand ready to revisit the issues of geographic and service disaggregation, LEC call set-up time, trunk blockage reports, fiber deployment, and other reporting requirements, if reevaluation is warranted. In the meantime, we believe that the attached reports represent a fair balance between the need for service quality and infrastructure information, and the burden on price cap LECs to supply it.

52. Accordingly, IT IS ORDERED that all local exchange carriers subject to price cap regulation WILL FILE on June 30, 1991, service quality information in the format of the quarterly reports attached here, modified to the extent permitted herein.

53. IT IS FURTHER ORDERED that these carriers WILL FILE the same data, in the ARMIS format, on August 19, 1991.

54. IT IS FURTHER ORDERED that the eight local exchange carriers mandated to be regulated under price caps, the Regional Bell Operating Companies and GTE Telephone Operating Companies, WILL FILE on September 30, 1991, service quality reports in the ARMIS format of the semiannual reports attached here, modified to the extent permitted herein.

55. IT IS FURTHER ORDERED that the eight local exchange carriers mandated to be regulated under price caps, the Regional Bell Operating Companies and GTE Telephone Operating Companies, WILL FILE on June 30, 1991, infrastructure development reports in the format of the annual reports attached here, modified to the extent permitted herein, covering the 1990 calendar year.

56. IT IS FURTHER ORDERED that the eight local exchange carriers for whom price cap regulation is mandatory WILL FILE the same infrastructure development data, in ARMIS format, on August 19, 1991.

57. IT IS FURTHER ORDERED that the eight local exchange carriers mandated to be regulated under price caps, the Regional Bell Operating Companies and GTE Telephone Operating Companies, WILL FILE no later than September 30, 1991, infrastructure development reports in the format of the annual reports attached here, modified to the extent permitted herein, covering the 1989 calendar year.

58. IT IS FURTHER ORDERED that these reports SHALL BE FILED with both the Industry Analysis Division and the Accounting and Audits Division of the Common Carrier Bureau.

59. IT IS FURTHER ORDERED that the motions for acceptance of late-filed pleadings ARE GRANTED.

60. IT IS FURTHER ORDERED that the requests for extension of time to file reports in ARMIS ARE GRANTED to the extent indicated herein, and ARE OTHERWISE DENIED.



Richard M. Firestone
Chief, Common Carrier Bureau

ATTACHMENT A

Comments were filed by:

Ameritech Operating Companies (Ameritech)
American Telephone and Telegraph Company (AT&T)
Bell Atlantic Telephone Companies (Bell Atlantic)
BellSouth Corporation (BellSouth)
Boeing Computer Services (Boeing)
Central Telephone Company (Centel)
Cincinnati Bell Telephone Company (CBT)
D.C. Public Service Commission (D.C. PSC)
Florida Public Service Commission (Florida)
GTE Telephone Operating Companies (GTOC)
State of Hawaii (Hawaii)
International Communications Association (ICA)
Independent Data Communications Manufacturers Association (IDCMA)
MCI Telecommunications Corporation (MCI)
Michigan Public Service Commission Staff (Michigan)
National Association of Regulatory Utility Commissions (NARUC)
New York State Department of Public Service (New York)
New York Telephone Company and New England Telephone and Telegraph Company (NYNEX)
Pacific Bell and Nevada Bell (Pactel)
Rochester Telephone Corporation (Rochester)
Southern New England Telephone Company (SNET)
Southwestern Bell Telephone Company (SWB)
Tele-Communications Association (TCA)
United Telephone Systems Companies (United)
United States Telephone Association (USTA)

Reply comments were filed by:

Computer Software and Services Industry (ADAPSO)
Allnet Communication Services, Inc. (Allnet)
AT&T
Bell Atlantic
BellSouth
Boeing
Centel
Hawaii
MCI
NYNEX
Pactel
SNET
SWB
TCA
United
USTA

Attachment B
Documentation and Discussion
Price Cap LEC Service Quality and Infrastructure Monitoring

I. SERVICE QUALITY REPORTING

A. Quarterly Reports

Table I - Installation and Repair Intervals (Interexchange Access)

a. local service

Florida states that the tables should be modified to include more basic local service data.¹ BellSouth opposes the inclusion of local service data, stating that price cap regulation extends only to interstate access services.² Pactel states that the Table's footnotes should be changed if it is not only interstate access data that is being gathered.³ The issue of local service reporting is addressed in the Order at para. 8.

b. "orders" or "circuits"

Table I directs parties to enter the total number of orders or circuits. Some parties challenge our use of "orders or circuits" in Table I, and state that these terms are not interchangeable.⁴ We agree that the terms "order" and "circuit" are not interchangeable, but we note that some LECs record circuits, while others record orders. We direct LECs to file either Total Number of Orders, or Total Number of Circuits, with an explanatory footnote.

1 Florida Comments at 3; see also United Comments at 7-8.

2 BellSouth Reply at 6.

3 Pactel Comments at 6.

4 The D.C. PSC suggests that LECs should report orders rather than circuits, reasoning that a single order for 24 circuits might be reported as '1' by one LEC, while another LEC might report '24.' D.C. PSC Comments at 4. BellSouth agrees that one order may include several or many circuits, but argues that reporting circuits would provide a higher degree of accuracy. BellSouth Reply at 6.

c. missed commitments

Various arguments are made regarding the definition of commitment date, as well as what a "missed" commitment means.⁵ SNET states that it is currently unable to provide "average missed commitment" in switched and special access categories.⁶ Pactel claims that it will be unable mechanically to track installation intervals before July 1, 1991, but offers to provide delay days, which Pactel believes to be a better measure.⁷ SWB suggests that missed commitments be defined in business days.⁸

Installation interval reports in the semiannual reports consisted of percentage of commitments met, but did not include average interval of missed commitment. We are directing LECs to record an average (in days) of missed commitments, but we will allow a reasonable period of time for those LECs that need to make adjustments to their data collection programs in order to capture this data. Such LECs should enter "0" in the report, with an explanatory footnote.⁹

5 IDCMA asserts that "commitment date" should be revised to "original commitment date." IDCMA Comments at 8; but see BellSouth Reply at 8 (arguing that "original commitment date" is meaningless, since any change in commitment date is made only with the concurrence of the customer). Pactel contends that we should exclude from this count any commitments missed because the customer was not prepared to receive service on the commitment date. Pactel Comments at 7.

6 SNET Comments at 5 (noting that it is modifying computer programs in order to capture this data); see also USTA Comments at 11 (noting that several carriers are in this position).

7 Pactel Comments at 5-7. Pactel notes that the report as proposed will not truly demonstrate changes in service provisioning, because a carrier could lengthen its commitment periods beyond the published standard, without any lengthening of provisioning time showing up on the record. Pactel suggests that a measurement that compared average commitment intervals with average installation intervals would give the Bureau a better idea of actual installation service quality. Other parties agree that our reporting should allow a ready comparison of installation intervals and installation commitments. TCA Comments at 8; Hawaii Comments at 5. But see BellSouth Reply at 7 (asserting that such reporting would be meaningless). Hawaii notes that under the measurement proposed, LECs have complete flexibility regarding the date established for installation.

8 SWB Comments at 19. Accord USTA Comments at Attachment. But see D.C. PSC Comments at 4 (arguing that all calendar days should be counted).

9 We expect that all LECs will file complete data in the format specified

We have directed LECs to file their installation interval lists with the Bureau. These will be filed not in the ARMIS database but in hardcopy, with both the Industry Analysis Division and the Accounting and Audits Division, at the time of the initial filing on June 30, 1991. Should a LEC change any intervals, that LEC will file the new intervals, with an explanatory cover letter, no less than 30 days before the effectiveness of the change. LECs will calculate missed commitments from these filed lists of intervals, unless a new commitment date is set at the customer's request. With regard to suggestions that we create a measure to compare installation intervals with installation commitments, we agree that such measurement might be useful, but we will not incorporate it at this time. The fact that LEC installation intervals will be on file and publicly available means that this kind of comparison can be made. If our monitoring of installations reveals any degradation, such a comparative measure might appropriately be added.

d. switched access and special access

Footnote 1 of the March 8 Public Notice defines "switched access" as "circuit from the local exchange carrier Office to the interexchange carrier point of presence for Feature Group B, C, or D interLATA service." D.C. PSC suggests replacing the term "interLATA" with "interstate."¹⁰ USTA suggests that the definitions given for switched access and special access, which state that they apply throughout the report, apply instead only to Tables I and II, since a broader use of this definition will produce confusion.¹¹ USTA also believes that all footnotes should be amended to change references to "interexchange carrier" to "interexchange carrier/customer."¹² We believe

no later than the December 1991 report. LECs that currently record some applicable measurement, such as Pactel's measurement of delay days, or other LECs' hours, should enter that measurement and provide an explanatory footnote. GTOC states that it is unable to provide the required data in the given format on a historical basis. GTOC also states that Contel will collect this data manually, so only composite or aggregate data may be available initially. GTOC Ex parte of May 6, 1991. Because they have not previously maintained the data required in the semiannual reports, and have technical limitations to overcome, GTOC and Contel should file representative data, with explanatory footnotes, beginning June 30, 1991.

10 D.C. PSC at 3. (since both interLATA and intraLATA traffic are carried on the same circuits, and the term "LATA" excludes some areas served by independents).

11 USTA Comments at 11-12. Accord Pactel Comments at 6.

12 USTA Comments at 12. See also SWB Comments at 19 (asserting that not all

these changes add clarity, and have accordingly incorporated them. D.C. PSC requests that the definition of special access be expanded.¹³ We do not see a present need to expand the scope of the reporting, and we accordingly decline to adopt these proposals.

Table II - Local Service Installation and Repair Reports

Several parties raise issues having to do with the mismatch of measurements required for local service and access service in the repair reporting requirements.¹⁴ We believe that these problems have been resolved by our splitting the reports for access service and local service. Other parties argue that the level of detail and the amount of data required in the repair reports should be increased.¹⁵ The LECs oppose such suggestions as burdensome and unnecessary.¹⁶ We believe that the reporting we are requiring will be adequate to our monitoring purposes, and we therefore decline to expand it further. LECs will file local residential and business installation intervals as well as the interexchange access installation intervals discussed above.¹⁷

customers of access service are ICs, and revising "IC POP" to "interexchange customer POP").

13 D.C. PSC Comments at 4. D.C. PSC would include dark fiber and all other facilities supplied by LECs to interexchange carriers, not just to the IC point of presence (POP). IDCMA requests clarification that DDS means digital data service. IDCMA Comments at 8. It does.

14 See, e.g., D.C. PSC Comments at 4-5 (concerning the source of trouble reports); United Comments at 7-8 (concerning whether trouble is found in customer or interexchange carrier equipment); USTA Comments at 13 (recommending the addition of "Local Repair Bureau" to the heading); accord Pactel Reply at 8, 12. IDCMA Comments at 8 (stating that footnote 2 is "too ambiguous for comment").

15 See, e.g., TCA Comments at 13 (proposing further disaggregation); Florida Comments at 3-4 (requesting the inclusion of more data); Hawaii Comments at 3-5 (generally seeking expansion of data requested). For example, TCA urges the Bureau to modify the Trouble Report in order to add the LECs' internal standards for trouble reports per 100 access lines. TCA adds that it believes performance data are collected for individual circuits and that circuits and particular services might be correlated. TCA Comments at 11-13.

16 SWB Reply at 31; Pactel Comments at 9; USTA Comments at 13-14; NYNEX Comments at 5.

17 GTOC states that it is unable to provide local service installation

Table III - Trunk Blockage

In modification of the semiannual trunk blockage report, we will require quarterly reports on trunk groups exceeding the LEC's tariffed servicing threshold (for 1 and 3 months) and number of groups exceeding the design blocking objective (for 3 months). Several LECs offer suggestions regarding the definition of servicing threshold and the range of design blocking objectives.¹⁸ The Table as proposed requires reporting carriers to disclose the standards used and any changes they may from time to time make in such standards, and states that design blocking objectives range from 0.5 percent

dates in the June 30, 1991 filings, and that some of its filed data for this table and others will consist of approximations, because of the need to convert data to a study area basis. GTOC Ex parte of May 6, 1991. GTOC will be allowed to file a "0" with an explanatory footnote for its June 30, 1991 local service installation data, but must provide at least an approximation of this information by the time of the August 1991 ARMIS filing. Further, while we will accept appropriately footnoted approximate filings from GTOC for the first quarterly filing, GTOC must file actual study area data thereafter.

GTOC states that Contel is similarly hampered, historically and technically, and will require substantial modifications and consequent time delays to complete Table II. Contel should file the most representative data available, with explanatory footnotes, beginning June 30, 1991, and will be required to file standard data and format as of December 31, 1991.

18 See, e.g., USTA Comments at 14 (endorsing the T1Q1 discussion of servicing thresholds and range for design blocking objectives); SWB Comments at 21 (opposing the use of design blocking objective as a performance criterion on Common Transport groups and endorsing the statement that "if the Measured Blocking Threshold on a trunk group does not exceed the appropriate threshold within Table 7.3-1 and 7.3-2 (Measured Blocking Threshold), the trunk group is considered to have met its design blocking objective"); Pactel Reply at 12 (endorsing elimination of design blocking objective as a reporting requirement); but see TCA Comments at 8-9 (urging disclosure of LEC internal standards). With respect to servicing thresholds, we have noted the Interexchange Carriers Compatibility Forum (ICCF) and the T1Q1 Industry Forum discussions. March 8 Public Notice, Quarterly Service Quality Table IV, n. 6. These forums have produced the standards currently in use for the RBOCs' semiannual reports.

to 1.0 percent.¹⁹ Other comments suggest various clarifications that have been incorporated as indicated.²⁰

TCA states that although servicing thresholds are included in the LECs' tariffs, it would be useful to reference them, and the design blocking objective, in the service quality reports also.²¹ TCA also suggests that LECs note the amount by which the trunks exceeded these standards, not just the fact that they did exceed them.²² We will not require LECs to file their servicing thresholds here; it seems to us adequate that these standards are included, and readily available, in the LECs' tariffs. We agree, however, that the LECs should include their design blocking objectives in these reports, and we direct them to do so in a footnote to Table III. Finally, while we agree with TCA that the Trunk Blockage Table would be more informative if LECs indicated the extent of any exceeding of the standards, rather than the mere fact of it, we will not require such reporting at this time. Our primary objective, under the Commission's delegation, has been to unify the reports and to implement their their filing in the ARMIS data base. Expansion and other modification of the reporting requirements are beyond our immediate purposes.

Table IV - Switch Downtime

Table IV requires reporting of switch downtime by switch size and by MSA/non-MSA. It also requires complete identification of each incident of more than 2 minutes' duration. Several LECs request clarification of the reporting requirements or definitions we proposed.²³ Others assert that they

19 Accord BellSouth Comments at 9; USTA Comments at 14; BellSouth Comments at 8-9. LECs file their servicing thresholds in their interstate access tariffs; any change in these standards is thus subject to normal tariff review.

20 We continue modifications adopted supra; see, e.g., NYNEX Comments at 6; Pactel Comments at 10 (recommending deletion of reference to interexchange carrier points of presence). GTOC states that Contel does not measure trunk blockage, and will require a period of time to develop that capability, and to compile the historic data required here. GTOC Ex parte of May 6, 1991. We will require that Contel begin recording trunk blockage data, at least in a sample format, as of July 1, 1991, so that it can file Table III as of December 31, 1991.

21 TCA Comments at 8-9.

22 TCA Comments at 9 n.10; accord D.C. PSC Comments at 11-12.

23 SNET Comments at 8 (seeking clarification of the treatment of remote

are unable to provide the requested data.²⁴ For purposes of this report, we will use the definition of remotes that we use in Infrastructure Table I - see infra. Thus, remotes with stand-alone capacity will be counted as switches for reporting of switch downtime.

Hawaii suggests that LECs be required to report switch degradation, arguing that situations such as a switch maintaining connections while refusing to establish new connections, or a switch refusing incoming calls but having outgoing calls made through a switching center, should not go unrecorded.²⁵ USTA opposes this proposal as unnecessary and seeks to limit the switch downtime report by adding "including stable calls" to this definition.²⁶ As stated in the Order at para. 18, we reject USTA's addition of "including stable calls."

Table V - Complaints

No comments were received on this subject.

Table VI - LEC Call Set-up Time

switch units for reporting purposes); United Comments at 8 (seeking clarification that pair gain devices are excluded from the definition of "switches"); SWB Comments at 23 (seeking clarification of the meaning of "total number of switches;" i.e., whether the report seeks total number of switches broken down by category or total number of switches with downtime broken out by category); USTA Comments at Attachment 8; BellSouth Reply at 9 (suggesting that the definitions of scheduled and unscheduled downtime are unclear).

24 See, e.g., BellSouth Comments at 10; SNET Comments at 7; Pactel Comments at 10-11. Florida states that it receives reports from LECs on an ongoing basis whenever a major service interruption occurs. Florida Comments at 4. GTOC states that Contel does not track switch outages of less than 2 minutes' duration. GTOC Ex parte of May 6, 1991. Contel must report all switch downtime incidents of more than 2 minutes' duration, as required, and must develop tracking of shorter incidents so that it can file such data beginning December 31, 1991. Contel may, of course, request a further delay of this reporting requirement if it is unable to collect such data for a December 31, 1991 filing.

25 Hawaii Comments at 5.

26 USTA Comments, Attachment at 8.

As discussed in the Order at paras. 21-23, the post-dial delay report is replaced with the LEC Call Set-up Time Report, which is included at infrastructure Table III, infra.

B. Semiannual Reports

Table I - Customer Satisfaction

In addition to the comments, we rely upon a staff report reflecting the semiannual reports of the RBOCs since divestiture,²⁷ in developing the semiannual report tables. We stated that Table I, Customer Satisfaction, would remain unchanged for the time being, as it is not susceptible to standardization and inclusion in ARMIS. Most of the comments on this table concerned the need to standardize information.²⁸ We realize that customer satisfaction surveys are designed by individual carriers with idiosyncratic needs and interests, and we have not required LECs to follow a standard format in these surveys. This has resulted in the use by the RBOCs of a very summary, somewhat standardized reporting format for purposes of the semiannual report. The Commission has directed the Bureau to undertake a proceeding that seeks greater uniformity of data so that carriers can more easily be benchmarked. We have not yet done so with regard to the customer satisfaction report. It will thus continue in its present form until such time as we revisit the issue and attempt to devise a new format that would convey more information without pushing all LEC customer satisfaction surveys into a narrow mold.

Table II - Dial Tone Response

27 "Update on Quality of Service for the Bell Operating Companies," Kraushaar, Industry Analysis Division, Common Carrier Bureau, June 1990.

28 GTOC Comments at 4-5. GTOC asserts that its customer satisfaction measurement system contains information that is more useful than that proposed by the Bureau, and that customers will more readily indicate "overall satisfaction" than they will "excellence in overall quality." GTOC also states that Contel will be unable to provide any of the semiannual reports until after it is merged operationally with GTOC. GTOC Ex parte of May 6, 1991. Since Contel as a separate entity would not be required to file these reports, it is only its changed ownership that makes it susceptible to the requirements here. We do not believe that the integrity of the reporting plan will be reduced if we grant Contel temporary relief from this requirement during the transitional phase of its operational merger with GTOC, and this relief is accordingly granted.

We did not solicit comments, and few were received, on the dial tone response report.²⁹ While it has been mentioned in other contexts as being anachronistic, and although it takes two steps back from the underlying data,³⁰ no commenter challenged it. We are accordingly leaving the dial tone response report unchanged.

Table III - Transmission Quality

The transmission quality report also remains unchanged, although the March 8 Public Notice suggested the addition of high speed data transmission reporting to this table. As discussed in the Order at paras. 12-13, we have decided to monitor high speed data transmission quality through inclusion of an additional measure in the repair interval report, Table II of the Quarterly Service Quality Report. We will summarize and address high speed data transmission quality issues here, however, since they were filed in this context.

While several parties support the inclusion of information on bit error rates and availability in the semiannual transmission quality report,³¹ the LECs generally oppose such measurements.³² LECs argue that such measurements are "intrusive," since service over tested facilities must be interrupted for the duration of the test, and that testing may take up to twenty-four hours.³³ USTA notes that these measures are currently under consideration in the T1Q1 Technical Subcommittee of the Exchange Carriers Standards Association (ECSA),

29 BellSouth asserts that it can continue to report dial tone response as it appears in the semiannual service quality reports. BellSouth Comments at 12. Florida states that its Schedule 9 requires this data and also requires central office location, NXX and equipment type. Florida Comments at 5.

30 The underlying measure is the length of time before dial tone; the report asks whether a certain percentage of end offices meet that test a certain percentage of the time, rather than asking for a measure of average dial tone response, for example.

31 Boeing Comments at 13; TCA Comments at 12-13; IDCMA Comments at 1-2; ICA Comments at 4.

32 D.C. PSC Comments at 18. USTA states that LECs cannot provide data on availability, error-free seconds, and bit error rate as proposed by the Bureau. USTA Comments at 17; accord SWB Reply at 5; Pactel Reply at 15; BellSouth Reply at 15.

33 See, e.g., BellSouth Reply at 15; BellSouth Comments at 13; SWB Reply at 14-15.

which is defining performance parameters and measurement methods and will address the actual performance limits for each of the defined parameters.³⁴

Some LECs argue that they can be held accountable for transmission quality only when they control the circuit end-to-end, and even then they exclude problems which may be due to customer-owned CPE.³⁵ Centel argues that it will be difficult to measure or quantify transmission quality for the semiannual reports, since there are no standards, and since analog and digital switches would have to be judged on different standards.³⁶ Pactel denies that it currently can track error free seconds and bit error rate, and suggests not collecting this data.³⁷ SWB claims that data transmission service quality reporting will not be economical until most of the network is digital.³⁸

D.C. PSC asserts that there are standards developed by ANSI for transmission quality.³⁹ IDCMA maintains that our quarterly reports should include "error-free seconds" as defined in BellCore publication TR-NPL-000341.⁴⁰ ICA argues that more specification is needed in the reporting requirement for data transmission quality. Noting that the March 8 Public Notice proposes to measure availability, error-free seconds, and bit error rate, ICA asserts that "percentage of error-free seconds" is the traditional measure of data errors used in LEC tariffs, but that the conversion to bit error rate provides a measure that is more accurate and more compatible with other computer industry benchmarks.⁴¹ ICA states that the traditional 99.5

34 USTA Comments at 17-18; see also SWB Comments at 25. USTA asserts that the Commission should defer the proposed requirement until final industry standards are adopted.

35 USTA Comments at 17-18.

36 Centel Comments at 3.

37 Pactel Comments at 14. Accord Bell Atlantic Comments at 2-3. Bell Atlantic asserts that this data can be collected only by manually counting trouble tickets or joint testing.

38 SWB Comments at 25.

39 D.C. PSC Comments at 18.

40 IDCMA also recommends service quality reports for analog data transmission, including loss deviation, attenuation distortion, envelope delay distortion, and impulse noise. IDCMA Comments at 7-8, citing Bellcore TR-NPL-000335.

41 ICA Comments at 4. IDCMA supports gathering data on data transmission service quality because voice grade criteria are not always relevant to data

percent measure, which translates to a bit error rate of 10^{-5} , is obsolete, since modern technology and fiber optics allow for bit error rates of 10^{-9} and lower.⁴² ICA contends that availability, number of trouble reports, and repair intervals are the most important measures for data transmission purposes, and that availability can be measured indirectly through detailed bit error rate reporting.⁴³ ICA suggests that data transmission reporting include a time-of-day breakdown of availability, for example business day and 24-hour day.⁴⁴

Boeing states that it engages in testing before accepting new circuits to determine whether they are of the desired quality, but that private lines can and do deteriorate in quality. Boeing also argues that requiring standards of all LECs will assure that the level of quality on circuits remains the same as when they were originally purchased.⁴⁵ Boeing suggests that two standards be required in LEC interstate access tariffs: availability and bit error rate. Boeing Comments at 6. Boeing defines availability as the percentage of time that a full-period private line is available for use by a subscriber.⁴⁶ Bit error rate is a complementary and much finer measure of transmission quality, which measures the quality of transmission over the line; specifically, bit error rate is a measure of the number of bits transiting a digital private line that are errored (i.e., incorrectly transmitted) during a given period of time.⁴⁷ Boeing argues that availability

transmission. In addition to quarterly reports, IDCMA recommends requiring a much more detailed report on a less frequent basis. IDCMA recommends basing this report on one of two network studies performed by Bell Labs. IDCMA asserts that computing cumulative distribution function is not appreciably more difficult than averages. IDCMA recognizes that these tests are costly, but believes the benefits outweigh the costs. IDCMA Comments at 1-4, 6-7.

42 ICA argues that the lower error rates are essential for modern data processing applications. ICA Comments at 4-5. Accord Boeing Comments at 8-9.

43 ICA Comments at 5. ICA also suggests that availability should be measured circuit-by-circuit as well as overall for the network, but acknowledges that such reporting may not be possible.

44 ICA Comments at 5.

45 Boeing Comments at 5.

46 Although stated in terms of a percentage, availability is a binary measurement, in that it measures whether a line is "up" and available for use, or "down" and incapable of transmitting information.

47 Bit error rate is stated as a negative exponent. Taken together,

and bit error rate measurements are, alone, not sufficient to prevent deterioration of service quality. Accordingly, Boeing urges that the standards included in LEC tariffs be "realistic," meaning that they "accurately reflect the performance which is readily achievable using today's technology."⁴⁸

As noted in the Order at paras. 12-13, we have included in Table I of the quarterly reports a further breakdown of data in the repair interval report, to include high-speed data lines in the special access category. Although we considered the inclusion of actual measurements of transmission quality for high speed data, especially in view of the arguments of the parties cited above, we are persuaded, as we stated there, that the inclusion of high speed data transmission in the repair interval report is a better approach.

II. INFRASTRUCTURE REPORTS

Table I - Switching Equipment

In the March 8 Public Notice, the Bureau proposes to collect data on the total number of switching entities, and defines switching entities as "assemblies of equipment designed to establish connections between lines and trunks. Switching entities include local, class 5 switching machines and any associated remotes."⁴⁹ We have determined that expansion of the switching entity report is necessary. Services to customers depend on the location of certain types of equipment in the network as discussed herein; for example, placement of SS7 capabilities in tandems results in a different type of network enhancement than does placement of that technology in a local switch. Further, digital remote switching is becoming more important as fiber is deployed in the loop. To obtain a thorough picture of newer technologies as they are deployed throughout the network requires a comprehensive record. We discuss specific reporting expansions below.

The March 8 Public Notice requests comments on a separate category in the switching equipment table to allow for isolating data pertaining to remotes, which are presently included from the "total switching entities" count. See Order at paras. 27-28. Several parties support a separate breakout for remotes.⁵⁰ Hawaii and New York assert that the report should

availability and bit error rate provide an accurate measure of the quality of digital private lines. Boeing Comments at 6-7.

48 Boeing Comments at 8.

49 March 8 Public Notice, Infrastructure Table I, n. 2.

50 Hawaii Comments at 7; New York Comments at Attachment; D.C. PSC at

also record the percentage of host switches with remotes and the average number of remotes to host, since this information is relevant to system architecture development.⁵¹ The LECs counter that separate reporting is unnecessary.⁵²

Remotes may sometimes serve the same purposes as the local switch, while sometimes they serve only a "relay" function. It is precisely because of their increasing sophistication and their wide use that we believe we should collect data to make us aware of their deployment in the network. In order to minimize the burden of this data requirement, however, we will limit our reporting of remote switches to those with "stand alone" capability. It is these remotes -- remotes which, when disconnected from the host switch, can continue to process calls within their local area -- whose number and deployment are essential to our monitoring of the infrastructure. We have accordingly included remote switches (with this restrictive definition) in our infrastructure report on switching equipment. Tandem switches are similarly included in this report. See Order at para. 29. The March 8 Public Notice also proposes to collect data on the total number of lines in service.⁵³ USTA proposes removing "etc." from the definition.⁵⁴ We agree, and have modified the table accordingly.⁵⁵

18 (claiming that the data is compiled monthly by Bellcore).

51 Hawaii Comments at 6-7; New York Comments at Attachment. Hawaii adds that remotes should also be reported separately in the Total Switch Downtime Report (Quarterly Service Quality Report IV) since remote outages may be caused by problems with either the host or the remote unit. United urges exclusion of reporting switch downtime in instances when a remote office is isolated due to a cable cut, but goes into the Emergency Stand Alone mode of operation. United Comments at 8.

52 See BellSouth Comments at 16-17; SWB Comments at 14; BellSouth Reply at 16; USTA Reply at 15. Pactel supports counting remotes as part of the last switching entity. Pactel Comments at 15. BellSouth suggests that switching entities be more specifically defined as hosts plus remotes, and that the Commission use the same definition in its service quality reports. BellSouth Comments at 16-17.

53 The table defines lines in service as access lines that include all classifications of local exchange telephone service, including individual lines, party line access, PBX access, Centrex access, Coin access, Foreign Exchange access, WATS access, etc. March 8 Public Notice, Infrastructure Table I, n. 3.

54 USTA Comments, Attachment at 4.

55 MSA/non-MSA data requirements are also removed from the access line

The March 8 Public Notice proposes to collect information on SS7 deployment in the LEC network.⁵⁶ Signaling System 7 (SS7) is a new technology that enables LECs to carry signaling information over a channel separate from the voice or data channel, thereby reducing call set-up time. Several LECs contended on reconsideration that the introduction of SS7 would further complicate measurement of LEC call set-up time measurement.⁵⁷ Those arguments, however, were predicated on the Commission's intention to measure LEC call set-up time using the sampling techniques exemplified by Bellcore's D-ASPEN,⁵⁸ and are thus not applicable to our current discussion of indirect calculation methodologies.

Some commenters suggest that the data collection on SS7 becomes complete and usable only if it includes information on the interLATA and intraLATA capabilities of SS7 deployment.⁵⁹ BellSouth supports local and tandem reporting of SS7 as the Bureau proposes, and suggests that deployment of SS7 intranetwork and internetwork capabilities be reported as well.⁶⁰ AT&T's

reporting requirements, since such data would be difficult to provide, and is not essential (or, therefore, justified).

56 The report proposes to collect data on LECs' local and tandem switches equipped with SS7, including remotes; including both 1AESS and Digital Stored Program Control switching entities equipped with SS7. The corresponding number of access lines served by those switches is shown as access lines with access to SS7. March 8 Public Notice, Infrastructure Table I, n. 6.

57 Contel Petition at 5; SWB Petition at 7.

58 D-ASPEN is Bellcore's Digital Automatic System for Performance Evaluation of the Network. It is a sampling and testing procedure that was used by Bellcore in a one-time study to record post-dial delay using various types of switches and various routing combinations.

59 InterLATA, or internetwork, SS7 is defined in Bell Technical Reference TR-394. IntraLATA, or intranetwork, SS7 is defined in TR-317. For ease of reference we will call internetwork SS7 "SS7-394," and intranetwork SS7 "SS7-317."

60 BellSouth Comments at 17-18; BellSouth Reply at 16 (stating that intranetwork capability (SS7-317) is used by exchange carriers to provide enhanced signaling capability in the exchange carrier network, and internetwork capability (SS7-394) is used to provide SS7 interconnection with interexchange carriers).

proposal is similar to BellSouth's, but includes categories to show SSP (Service Switching Point, the LEC database query) provision.⁶¹ MCI suggests reporting the number of signal transfer points (STPs, packet switches that switch the out-of-band signals) and signal control points (SCPs, which contain the databases that tell the network how to handle calls) within each LEC study area to account more fully for the level of investment.⁶²

BellSouth suggests that infrastructure reporting of SS7 deployment can be used to develop a "simple and relevant" indicator of LEC performance. BellSouth states that the higher the penetration rate of SS7-394, the better will be the LEC call set-up time performance of the LEC, and if SS7-394 is fully deployed, no known technology can improve on the LEC call set-up time performance.⁶³ Others agree. In order to effect a LEC call set-up time calculation methodology USTA and SWB propose expansion of our infrastructure reports to include two fundamental infrastructure trends: switch deployment and replacement, and SS7-394 deployment.⁶⁴ USTA and SWB suggest that the data be collected annually as an infrastructure report, since it reflects switch and SS7 deployment.⁶⁵ AT&T maintains that basing LEC call set-up time

61 AT&T Comments at 4-5. But see BellSouth Reply at 13 (contending that the reporting of SSPs would add information about the deployment of a certain generic issued for 800 database services -- helpful to AT&T, but irrelevant to our monitoring -- and that it would provide no further information about other services LECs might offer).

62 MCI Comments at 4.

63 BellSouth Reply at 13. BellSouth adds it does not support any requirements to make subsidiary calculations from the SS7 deployment data, since those calculations would merely be cosmetic and would add nothing to the Commission's understanding of LEC call set-up time not already provided by SS7 penetration data. BellSouth Reply at 14.

64 USTA Reply at 6-7, Attachment A; SWB Reply at 23-24, Attachment. Accord Bell Atlantic Reply at 3-4; MCI Comments at 4-5; AT&T Comments at 14. USTA states that theoretical LEC call set-up time can be calculated from existing studies using measurements of test calls in a multi-frequency signaling environment and theoretical calculations in an SS7-394 signaling environment, and that relying on ongoing measurements of infrastructure development would be less costly to monitor.

65 USTA Reply at 7 & Attachment A; SWB Reply at 24 & Attachment; see also Pactel Reply at 14-15; SNET Reply at 4-5; NYNEX Reply at 3-4 (offering to file its analysis of switch types in the NYNEX region each year). USTA's Attachment A and SWB's Attachment, titled "Infrastructure Report, Table IV, LEC Call Set-up Time," are identical. Switching entities, access lines, direct call set-up time, and tandem call set-up times for digital, analog and

reporting on calculations derived from infrastructure reports would be effective, except that the reports do not track SSPs or SS7-394, and are filed only annually.⁶⁶

SS7 data is central to our calculation of LEC call set-up time, as discussed above. The Bureau believes that the inclusion of SS7-394 and SS7-317 data, but not SSP, STP, or SCP data, strikes a sound balance between sufficient reporting and burdensome reporting; the infrastructure table has been modified to reflect this determination. Finally, commenters in this proceeding propose different levels and categories of reporting LEC call set-up time. ICA argues that LEC call set-up time should be reported to the Commission in order to create trending analyses.⁶⁷ D.C. PSC and Allnet urge expansion of the LEC call set-up time report.⁶⁸ MCI urges disaggregation into busy hour and non-busy hour results, and by type of service.⁶⁹ We believe that the reporting requirements we have established provide sufficient insight into LEC call set-up time under varying situations in the network. We will monitor these filings carefully to assure that they provide adequate and accurate information about LEC performance.

ISDN reporting is discussed in the Order at para. 31.

Table II - Transmission Facilities

electromechanical switches are to be calculated for those categories with SS7-394 and without SS7-394.

66 AT&T Comments at 2-4.

67 ICA Comments at 8 (post-dial delay is a recurring problem; it is important in the Commission's considerations of adjunct devices and 800 service database proceedings). Accord Allnet Reply at 4.

68 D.C. PSC Comments at 15-17, Exhibit 8; Allnet Reply at 4 (include data on end offices and tandems by SS7, multi-frequency and mixed signaling types).

69 MCI Comments at 3. MCI suggests further that data be disaggregated into end offices equipped with either call set-up or 800 database query functionalities, and end offices with both, in order to verify post-dial delay in the SS7 call set-up environment. See also Allnet Reply at 3-4. AT&T recommends gathering quarterly SS7 deployment data in addition to collecting SS7 data in the annual infrastructure reports. AT&T Comments at 4-5. MCI asks that the reports not be limited to LECs subject to mandatory price cap regulation. MCI Comments at 4-5. SNET opposes MCI's suggestion, stating that further reporting requirements would discourage other small or mid-sized LECs considering price cap regulation. SNET Reply at 5-6.

Infrastructure Table II collects data on LEC transmission facilities. Some parties propose modifications to the "Total Sheath Miles" and "Interoffice Working Facilities" categories.⁷⁰ Parties also propose modifications of our definitions of circuit links and carrier links.⁷¹ In continuing discussions with USTA and other parties, we have refined the definitions of circuit links and carrier links (carrier technology segments) to their current form.⁷² We believe these modifications offer greater clarity

70 New York suggests that Interoffice Facilities should be disaggregated into working and equipped channels, as are loop channels. New York Comments at Attachment. MCI proposes that total sheath miles and total working facilities of inter-STP and inter-SCP links (carrier and circuit) be included. MCI Comments at 4. Other parties recommend inclusion of planned additions to each types of facilities for its upcoming year, including counts of open wire and total pair miles, and distinguishing between facilities in service (not under construction and not retired) from working facilities (producing revenue). New York Comments at Attachment; D.C. PSC Comments at 19-20. These additions are opposed by other parties, who claim that such reporting is duplicative and meaningless. See, e.g., USTA Reply at 16; SWB Reply at 19.

71 USTA and SWB propose that "a circuit link is defined as that link that exists between any two points A and B where voice frequency/DSO cross-connects occur or where either or both points A and B are the respective serving wire centers," and that "a carrier link will be counted as a separate link on its respective transport medium (i.e., fiber, copper, radio) for each analog group or equivalent 1.544 Mbps assignment associated with that transport medium." USTA Reply at 17; SWB Reply at 21.

72 March 8 Public Notice, Infrastructure Table II, nn. 4 & 5. The March 8 Public Notice defines Circuit Links as "those individual segments of the network that an individual circuit rides on. In the case of a circuit routed through offices A-B-Z, where the segment from A-B is baseband and the segment from B-Z is analog carrier, each segment is a circuit link." This definition is modified to read: A circuit link is that link that exists between points A and B where voice frequency/DSO corss-connects and/or analog/digital conversion (collectively referenced here as conversion) occurs.

The March 8 Public Notice defines Carrier Links as "those assignable segments of the interoffice network on which 4 kHz bandwidth (single voice channel) signals are multiplexed. All carrier links are counted on this 4 kHz basis for purposes of this report." The definition is modified to refer with greater clarity to Carrier Technology Segments, and to read: A carrier technology segment is defined as a segment of the interoffice network disaggregated by technology (i.e., analog, digital) and by medium (i.e., copper, fiber, radio). Each segment between central offices or other interoffice network nodes is defined as a unique carrier technology segment. For these purposes, a central office is an interoffice network node. Other

and specificity, and provide for more accurate measurement of likely changes in LEC network development. Other proposed modifications have also been incorporated to the extent that they offer clarification. See Attachment C. Some parties suggest changes to the "Local Loop" portion of the report.⁷³ We have made only minor changes; see Attachment C.⁷⁴

The March 8 Public Notice proposes to collect data on pairs terminated at the main frame and fiber to customers;⁷⁵ see Order at para. 34. Some parties assert that those definitions should be clarified;⁷⁶ some comments

interoffice network nodes are defined as any point in the interoffice network where a cross-connect occurs, or where a change in technology or medium occurs. Counts are on an analog group of DS1-equivalent basis.

73 D.C. PSC supports inclusion of local loop used to provide ISDN and related ISDN circuits. D.C. PSC Comments at 20-21. D.C. PSC suggests that "Total Working Channels" and "Total Equipped Channels" include counts of local loop facilities used to provide high capacity services. BellSouth questions whether the fiber digital carriers are defined as systems that are completely fed by fiber end to end with no copper in the feeder portion. BellSouth Comments at 19. The "Local Loop" portion of the report deals with terminations at the local switching office. A termination will be counted as a fiber termination if it is fiber at the point it connects with the central office. AT&T recommends including data on digital loops and wireless loops. AT&T Comments at 5-6.

74 We believe that LEC provision of high capacity services is sufficiently tracked in the fiber deployment records of this report, and that requesting the additional information would not be justified by the insight it would provide into the character of the network.

75 Table II, nn. 9-11. It proposes to collect fiber strands in central offices (number of individual fiber strands in central offices, n. 9), fiber to buildings (number of buildings equipped by fiber from central office, n. 10), and fiber to customers (number of individual fiber strands to customers other than on fiber trials, n. 11).

76 See SWB Comments at 18-19; Pactel Comments at 17; D.C. PSC Comments at 21; SWB Reply at 21-22. BellSouth suggests amending the definition of "fiber to buildings" to "the number of fiber strands terminating on a customer premises, including IXCs, where the electrical interface is DS1 or high speed services," and the definition of "fiber to customers" to "number of fiber strands transporting services where the electrical interface is less than DS1 speed services, including fiber to the curb and fiber to the home other than for trials." BellSouth Comments at 19. BellSouth argues that its wording would better measure fiber loop deployment and would permit the reporting of fiber contained in new network architectures. BellSouth Comments at 19. See

propose other definitions of fiber to customers.⁷⁷ As noted in the Order, our report shows terminations to customer premises at various data speeds.

Some parties request other enhancements to various reporting requirements.⁷⁸ Other parties support the table as proposed.⁷⁹ We are confident that the current reporting requirements successfully achieve the Commission's desired balance between the usefulness of the data and the burden of providing it. On major incentive for LECs to upgrade the network, including the local loop, is to reduce cost and improve efficiency. In light of that incentive, we believe it would be premature to require more detailed reporting than is set forth here.

Table III - Additions and Book Costs

also SWB Reply at 22 (asserting fiber DS1 and DS3 deployment should be the focus for the local loop, and DS0 deployment should be the focus of fiber to the curb and fiber to the home).

77 NYNEX suggests that fiber to customers would be measured more meaningfully by measuring the number of miles of fiber strands in the local loop, including the feeder and distribution area, but excluding interoffice fiber. NYNEX Comments at 7. Bell Atlantic states that since fiber can serve many customers on a single strand, the Commission should instead require reports of the numbers of operating circuits (excluding trials) provided to customers over fiber facilities, divided into two categories: "High capacity circuits (DS1 and above)", and "DS0 circuits" (which would include fiber to the curb and fiber to the home applications). Bell Atlantic Reply at 2 n.6.

78 See D.C. PSC Comments at 21 (intrabuilding copper pairs and intrabuilding fiber strands should be explicitly included or excluded from the "Copper Pairs Terminated at Mainframe" and fiber counts); SWB Reply at 21-22 (asserting that fiber deployment information provided in the local loop, working channels and equipped channels counts focuses only on digital loop carrier systems); SWB Comments at 17-18 (recommending data collection on the bandwidth equivalency of fiber leaving central offices, so that the data will be more easily compared with copper data). We are interested in copper pairs terminating at the mainframe going into the local loop, so we will not adopt D.C. PSC's suggestion. Regarding SWB's proposal, we mean to count strands, not capacity, so we will not require a voice grade equivalent measure.

79 See Florida Comments at 5 (stating that its Schedule 21 requires similar transmission data annually, including related budget information for that year); BellSouth Comments at 19 (stating that it can report prospectively the Total Sheath Miles, Interoffice Working Facilities and Local Loop data requested).

Responding to a challenge by D.C. PSC, SWB states that the definitions proposed in the March 8 Public Notice are appropriate definitions for measuring infrastructure development, as a commitment of capital investment and maintenance effort by the LEC is required for all access lines, whether or not they are revenue-producing.⁸⁰ SWB and USTA suggest that access lines be reported on an end-of-year basis. They suggest that the time clarification would ensure consistency with industry-accepted methods for reporting lines and gains.⁸¹ New York suggests that Total Gross Capital Construction be reported by account.⁸² Pactel argues that the report should be eliminated altogether, since it duplicates information collected in the ARMIS 43-02 and Form M reports. Pactel Comments at 17-18.

We will not limit our monitoring of access lines to just those that are revenue-producing. Our purpose in requiring these infrastructure reports is to create a comprehensive understanding of network development and LEC investment. We agree with SWB that all access lines require capital investment and maintenance by the LEC; we believe that a full perspective on the network requires the reporting we have outlined.

80 SWB Reply at 20. D.C. PSC argued that "Access Lines in Service" should be limited to revenue-producing access lines. D.C. PSC Comments at 21-22. USTA states that D.C. PSC's alterations of the definitions of "in service" and "working" access lines are not standard and should not be used. USTA Reply at 16. Accord SWB Reply at 20. New York recommends disaggregating access lines in service and gain data into services as defined in Table 1, n. 3. New York Comments at Attachment.

81 SWB Reply at 22; USTA Reply at 17 (measure access lines as of December 31 of the reporting year, and access gain from December 31 of the prior year to December 31 of the reporting year).

82 New York Comments at Attachment.

IV. OTHER REPORTING ISSUES

A. Disaggregation of Reporting

1. MSA/non-MSA Disaggregation

In the March 8 Public Notice we proposed to disaggregate some data by distinguishing between Metropolitan Statistical Areas (MSAs) and non-MSAs.⁸³ The LECs generally argue against the expansion of disaggregation in reporting requirements, and in some cases argue against any disaggregation of reports to MSA and non-MSA data. USTA disputes the need for this disaggregation, stating that the Bureau proposal goes far beyond anything the Commission contemplated, and that the MSA/non-MSA distinction is simply not relevant to the provision of service.⁸⁴ The LECs state that they provide the same level of service to rural and urban areas.⁸⁵ United argues that the Bureau has not shown the value of disaggregated data.⁸⁶ Centel also asserts that this breakdown serves no purpose, since Centel, like other LECs, does not distinguish between its urban and rural customers in the provision of service.⁸⁷ SNET says that it does not believe the MSA/non-MSA disaggregation is necessary, since it does not apply different standards for urban and rural areas, but concedes that this disaggregation is the most reasonable means to track potential discrepancies.⁸⁸

83 March 8 Public Notice, passim. We proposed to report MSA/non-MSA for local service trouble reports, switch downtime, service quality complaints, and switching equipment, but also asked generally whether we should use this distinction in other reports, and whether we should disaggregate still further, perhaps using the Commerce Department's four levels of MSA.

84 USTA Comments at 9; USTA Reply at 9-10; Accord GTOC Comments at 2-3; NYNEX Comments at 4-5; United Comments at 5-6; United Reply at 2.

85 GTOC Comments at 2; NYNEX Comments at 5; United Comments at 6.

86 United Comments at 5.

87 Centel Comments at 2-3; Centel Reply at 4; see also Pactel Comments at 3 (alleging that MSA/non-MSA reporting may not provide the Bureau with information on rural and urban areas). But see TCA Reply at 10-11 (asserting that their policy is irrelevant; the critical issue is whether actual performance varies by location).

88 SNET Comments at 4.

Some parties urge the elimination of MSA/non-MSA reporting for all tables except Tables V (complaints) and IV (switch downtime).⁸⁹ Centel objects to the breakdown of switching equipment into MSA and non-MSA data, stating that this is a breakdown not currently being used by Centel.⁹⁰ Bell Atlantic asserts that such reporting would be more costly than its usefulness justifies.⁹¹

BellSouth asserts that the study area is its most significant geographic unit of managerial responsibility, and argues that data submitted on a study area basis is sufficient.⁹² United asserts that service quality data is most useful when aggregated, stating that if a LEC lowers its standards in rural service areas, the deterioration would be detected in aggregate service quality reports.⁹³ GTOC argues that disaggregated reporting is unnecessary, and that the burdens of collection outweigh the benefits provided by disaggregated data. SWB supports disaggregating some data on an MSA/non-MSA basis, but claims that it may not be able to provide this data by July 1.⁹⁴ LECs argue that the Bureau, if it does retain MSA/non-MSA distinctions, should not require such filing for 1990 data, but only for data on 1991 and later, when price cap regulation is in effect.⁹⁵ These parties also object that even for Tables IV and V, it would be unduly burdensome to break down the

89 USTA Comments at 9-10; Bell Atlantic Comments at 1-2 (stating that it does not track information by MSA/non-MSA, and that it would have to redesign its information systems to track this); NYNEX Comments at 4-5 (asserting that the Commission specifically rejected detailed, geographically disaggregated reporting requirements); BellSouth Reply at 5 (suggesting that MSA/non-MSA distinctions even for Table IV be restricted); SNET Reply at 6.

90 Centel Comments at 2. Accord GTOC Comments at 2-3; United Comments at 6.

91 Bell Atlantic Reply at 2. Accord GTOC Comments at 2-3 (arguing that this is especially true if the data were required by the 4 levels of MSAs proposed in footnote 3 of the March 8 Public Notice).

92 BellSouth Comments at 3-5.

93 United Comments at 6.

94 SWB Comments at 12. Accord Pactel Comments at 3-4; Pactel Reply at 6.

95 Pactel Reply at 6. Since MSAs will be redefined in 1992, Pactel recommends postponing this requirement until that time. Accord NYNEX Reply at 4.

information by different sizes of MSAs, as is suggested at note 3 of the March 8 Public Notice.⁹⁶ SWB opposes disaggregating any data by size of MSA, concluding that this would add little to the Bureau's ability to monitor service quality in rural areas.⁹⁷ BellSouth opposes any proposal to disaggregate certain items on the basis of the size of the MSA, and any other proposal that would require disaggregation of data at any level below that of MSA/non-MSA, since provision of that data would be cost prohibitive and would provide LEC competitors with valuable proprietary information.⁹⁸

Several LECs urge elimination of the MSA/non-MSA disaggregation requirement as applied to access lines.⁹⁹ These parties argue that the costs imposed by the proposed disaggregation of access lines by MSA/non-MSA would be a costly, ongoing administrative procedure and would provide little meaningful information.¹⁰⁰ BellSouth asks that the Commission remove the MSA/non-MSA distinction or alternatively, remove the column labeled "Number of Access Lines."¹⁰¹

GTOC suggests that investigations of service complaints by rural end users would be less costly than collection of data by MSA.¹⁰² NYNEX states that it would not be unduly burdensome to disaggregate federal complaint and switch downtime data by MSA/non-MSA, but argues that provision of data at that level for state complaints and trouble reports would increase NYNEX's costs without providing meaningful information.¹⁰³ BellSouth opposes MSA/non-MSA transmission quality reporting, since one end of a circuit might be in an MSA and the other not. BellSouth asserts that digital transmission quality is a

96 USTA Comments at 10; Bell Atlantic Comments at 2 n.4 (asserting that this information would not provide any useful information on service quality in rural areas).

97 SWB Comments at 13.

98 BellSouth Comments at 5, 15.

99 SEE, e.g., NYNEX Comments at 5; BellSouth Comments at 4; BellSouth Reply at 5.

100 See also Pactel Reply at 5-6.

101 BellSouth Comments at 4-5.

102 GTOC Comments at 3.

103 NYNEX Comments at 5.

large customer issue, not a rural/urban issue, and further cautions that the information requested cannot be accurately constructed retroactively.¹⁰⁴

States and user groups, on the other hand, support the disaggregation of data to MSA and non-MSA, and in some cases suggest still further disaggregation, such as to the four levels of MSAs mentioned in the Public Notice.¹⁰⁵ Hawaii supports MSA/non-MSA disaggregation, stating that users' incentives and opportunities to utilize alternatives to LEC access provision differ across geographic areas. Hawaii argues that absent competition, LEC responsiveness in terms of time and technical availability will diminish.¹⁰⁶ MCI contends that this disaggregation is useful in measuring service quality and infrastructure development in rural versus urban areas, and notes that none of the LECs who say this data is useless has explained or supported this argument.¹⁰⁷ TCA suggests that LECs be required to disclose on an exception basis those wire centers that do not meet the LECs' internal standards.¹⁰⁸ Hawaii argues that the complaint report (Table 5) fails to differentiate between small and large businesses, and does not include complaints filed with the LECs themselves, which, Hawaii argues, includes the vast majority of customer complaints.¹⁰⁹

These parties also dispute LEC assertions of cost and burden in MSA/non-MSA reporting.¹¹⁰ TCA asserts that many state commissions require reporting at least this disaggregated, and that assigning a wire center to a class of MSA or to non-MSA would be far from burdensome.¹¹¹ Further, TCA argues, any costs or burdens are fully justified by the need for this data, since "there are simply too many ways that the LECs could cut costs in a manner that disproportionately affects less urban areas."

104 BellSouth Comments at 13-16.

105 See, e.g., TCA Reply at 7-9.

106 Hawaii Comments at 4.

107 MCI Reply at 7.

108 TCA Comments at 13; TCA Reply at 7-8.

109 Hawaii Comments at 6.

110 See, e.g., MCI Reply at 7 (stating that a simple low-cost mapping of the zip code or county of the switch location, and a cross-tabulation of this information with the report data, allows this reporting).

111 TCA Reply at 9-10.

As noted in the Order, at para. 39, we will retain the geographic disaggregation of service quality data that was proposed in our March 8 Public Notice. We believe that this requirement will not be unduly burdensome for LECs, and that the benefit of collecting this data outweighs the burden imposed. In view of LEC statements that they will need extra time to develop this disaggregated reporting, we will require MSA/non-MSA reporting as of June 30, 1991, only for federal complaints; the MSA/non-MSA distinction need not be shown on the other three reports until entry of these reports into ARMIS in August 1991. We note that if our monitoring and analysis indicate that undesirable developments are occurring, or that more detailed reporting is called for, we will revisit this issue.

2. Other Geographic Disaggregation

Michigan supports the NARUC resolution's suggestion that some reporting be done at the local wire center level and by NPA-NNX as opposed to at the study area level and with MSA/non-MSA distinctions.¹¹² Michigan also urges the inclusion of additional measurements, as proposed by NARUC.¹¹³ Florida recommends that the Commission require that reports be provided on an exchange basis to preclude the averaging-away of poor service quality conditions in small rural exchanges.¹¹⁴ Boeing and TCA suggest that LECs be required to report results for each wire center.¹¹⁵ The LECs oppose this "microscopic" reporting, stating that it would be extremely expensive and cumbersome, and

112 Michigan Comments at 2. Michigan asserts that the more aggregated reporting included in the March 8 Public Notice would mask service deficiencies, especially in small rural offices, and that the more detailed reporting would allow for the correlation of this data with census bureau and statistical data at the county level. Accord Allnet Reply at 4; NARUC Comments at 7.

113 Michigan Comments at 3-4; NARUC Comments at 5-6 (suggesting inclusion of specific local loop, switching, and rate information, inter alia).

114 Florida Comments at 1-2, 6. It cites, as an example, that if an exchange such as Cedar Key (which has 700 lines) were to be included in a service center with Miami (which has almost a million access lines), the Cedar Key exchange could be entirely out of service but would affect the overall rate by only a small fraction of a percentage point. See also Hawaii Comments at 3-4; Hawaii Reply at 1-2 (urging reporting on 4 levels of MSA and separation of small and large businesses).

115 Boeing Comments at 13; TCA Comments at 9-10. TCA suggests that reporting be performed on an exception basis in addition to providing overall results regarding percentage of compliance with LECs' service quality standards.

asserting that no party has shown any need or justification for it.¹¹⁶ As discussed in the Order at para. 39, we will not require this level of detail in the monitoring plan.

3. Service Disaggregation

SNET objects to the disaggregation of data by both switch size and MSA/non-MSA, stating that switch size does not indicate a rural/urban distinction and is therefore unnecessary.¹¹⁷ NYNEX and BellSouth oppose any more detailed service breakout, including the categorization used in the BOC ONA Reconsideration Order and mentioned in March 8 Public Notice.¹¹⁸ BellSouth supports reporting by switched and special access categories, and notes that all price cap LECs are capable of reporting at this level of detail.¹¹⁹

Other parties urge further disaggregation of services in accordance with the categories in the BOC ONA Reconsideration Order. TCA asserts that disaggregation beyond the access category level is essential in order to deter migration of customers among same-category services.¹²⁰ Boeing asserts that reporting at the level required in the BOC ONA Reconsideration Order should not impose substantial burdens on the carriers.¹²¹

¹¹⁶ See, e.g., Bell Atlantic Reply at 1; BellSouth Reply at 8, 11; Pactel Reply at 4-6. USTA urges that, with 43,000 NXXs in the United States, the time and expense required to report such data, and the time and expense required of Commission staff to review it, surely outweigh any perceived benefit in having that level of detail. USTA Reply at 10.

¹¹⁷ SNET Comments at 7-8.

¹¹⁸ NYNEX Comments at 7-8; BellSouth Comments at 5-7. Accord USTA Reply at 9 (noting that the requirement would be duplicative for BOCs and onerous for non-BOCs). BellSouth argues that the ONA reports would not be readily transferable to the filing requirements here. BellSouth Comments at 5-6.

¹¹⁹ BellSouth Comments at 6-7 (noting that management is evaluated according to the categories in the Commission's original proposal).

¹²⁰ TCA Comments at 10-11 (stating that migration between voice grade and high capacity special access services caused by LECs' strategic pricing has previously been a problem for TCA members, and that selective manipulation of service quality is simply another effective means for a LEC to reach the same strategic end). See also TCA Comments at 7; TCA Comments at 10; TCA Reply at 11-13.

¹²¹ Boeing Comments at 13-14 (BOCs already collect information for their ONA non-discrimination reports which is similar to that required in the proposed

As in the case of requests for further geographic disaggregation, we are not convinced that increasing the level of reporting detail is either necessary or desirable. We have modified reporting requirements here in ways that will capture some urban/rural distinctions, and we are collecting very detailed information on network investment in our infrastructure reports. If any of our monitoring persuades us that further detail is necessary, we will revisit this issue, but we do not find any present justification for expanding our reporting requirements in this way.

B. Standards

1. Standards in Interstate Tariffs

Some parties favor disclosure of service standards, particularly standards for data transmission quality, in the LECs' interstate access tariffs.¹²² Boeing specifies that LECs should be required to include availability and bit error rate standards in their interstate access tariffs for digital private lines.¹²³ TCA argues that the LECs' internal standards should be disclosed wherever a report relies on those standards.¹²⁴

Boeing and TCA argue for a Bureau requirement that the LECs publish their internal service quality standards in their federal tariffs.¹²⁵ D.C. PSC urges the Bureau to standardize the collection of data further.¹²⁶ TCA

installation and repair interval reports). Accord TCA Comments at 11.

122 TCA Comments at 5-8; Boeing Comments at 2-6; ADAPSO Reply at 1-3; Boeing Reply at 3-6; Information Industry Association (IIA) ex parte letter of May 13, 1991; TCA Reply at 3 (LECs should file standards for every service category in Attachment D [from the BOC ONA Reconsideration Order]).

123 Boeing Petition at 6-10; accord ADAPSO Reply at 1-3.

124 TCA Comments at 5-8 (requiring the LECs to report information that is not based on published standards permits the carriers to manipulate the monitoring reports, and prevents meaningful comparisons between LECs).

125 Boeing Comments at 3-4; TCA Comments at 5-7 (require that LECs certify that the tariffed standards are no lower than those in effect as of January 1, 1991, or to justify the decreases; afford users an opportunity to question standards that appear low in light of improving technology). See also TCA Reply at 3 (standards would give meaning to the current "pass/fail" system the LECs use in reporting; standards would help users plan their networks).

126 D.C. PSC Comments at 2 (LECs should certify in their tariffs that they will conform to voice and data quality standards developed by the American

argues that public disclosure of LEC standards would either satisfy users' concerns or convince LECs to promise improved performance.¹²⁷ ICA voices a fear that price cap regulation will encourage LECs to freeze service quality standards at old, inappropriate levels, thereby allowing them to charge premium rates for service quality that is in fact standard.¹²⁸ ADAPSO notes that no party has offered any sound reasons why standards should not be included in tariffs.¹²⁹ Boeing asserts that, in the absence of standards against which to measure the performance of the lines, it is difficult to require LECs to repair or replace the circuits.¹³⁰ As a concomitant to the inclusion of standards in tariffs, some of these parties assert, the Commission should develop new or expedited complaint processes.¹³¹ Boeing suggests that the Commission establish regional forums for dispute resolution, as an immediate and intermediate step before complaints.¹³²

Some of the LECs oppose the requirement to include service standards in interstate tariffs, stating that it would result in administrative overload with no appreciable benefit.¹³³ SNET states that, although it does include many performance standards within its tariffs, it opposes any requirement

National Standards Institute (ANSI)).

127 TCA Comments at 7.

128 ICA Comments at 2-4 (old, analog network standards should become a "floor" for service quality; floor should rise with the introduction of new technologies).

129 ADAPSO Reply at 3; accord Boeing Reply at 6-9 (noting that only Pactel objects to such inclusion, and then only on the grounds that including standards in tariffs will likely result in increased litigation over terms and conditions). See also TCA Reply at 4.

130 Boeing Comments at 5 (although it engages in testing prior to accepting new circuits to determine whether they are of the desired quality, private lines can deteriorate).

131 Michigan Comments at 1; TCA Comments at 4 n.5.

132 Boeing Reply at 8, 17-19.

133 See, e.g., Pactel Reply at 7-8 (stating that standards change often, and each change would require a tariff revision filing, and that services are often tailored to individual customers.)

to do so.¹³⁴ USTA, too, argues that there is no need to require that standards be included in tariffs.¹³⁵

As stated in the Order at para. 44, we will not at this time impose a requirement that LECs file service standards in their tariffs.

2. National Standards

TCA argues that the Bureau should take specific steps to promote uniformity among the LECs regarding the establishment of standards.¹³⁶ Pactel acknowledges the need for national standards, but urges that this be left to the T1Q1 Technical Subcommittee.¹³⁷ Boeing asserts that private sector forums are inadequate and should be required to report their progress to the Bureau periodically.¹³⁸

Michigan urges the establishment of a new Joint Board for the purpose of recommending national uniform service quality standards.¹³⁹ Meanwhile,

134 SNET Reply at 10. SNET emphasizes the burden, the cost, and the lag involved in such a requirement.

135 USTA Reply at 5.

136 TCA Comments at 5-7. TCA urges the Bureau to establish a forum for LECs and users to develop nationwide service quality standards, and to require that a Bureau staff member attend all the sessions and that periodic reports be submitted. TCA Comments at 7; TCA Reply at 5-6 (finding record support for such a development). See also Boeing Comments at 9-10 (suggesting that the Bureau direct LECs to work with users to develop realistic service quality standards, particularly in the area of data transmission quality). These groups would meet regularly, reporting periodically to the Bureau, and would serve as a complement and catalyst to the T1Q1 group currently working on standards development. Boeing Reply at 19.

137 Pactel Reply at 16. But see TCA Reply at 15 (it is unclear when or if T1Q1 will ever finalize standards).

138 Boeing Comments at 9-10 n.3; Boeing Reply at 17-18.

139 Michigan Comments at 1-2. The Joint Board should use the NARUC resolution, "Monitoring of the Effects of Interstate Price Caps for Local Exchange Carriers," adopted February 27, 1991, Michigan urges, and should develop uniform data reporting requirements, uniform service quality standards, and enforcement procedures and penalties. See also NARUC Comments at 4-6.

Michigan asserts, the Commission should require LECs to include their existing service quality standards in their interstate tariffs, to facilitate the development of national standards as well as to improve customer access and improve the complaint process. Hawaii states that it is necessary to verify and enforce LEC service quality standards.¹⁴⁰

BellSouth counters that standards are not required.¹⁴¹ BellSouth opposes the use of service standards in the monitoring of the LEC price cap plan, and suggests that industry forums and attention to customers' desires is more appropriate to determine service quality benchmarks.¹⁴² Bell Atlantic notes that the Commission has already considered and rejected the establishment of national standards.¹⁴³

With regard to the broader question of the development of national service quality standards, the Commission determined that there is no present need to develop national standards for service quality, and that question is therefore not before us. We dismiss the comments urging the Bureau to establish a standards entity, as they constitute a belated petition for reconsideration. With regard to the question of increasing uniformity in existing reporting, the Commission stated that this is our goal, and will be accomplished in an ongoing approach. We believe that our detailed definitions and requirements here, and the filing of all required data in the automated database system, ARMIS, will result in significant strides toward uniformity.

C. Small LECs

Rochester argues that Tier 2 price cap carriers have sufficient incentive under the price cap scheme to provide high quality service, and should thus be excused from detailed and burdensome reporting.¹⁴⁴ USTA reiterates its argument that smaller LECs (Tier 2 and below) should be exempt from service quality and infrastructure reporting requirements.¹⁴⁵ Rochester

140 Hawaii Reply at 2-3.

141 BellSouth Comments at 3; accord USTA Reply at 5.

142 BellSouth Comments at 3.

143 Bell Atlantic Reply at 3; see also NYNEX Reply at 2-3; SWB Reply at 4-5; USTA Reply at 5.

144 Rochester Comments at 9.

145 USTA Comments at 5-7; see also Rochester Comments at 3, 6-9 (requirements would not substantially increase the amount of meaningful data available, but would place undue burdens on Tier 2 carriers considering election of price caps); United Comments at 3-5.

states that the proposed requirements would result in greater additional costs per access line for smaller than for larger carriers.¹⁴⁶ United and Rochester argue that the Commission has previously relieved smaller LECs of reporting requirements imposed on larger LECs, and urge that the Bureau again recognize the special circumstances of smaller LECs and exempt them from the proposed reporting requirements.¹⁴⁷ No party opposed these assertions.

While we appreciate the concerns of these price cap carriers that have small affiliates, the Bureau is not authorized to diverge from the Commission's determination that all price cap carriers will file the required quarterly reports. The Commission has expressed and affirmed its intention to examine these carriers' concerns in detail in a separate proceeding; in the meantime, all price cap carriers will be required, except as discussed here and absent a waiver, to file the mandated reports.

D. Exogenous Treatment of Reporting Costs

BellSouth asserts that all costs associated with the development, maintenance, and provision of service quality data should be considered exogenous cost adjustments to the price cap index. BellSouth states the historical productivity information used to set the LEC productivity offset did not include the costs associated with new service quality and infrastructure monitoring requirements.¹⁴⁸ Boeing opposes this argument,

146 Rochester Comments at 7. See also United Comments at 3-4 (the National Telecommunications Information Agency (NTIA) estimates that for large LECs the direct cost of regulation is between \$6 and \$8 per access line annually, whereas for small LECs, compliance costs may range up to \$45 per access line annually).

147 United Comments at 4-5; Rochester Comments at 7-8 (noting that the ARMIS quarterly financial reporting requirements and the Tariff Review Plan reporting requirements for annual access filings are less burdensome for Tier 2 than for Tier 1 carriers). Further, Rochester notes that some reporting requirements, such as installation and repair intervals and trunk blocking, would not be measurable by a secondary Tier 2 carrier that provides access to interexchange carriers indirectly through access tandem arrangements with other primary exchange carriers.

148 BellSouth Comments at 7; BellSouth Reply at 4-5. Accord SNET Reply at 1-3 (permitting exogenous cost adjustment for the reports would help ensure that LEC customers request only reports that would actually be needed).

stating that service quality reporting costs are endogenous.¹⁴⁹ MCI notes that if the LECs can manage to develop the needed reporting schemes for calculating PCIs, APIs, and SBIs to reap the benefits of price cap regulation, they can and should be made to develop the requisite service quality and infrastructure monitoring reporting as well.¹⁵⁰

We reject BellSouth's proposal. The Commission allows exogenous treatment for costs that are outside the LECs' control and are imposed by an external, often regulatory, body. Service quality data collection is clearly within the parameters of operations that should and must be undertaken by each LEC in the course of its business and in its provision of service. Further, to the extent that the service quality monitoring program does impose costs, this imposition is balanced by substantial reductions in costs of preparation of other required filings, such as the annual access filing. The filing with this Commission of service quality and infrastructure data is a natural outgrowth of LEC operations and of the fact that LECs are regulated companies. Service quality and infrastructure reporting have been a stated and essential part of the LEC price cap plan from its inception.¹⁵¹ The cost of such data collection and filing does not merit exogenous treatment.

E. Miscellaneous

Centel urges that the Commission use service quality data already available from carriers, state commissions, and interexchange carriers, and states that the slight differences in methodologies and measurements will not affect the usefulness of these data sources.¹⁵² D.C. PSC recommends that the Bureau collect data from the the monthly blockage reports submitted by LECs to interexchange carriers, and from the Local Exchange Routing Guide (LERG) compilation of information on switches updated monthly by Bellcore, in

149 Boeing Reply at 15 n.34. Accord MCI Reply at 2-3 n.4 (the service quality and infrastructure monitoring program is an inherent part of the LEC price cap plan, and its costs are thus endogenous).

150 MCI Reply at 8. Accord TCA Reply at 18-19 (it is the risk / reward system itself that creates the threat to service quality and infrastructure that in turn militates for this reporting and monitoring plan).

151 Second Further Notice, 4 FCC Red 2873 (1989); LEC Price Cap Order, 5 FCC Red 6786 (1990); LEC Price Cap Reconsideration Order, FCC 91-115, rel. Apr. 17, 1991.

152 Centel Comments at 5-6; Centel Reply at 2 (Commission could develop uniform format, and allow LECs to report data already collected for state commissions, plus data from consumer surveys and other sources).

addition to the reporting proposed in the Public Notice.¹⁵³ Although it appears, upon examination of the materials provided by D.C. PSC, that the monthly reports and the LERG contain detailed and useful information, such reconsideration of the Commission's determination is beyond our delegated authority and beyond the scope of this proceeding.

ICA asserts that the Commission should evaluate how the service quality data will be utilized, since, if trend analysis is the objective, the need for strictly comparable inter-carrier comparisons is limited.¹⁵⁴ ICA suggests that an indexing system be established, with current performance set at 100, to trace trends of deterioration or improvement, and that this index be responsive to changes in technology. ICA believes that deterioration should be penalized, and suggests a lowering of the LEC's PCI as a meaningful penalty. The Commission has stated its intention of developing service quality and infrastructure data collections that will be available to, and used by, state commissions, users, and other interested parties, as well as Commission staff. It has also stated that this data collection will focus on trends rather than absolutes.¹⁵⁵ Any further examination of the data's use is beyond the scope of this proceeding. Centel suggests that the Commission use the service quality and infrastructure data it is collecting to develop a "bonus" plan for companies that meet or exceed certain industry standards for customer satisfaction, service quality, and network modernization.¹⁵⁶ This proposal was submitted to, and rejected by, the Commission in the reconsideration proceeding,¹⁵⁷ and is thus dismissed.

ICA urges that the reports included in the ARMIS system be subject to the usual certification process, and therefor to the penalties under Section 220(e) of the Communications Act.¹⁵⁸ The certification process is an innate part of the ARMIS system, and is accordingly included in the view ARMIS reports.

Michigan argues that policies or procedures adopted as a result of the Bureau's proceeding should not pre-empt any state's authority to regulate

153 D.C. PSC Comments at 3; D.C. PSC Ex parte of May 8, 1991.

154 ICA Comments at 7-11.

155 LEC Price Cap Order, 5 FCC Rcd at 6827, paras. 332-337.

156 Centel Comments at 7.

157 LEC Price Cap Reconsideration Order at para. 192.

158 ICA Comments at 6, citing Communications Daily report of BellSouth falsified reports, April 2, 1991. Accord MCI Reply at 9 n.21.

quality of service in the intrastate jurisdiction.¹⁵⁹ The Commission has made clear that its monitoring program will not preempt or interfere with any states regulatory authority or procedures.¹⁶⁰

F. Timing and Procedural Matters

General questions regarding filings dates and requirements are addressed in the Order at paras. 46-47. Other, more specific questions and requests are addressed here.

Pactel requests an extension of time to complete Infrastructure Table II.¹⁶¹ Pactel has made its request in only the most general terms, however, and has not shown good cause for an extension. If Pactel can demonstrate good cause why it should be excused from the June 30 filing date for its Infrastructure Report on transmission facilities, it should submit this showing in the context of a request for waiver.

Pactel also requests permission to file its "average interval of missed commitments" in Table I of the Quarterly Service Quality Reports using a measure of "average delay days," stating that it requires "several months...to develop the capability and to gather the data in the proposed format."¹⁶² We will grant Pactel's request and allow Pactel to use "delay days" in this report for the June 30, 1991 filing only. Pactel must use a footnote to define exactly what it means by "delay days" and how they are calculated. Commencing with the September 30, 1991 filing, Pactel will use the standard measurement of "average interval."

Pactel requests permission to report total switch downtime as a count of reports to Pactel's emergency control centers rather than giving a total, cumulative count of downtime. Pactel does not state any undertaking to develop the reports detailed in the March 8 Public Notice, nor does it defend the usefulness or adequacy of its proposed alternative. Pactel has been on notice since fall 1990, through numerous Commission - industry discussions and exchanges, that reporting of cumulative switch downtime would be required; this factor was formalized in the Bureau's March 8 Public Notice. We find no good cause to grant Pactel further extension or the use of its proposed alternative in this regard.

159 Michigan Comments at 4. Accord NARUC Comments at 10.

160 LEC Price Cap Order, 5 FCC Rcd at 6829, para. 350.

161 Pactel Comments at 16.

162 Pactel Comments at 5.

Attachment C
ARMIS Format Reporting Tables
Price Cap LEC Service Quality and Infrastructure Monitoring

Report 43-05	Quarterly Service Quality Report
Report 43-06	Semiannual Service Quality Report
Report 43-07	Annual Infrastructure Report

This document provides the instructions for FCC Report 43-05, the ARMIS Service Quality Report, which was adopted by the Commission in CC Docket No. 87-313. The instructions consist of the following sections, which are attached.

1. Reporting Procedures - details on the specific procedures to be followed when submitting this report to the Commission.
2. Report Definition - an illustration of the rows and columns to be reported and their definitions.

A. Introduction

This document contains details on the specific procedures to be followed when submitting FCC Report 43-05, the ARMIS Service Quality Report, to the Commission.

B. General Information

1. FCC Report 43-05 was adopted by the Commission in the LEC Price Cap Order, Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order, CC Docket No. 87-313, 5 FCC Rcd 6786, 6827-30 (1990). This report is prescribed for every local exchange carrier for whom price cap regulation is mandatory and for every local exchange carrier that elects to be covered by the price cap rules.
2. Affected carriers shall file by March 31, June 30, September 30 and December 31 of each year the report for the previous calendar quarter. The initial report will be filed in June 1991 and will contain data for the first quarter of calendar year 1991.
3. The report shall be filed on a study area (jurisdiction) basis.
4. Each report and diskette must be clearly labeled to include the report number, company, study area, period, COSA code, version and submission number. The report number is 43-05, which identifies the filing as the ARMIS Service Quality Report. The period identifies the year and quarter covered by the data. See the attached COSA Code Table (CO = Company, SA = Study Area) for a list of companies and their respective COSAs. The version refers to whether the filing is confidential, public or unrestricted. The submission number is defined as follows: Submission 0 is for test data purposes only. Submission 1 is the first submission of a quarter's data. Higher numbers (2, 3, etc.) would be used if needed for successive revisions to correct that quarter's submission.
5. All correspondence and pleadings shall identify the proceeding as CC Docket No. 87-313.

C. Where to file

1. Carriers submitting FCC Report 43-05 should consult the schedule below which details the number of copies required and the location to which those copies should be delivered.

2. Carriers are reminded that they must serve a copy of both the paper report and the automated report (diskette) on the FCC's contractor for public records duplication, Downtown Copy Center at 1114 21st. Street, N.W., Washington D.C. 20036 or delivered to Downtown Copy Center in Room 246 at FCC Headquarters, 1919 M Street, N.W., Washington, D.C. 20036.

NUMBER OF COPIES

	Trans- mittal Letter	Paper Report	Automated Report (diskette)
FCC Secretary Room 222 1919 M Street, N.W. Washington D.C. 20554	1	-	-
FCC Common Carrier Bureau Accounting & Audits Division Room 812 2000 L Street, N.W. Washington, D.C. 20554	1	1	1
FCC Common Carrier Bureau Industry Analysis Division Room 538 1919 M Street, N.W. Washington, D.C. 20554	1	1	1
Downtown Copy Center Room 246 1919 M Street Washington, D.C. 20036	1	1	1

D. Footnotes

1. If any data for the current period differs materially from that for the previous period or the corresponding period of the preceding year and the difference is not self-explanatory but was caused by unusual circumstances, then include footnote text to explain the specific circumstances.

2. If the reporting carrier does not follow the procedures described in the row and column instructions of the attached Report Definition, it must explain any deviations from those procedures in an explanatory footnote. Such footnotes must provide detailed explanations of the procedures actually used by the carrier and its specific reasons for deviating from the procedures prescribed by the Commission's Rules. This provision should not be interpreted to mean that deviations from the prescribed rules will automatically be approved by the Commission.
3. Do not include explanatory footnotes in the transmittal letter. The footnote text must be included in the Footnote Text Records and the Footnote Table as specified in the Automated Report Specifications.

E. Errata

1. Carriers are under a legal obligation to correct any erroneous data discovered in FCC Report 43-05. Submissions containing corrected data must include references to indicate which data items were corrected since the previous submission.
2. Those references must be included in the Erratum Records and the Erratum Table as specified in the Automated Report Specifications.

F. Certification

1. Carriers must certify the accuracy of the data submitted in FCC Report 43-05 by including a signed certification statement as the last page of the paper report.
2. The text of the certification statement is included on page 19 of 19 in the attached report definition.

G. Waivers

1. If a carrier determines that it will be unable to provide data required by FCC Report 43-05, it must file an application for waiver with the Commission following established Commission procedures. All such requests from a carrier should be included in a single application. The application must demonstrate good cause for reporting a different or lower level of detail and indicate how these deficiencies will be corrected.

2. Omission of individual data items or entries, without request for waiver, is unacceptable. One reason that compliance with the full requirements is so important is that omission of any single data entry by any carrier will jeopardize the accuracy of aggregate industry information.

H. Public Information

1. The paper reports filed as Report 43-05 may be examined by the public from 9:00 to 11:00 a.m. and from 2:00 to 4:00 p.m., Monday through Friday, in Room 812, 2000 L Street, N.W., Washington, D.C.
2. Copies of the paper or automated reports filed as Report 43-05 may be obtained from the FCC's contractor for public records duplication, Downtown Copy Center at (202) 452-1422.

For further information regarding these procedures, contact:

Barbara Van Hagen
FCC Common Carrier Bureau
Accounting & Audits Division
(202) 634-1861

Estimated Burden Hours Per Response: 833 hours

SUMMARY

This document provides the Report Definition for FCC Report 43-05, the ARMIS Service Quality Report which must be provided quarterly by study area. It contains the following:

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Certification	19

All percentage amounts must be entered in percent and rounded to 1 decimal place. All minutes must be rounded to the nearest tenth. Number of Access Lines must be rounded to the nearest thousand.

All fields must be populated. If there are no data applicable to a field, enter zero in that field. If a filing carrier has a waiver applicable to a certain field, enter zero in that field and footnote the reason for entering zero.

Do not include explanatory footnotes in the transmittal letter; such notes must be included in the Footnotes section of the filing.

NOTICE: The ARMIS Service Quality Report collects data designed to capture trends in service quality under price cap regulation and improves and standardizes existing reporting requirements for this purpose. The ARMIS Service Quality Report specifies information requirements in a consistent format and is essential to the FCC to monitor service quality under price cap regulation. Your response is mandatory.

Public reporting burden for this collection of information is estimated to average 833 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Office of Managing Director, Washington D.C. 20554, and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, D.C. 20503.

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From xxxx yyyy To xxxx yyyy
 COSA: xxxx

TABLE I - INSTALLATION AND REPAIR INTERVALS
 (Interexchange Access)

Row	Classification	Column		
		Switched Access	High Speed Special Access	All Special Access
		(a)	(b)	(c)

INSTALLATION INTERVALS:

0110	Total Number of Orders or Circuits		N/A	
0112	% Commitments Met		N/A	
0113	Average Missed Commitment		N/A	

REPAIR INTERVALS:

0120	Total Trouble Reports			
0121	Average Interval			

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

xxxxxxxxxxxxx VERSION

STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SUBMISSION x

PERIOD: From xxxx yyyy To xxxx yyyy

TABLE II

COSA: xxxx

TABLE II - INSTALLATION AND REPAIR INTERVALS
(Local Service)

Row	Classification	Column					
		Residence			Business		
		MSA	Non-MSA	Total	MSA	Non-MSA	Total
(d)	(e)	(f)	(g)	(h)	(i)	(j)	

INSTALLATION INTERVALS:

0130	Installation Orders							
0132	% Commitments Met							
0133	Avg Missed Commit							

REPAIR INTERVALS:

0140	Total Access Lines							
0141	Init Trouble Reports							
0142	Rep Trouble Reports							
0143	No Trouble Found							

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From xxxx yyyy To xxxx yyyy
 COSA: xxxx

TABLE III - TRUNK BLOCKAGE

Row	Classification	Column		
		Month 1	Month 2	Month 3
		(k)	(l)	(m)
0180	Total Trunk Groups			
0181	Groups Measured			
0182	Groups Exceed Threshold 3Mos			
0183	Groups Exceed Threshold 1 Mo			
0184	Groups Exceed Objectives 3Mos			

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From xxxx yyyy To xxxx yyyy
 COSA: xxxx

TABLE IV - TOTAL SWITCH DOWNTIME

Row	Classification	Column					
		Total Number	No Switch	Total Switch	Incidents	Number	Percent
		Switches	Downtime	Downtime	Under 2	Unscheduled	Unscheduled
		(n)	(o)	(p)	(q)	(r)	(s)
0200	MSA						
0201	Non-MSA						
0210	Switches Under 1000 Lines						
0211	Switches 1000-4999 Lines						
0212	Switches 5000-9999 Lines						
0213	Switches 10000-19999 Lines						
0214	Switches Over 20,000 Lines						

COMPANY: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 STUDY AREA: XXXXXXXXXXXXXXXXXXXXXXXX
 PERIOD: From xxxx yyyy To xxxx yyyy
 COSA: XXXX

TABLE IV.A - OCCURRENCES OF TWO MINUTES OR MORE DURATION DOWNTIME

Row	Explanation	Switch by CLI	Access Lines	MSA	Duration
	(t)	(u)	(v)	(w)	(x)
0220					
0221					
0222					
0223					
0224					
0225					
0226					
0227					
0228					
0229					
0230					
0231					
0232					
0233					
0234					
0235					
0236					
0237					
0238					
0239					
0240					
0241					
0242					
0243					
0244					
0245					
0246					
0247					
0248					
0249					
0250					
0251					
0252					
0253					
0254					

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From xxxx yyyy To xxxx yyyy
 COBA: xxxx

TABLE IV.A - OCCURRENCES OF TWO MINUTES OR MORE DURATION DOWNTIME

Row	Explanation (t)	Switch by CLLI (u)	Access Lines (v)	MSA (w)	Duration (x)
0255					
0256					
0257					
0258					
0259					
0260					
0261					
0262					
0263					
0264					
0265					
0266					
0267					
0268					
0269					
0270					
0271					
0272					
0273					
0274					
0275					
0276					
0277					
0278					
0279					
0280					
0281					
0282					
0283					
0284					
0285					
0286					
0287					
0288					

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmm yyyy To mmmm yyyy
 COSA: xxxxx

TABLE IV.A - OCCURRENCES OF TWO MINUTES OR MORE DURATION DOWNTIME

Row	Explanation (t)	Switch by CLLI (u)	Access Lines (v)	MSA (w)	Duration (x)
0289					
0290					
0291					
0292					
0293					
0294					
0295					
0296					
0297					
0298					
0299					
0300					
0301					
0302					
0303					
0304					
0305					
0306					
0307					
0308					
0309					
0310					
0311					
0312					
0313					
0314					
0315					
0316					
0317					
0318					
0319					

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

xxxxxxxxxxx VERSION

STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx

SUBMISSION x

PERIOD: From mmmn yyyy To mmmn yyyy

TABLE V

COSA: xxxx

TABLE V - SERVICE QUALITY COMPLAINTS

Row	Classification	Column		
		Total	MSA	Non-MSA
		(y)	(z)	(aa)
0320	No Business Access Lines			
0321	Fed Complaints Bus Users			
0322	State Complaints Bus Users			
0330	No Residential Access Line			
0331	Fed Complaints Res Users			
0332	State Complaints Res Users			

Quarterly Service Quality Report

General Instructions

For the purposes of this report, the terms switch, switching entity and entity are used interchangeably. The terms access lines, lines and lines in service are also used interchangeably. Switch counts are updated quarterly and access line counts are updated annually, representing year end counts.

Row Instructions

Table I

Row 0110 - Total Number of Orders or Circuits - Enter the total number of installation orders or circuits from Interexchange carriers/customers for the current reporting period on this row. This amount excludes installation orders not completed by the commitment date because the customer was not prepared to receive service on that date. If circuits are entered instead of the number of installation orders, disclose this information in a footnote to this row.

Row 0112 - % Commitments Met - Enter the percentage of commitments met during the current reporting period on this row. This amount is calculated by dividing the number of installation orders or circuits from Interexchange carriers/customers completed by commitment date by the total number of installation orders or circuits (row 0110). NOTE: The commitment dates for various kinds of installations are published by the LECs and must be kept on file with the Commission. Commitment dates may be extended at the customer's request.

Row 0113 - Average Missed Commitment - Enter the average interval, expressed in calendar days, between the commitment date and the day the service or order for Interexchange carriers/customers was completed, for all commitments not met during the current reporting period on this row. If a carrier is unable to report this amount in calendar days, business days may be entered and so footnoted.

Row 0120 - Total Trouble Reports - Enter the total number of circuit specific trouble reports referred to the LEC by interexchange carriers/customers during the current reporting period.

Row 0121 - Average Interval - Enter the average interval, in hours to the nearest tenth, from the time of the reporting carrier's receipt of the trouble report to the time of acceptance by the complaining interexchange carrier/customer.

Table II

Row 0130 - Installation Orders - Enter the total number of installation orders, or circuits, for local service customers for the current reporting period. This amount excludes installation orders not completed by the commitment date because the customer was not prepared to receive service on that date. If circuits are entered instead of the number of installation orders, disclose this information in a footnote to this row.

Row 0132 - % Commitments Met - Enter the percentage of commitments met during the current reporting period on this row. This amount is calculated by dividing the number of installation orders completed by commitment date by the total number of installation orders (row 0130).

Row 0133 - Average Missed Commitment - Enter the average interval, expressed in calendar days, between the commitment date and the day the service or order was completed, for all commitments not met during the current reporting period on this row. If a carrier is unable to report this amount in calendar days, business days may be entered and so footnoted.

Row 0140 - Total Access Lines - Access lines include all classifications of local exchange telephone service including, but not limited to, individual lines, party line access, PBX access, Centrex access, Coin access, Foreign Exchange access and WATS access. Access lines, as defined herein, is a more inclusive term than billable access lines as defined in ARMIS 43-01 and 43-04 reports. See row instructions for rows 2090 through 2140 of the ARMIS 43-01 Report and row 9010 of the ARMIS 43-04 Report for the definition of billable access lines.

Row 0141 - Initial Trouble Reports - Enter the number of trouble reports (complaints concerning service quality made by customers or end users to LECs) received by the reporting carrier during the current reporting period.

Row 0142 - Repeat Trouble Reports - Enter the number of repeat trouble reports (complaints concerning service problems that recur, or remain unresolved, within thirty days of the initial trouble report) received by the reporting carrier during the current reporting period.

Row 0143 - No Trouble Found - No trouble found refers to a trouble report investigation which finds no discernible problem. Enter the number of investigations which found no problem during the current reporting period.

Table III

Row 0180 - Total Trunk Groups - Enter the total number of common trunk groups for which the reporting carrier is responsible. Common trunk groups are trunk groups between the LEC end office and the LEC access tandem that carry Feature Group B, C and D access traffic. IntraLATA traffic may also be carried on these groups.

Row 0181 - Groups Measured - Enter the number of common trunk groups measured during the current reporting period on this row.

Row 0182 - Groups Exceeding Servicing Threshold for Three Months - Enter the number of common trunk groups which have exceeded the reporting carrier's interstate access tariff measured blocking threshold for three or more consecutive months. Trunk group servicing thresholds have been discussed in the Interexchange Carriers Compatibility Forum (ICCF) and T1Q1 Industry Forum, and are included in tariffs kept on file with the Commission. Servicing thresholds are set to indicate that there is a statistical probability that blockage is exceeding the designed blocking objective whenever such thresholds are exceeded. Servicing thresholds are generally set at 2 percent blocking for equal access trunks, and at 3 percent blocking for non-equal access trunks. The reporting carrier must disclose its thresholds in a footnote to this row. The reporting carrier must also disclose changes in its thresholds, if any, in a footnote to this row.

Row 0183 - Groups Exceeding Servicing Threshold for One Month - Enter the number of common trunk groups which have exceeded the reporting carrier's interstate access tariff measured servicing threshold for the current month.

Row 0184 - Groups Exceeding Design Blocking Objectives for Three Months - Enter the number of common trunk groups which have exceeded equipment design blocking objectives for three or more consecutive months. Design blocking objectives range from 0.5 percent to 1.0 percent of traffic in the time-consistent busy hour of the busy season. Reporting carriers must specify their design blocking objectives in a footnote to this row.

Table IV

Row 0200 - MSA - This row represents all MSAs served within the study area. MSAs, or Metropolitan Statistical Areas, are designated by the Department of Commerce in a list released following each decadal census. An MSA includes at least one city with a minimum population of 50,000, or a Census Bureau defined urbanized area of at least 50,000 population located in an area with a minimum population of 100,000. See 45 Fed. Reg. 956 (1980). This definition and the current list remain in effect until the new list of metropolitan statistical areas and changes in definition, if any, are issued in June 1992.

Row 0201 - Non-MSA - This row represents all areas in the study area which lie outside of any MSA.

Row 0210 - Switches Under 1,000 Lines - Enter the number of switches, and associated data, serving fewer than 1,000 access lines.

Row 0211 - Switches with 1,000 to 4,999 Lines - Enter the number of switches, and associated data, serving 1,000 to 4,999 access lines.

Row 0212 - Switches with 5,000 to 9,999 lines - Enter the number of switches, and associated data, serving 5,000 to 9,999 access lines.

Row 0213 - Switches with 10,000 to 19,999 Lines - Enter the number of switches, and associated data, serving 10,000 to 19,999 access lines.

Row 0214 - Switches with 20,000 and over Lines - Enter the number of switches, and associated data, serving 20,000 or more access lines.

NOTE: The sum of rows 0200 and 0201 equals the sum of rows 0210 through 0214.

Table IV.A

Rows 220 through 319 - Each of these rows is provided for entry of one occurrence of switch downtime of two or more minutes in duration. For each occurrence use one row, entering the appropriate data in the columns provided. We have assumed that no carrier will have more than 100 occurrences in a reporting quarter. If such events exceed 100 occurrences, enter the appropriate data for the remaining occurrences in a footnote to row 319.

Table V

Service Quality Complaints - Service quality complaints are complaints pertaining to service quality only. This term does not include complaints relating to billing, operator service providers, 900 or 976 services.

Row 0320 - Number of Business Access Lines - Enter the total number of business access lines as of December 31 of the previous calendar year (in thousands) in the study area on this row.

Row 0321 - Federal Complaints from Business Users - Federal complaints are complaints filed with this Commission. Enter the number of federal complaints filed by business users on this row.

Row 0322 - State Complaints from Business Users - State complaints are complaints filed with state regulatory agencies. Enter the number of state complaints filed by business users on this row.

Row 0330 - Number of Residential Access Lines - Enter the total number of residential access lines as of December 31 of the previous calendar year (in thousands) in the study area on this row.

Row 0331 - Federal Complaints from Residential Users - Enter the number of federal complaints filed by residential users on this row.

Row 0332 - State Complaints from Residential Users - Enter the number of state complaints filed by residential users on this row.

Service Quality Report

Column Descriptions

Table I

Column (a) - Switched Access - Circuit from the local exchange carrier (LEC) office to the interexchange carrier/customer Point of Presence (POP) for Feature Group B, C or D interstate service.

Special Access - Circuit from the LEC facilities to the interexchange carrier POP or customer premises for voice grade service, WATS/800, metallic and telegraph services, audio or video program services, wideband services, DDS, high-capacity, DS1, DS3, and switched Feature Group A services.

Column (b) - High Speed Special Access - Circuit from the LEC facilities to the interexchange carrier POP or customer premises for DS1, DS2, DS3 and other similar digital services.

Column (c) - All Special Access - Enter all special access data, including those entered in column (b), in this column.

Table II

Residence - Columns (d), (e) and (f) represent residential customers placing installation orders or reporting trouble to the local exchange carrier during the current reporting period.

Column (d) - MSA - MSAs, or Metropolitan Statistical Areas, are designated by the Department of Commerce in a list following each decadal census. An MSA includes at least one city with a minimum population of 50,000 and its surrounding area, or a Census Bureau defined urbanized area of at least 50,000 population located in an area with a minimum population of 100,000. See 45 Fed. Reg. 956 (1980). This definition and the current list remain in effect until the new list of metropolitan statistical areas and changes in definition, if any, are issued in June 1992. This amount represents all residential customers located within MSAs in the study area served by the reporting carrier.

Column (e) - Non-MSA - This amount represents all residential customers located outside of all MSAs in the study area served by the reporting carrier.

Column (f) - Total - This amount represents all residential customers in the study area served by the reporting carrier (the sum of columns (d) and (e)).

Business - Columns (g), (h) and (i) represent local service business customers placing installation orders or reporting trouble to the local exchange carrier during the current reporting period.

Column (g) - MSA - See column (c) for the definition of MSA. This amount represents all local service business customers located within MSAs in the study area served by the reporting carrier.

Column (h) - Non-MSA - This amount represents all local service business customers located outside of all MSAs in the study area served by the reporting carrier.

Column (i) - Total - This amount represents all business customers in the study area served by the reporting carrier (the sum of columns (g) and (h)).

Column (j) - Total - Enter the sum of columns (f) and (i) in this column.

Table III

Column (k) - Month 1 - The first month of the current reporting quarter.

Column (l) - Month 2 - The second month of the current reporting quarter.

Column (m) - Month 3 - The third month of the current reporting quarter.

Table IV

Column (n) - Total Number Switches - Switching entities (switches) are assemblies of equipment designed to establish connections between lines and trunks. Switching entities include local, class 5 switching machines and any associated remotes; e.g., a host end office and its three associated remotes will be reported as four switching entities. Switching entities designed exclusively for access tandem, class 4, or operator services are not reported here. There may be more than one switching entity per central office or wire center.

Column (o) - Number of Switches Having Downtime - This column represents the number of switches that experienced downtime during the current reporting period.

Column (p) - Total Switch Downtime - Switch downtime occurs when call processing capability for an end office is lost. Report all downtime, in cumulative minutes to the nearest tenth, in this column.

Column (q) - Incidents Under Two Minutes - This amount represents the number of incidents of downtime under two minutes in duration.

Column (r) - Number Unscheduled - This amount represents the number of incidents of switch downtime under two minutes in duration that were not scheduled for routine maintenance or network upgrades. Scheduled downtime refers to those times when a switch is taken down at a predetermined time so that it may be upgraded. Such downtimes usually occur during non-busy hours.

Column (s) - Percent Unscheduled - This amount represents the percent of downtime that is not scheduled for routine maintenance or network upgrades. (The ratio of column (r) to column (q), in percent).

Table IV.A

Column (t) - Explanation - If the switch was down as the result of some event that was totally outside of the control of the reporting carrier, enter a one word explanation in this column; for example, tornado, earthquake, fire, hurricane, etc. Otherwise, enter scheduled or unscheduled, as appropriate.

Column (u) - Switch by CLLI - See description for column (k), Table IV. Enter the eight digit CLLI (Common Language Location Identifier) code which identifies the switch that experienced downtime of two minutes or more, to the nearest tenth, in duration. Enter data for only one outage incident on a row.

Column (v) - Access Lines - The number of working network access lines served by the switch.

Column (w) - MSA - See Table II, column (c) for the definition of MSA. Enter Y if the incident involved a downed switch that lies within an MSA in the study area served. Enter N if the incident involved a downed switch outside of all MSAs in the study area served.

Column (x) - Duration - Enter the duration of the outage in minutes, to the nearest tenth, in this column.

Table V

Column (y) - Total - Enter the appropriate total study area amounts for rows 0320, 0321, 0322, 0330, 0331 and 0332 in this column. The amount in this column equals the sum of columns (z) and (aa).

Column (z) - MSA - See Table II, column (d) for the definition of MSA. Enter the appropriate MSA amounts for rows 0320, 0321, 0322, 0330, 0331 and 0332 in this column.

Column (aa) - Non-MSA - Enter the appropriate non-MSA amounts for rows 0320, 0321, 0322, 0330, 0331 and 0332 in this column.

CERTIFICATION

I certify that I am an officer of _____;
that I have examined the foregoing report and that to the best of my
knowledge, information, and belief, all statements of fact contained in this
report are true and that said report is an accurate statement of the affairs
of the above named respondent in respect to the data set forth herein for
the period from _____ to _____.

PRINTED NAME _____

POSITION _____

SIGNATURE _____

DATE _____

(Persons making willful false statements in this report form can be punished
by fine or imprisonment under the Communications Act, 47 U.S.C. 220(e).)

CONTACT PERSON _____

TELEPHONE NUMBER _____

This document provides the instructions for FCC Report 43-06, the ARMIS Semi-Annual Service Quality Report, which was adopted in CC Docket No. 87-313. The instructions consist of the following sections, which are attached.

1. Reporting Procedures - details on the specific procedures to be followed when submitting this report to the Commission.
2. Report Definition - an illustration of the rows and columns to be reported and their definitions.

A. Introduction

This document contains details on the specific procedures to be followed when submitting FCC Report 43-06, the ARMIS Semi-Annual Service Quality Report, to the Commission.

B. General Information

1. FCC Report 43-06 was adopted by the Commission in the LEC Price Cap Order, Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order, CC Docket No. 87-313, 5 FCC Rcd 6786, 6827-30 (1990). This report is prescribed for every local exchange carrier for whom price cap regulation is mandatory.
2. Affected carriers shall file by March 31 and September 30 of each year, the report for the previous calendar half. The initial report will be filed in September, 1991 and will contain data for the first half of calendar year 1991.
3. The report shall be filed on a study area (jurisdiction) basis.
4. Each report and diskette must be clearly labeled to include the report number, company, study area, period, COSA code, version and submission number. The report number is 43-06, which identifies the filing as the ARMIS Semi-Annual Service Quality Report. The period identifies the year and half covered by the data. See the attached COSA Code Table (CO = Company, SA = Study Area) for a list of companies and their respective COSAs. The version refers to whether the filing is confidential, public or unrestricted. The submission number is defined as follows: Submission 0 is for test data purposes only. Submission 1 is the first submission of a half's data. Higher numbers (2, 3, etc.) would be used if needed for successive revisions to correct that half's submission.
5. All correspondence and pleadings shall identify the proceeding as CC Docket No. 87-313.

C. Where to File

1. Carriers submitting FCC Report 43-06 should consult the schedule below which details the number of copies required and the location to which those copies should be delivered.

2. Carriers are reminded that they must serve a copy of both the paper report and the automated report (diskette) on the FCC's contractor for public records duplication, Downtown Copy Center at 1114 21st. Street, N.W., Washington, D.C. 20036 or delivered to Downtown Copy Center in Room 246 at FCC Headquarters, 1919 M Street, N.W., Washington, D.C. 20036.

NUMBER OF COPIES

	Trans- mittal Letter	Paper Report	Automated Report (diskette)
FCC Secretary Room 222 1919 M Street, N.W. Washington D.C. 20554	1	-	-
FCC Common Carrier Bureau Accounting & Audits Division Room 812 2000 L Street, N.W. Washington, D.C. 20554	1	1	1
FCC Common Carrier Bureau Industry Analysis Division Room 538 1919 M Street, N.W. Washington, D.C. 20554	1	1	1
Downtown Copy Center Room 246 1919 M Street Washington, D.C. 20036	1	1	1

D. Footnotes

1. If any data for the current period differs materially from that for the previous period or the corresponding period of the preceding year and the difference is not self-explanatory but was caused by unusual circumstances, then include footnote text to explain the specific circumstances.

2. If the reporting carrier does not follow the procedures described in the row and column instructions of the attached Report Definition, it must explain any deviations from those procedures in an explanatory footnote. Such footnotes must provide detailed explanations of the procedures actually used by the carrier and its specific reasons for deviating from the procedures prescribed by the Commission's Rules. This provision should not be interpreted to mean that deviations from the prescribed rules will automatically be approved by the Commission.
3. Do not include explanatory footnotes in the transmittal letter. The footnote text must be included in the Footnote Text Records and the Footnote Table as specified in the Automated Report Specifications.

E. Errata

1. Carriers are under a legal obligation to correct any erroneous data discovered in FCC Report 43-06. Submissions containing corrected data must include references to indicate which data items were corrected since the previous submission.
2. Those references must be included in the Erratum Records and the Erratum Table as specified in the Automated Report Specifications.

F. Certification

1. Carriers must certify the accuracy of the data submitted in FCC Report 43-06 by including a signed certification statement as the last page of the report.
2. The text of the certification statement is included on page 6 of 6 in the attached report definition.

G. Waivers

1. If a carrier determines that it will be unable to provide data required by FCC Report 43-06, it must file an application for waiver with the Commission following established Commission procedures. All such requests from a carrier should be included in a single application. The application must demonstrate good cause for reporting a different or lower level of detail and indicate how these deficiencies will be corrected.

2. Omission of individual data items or entries, without request for waiver, is unacceptable. One reason that compliance with the full requirements is so important is that omission of any single data entry by any carrier will jeopardize the accuracy of aggregate industry information.

H. Public Information

1. The paper reports filed as Report 43-06 may be examined by the public from 9:00 to 11:00 a.m. and from 2:00 to 4:00 p.m., Monday through Friday, in Room 812, 2000 L Street, N.W., Washington, D.C.
2. Copies of the paper or automated reports filed as Report 43-06 may be obtained from the FCC's contractor for public records duplication, Downtown Copy Center at (202) 452-1422.

For further information regarding these procedures, contact:

Barbara Van Hagen
FCC Common Carrier Bureau
Accounting & Audits Division
(202) 634-1861

SUMMARY

This document provides the Report Definition for FCC Report 43-06, the ARMIS Semi-Annual Service Quality Report which must be provided semi-annually by study area. It contains the following:

	<u>PAGE</u>
Table II - Dial Tone Response and Transmission Quality	2
Table II - Row Instructions	3
Table II - Column Instructions	5
Certification	6

All percentage amounts must be entered in percent and rounded to 1 decimal place.

All fields must be populated. If there are no data applicable to a field, enter zero in that field.

Do not include explanatory footnotes in the transmittal letter; such notes must be included in the Footnotes section of the filing.

NOTICE: The ARMIS Semi-Annual Service Quality Report collects data designed to capture trends in service quality under price cap regulation and improves and standardizes existing reporting requirements for this purpose. The ARMIS Semi-Annual Service Quality Report specifies information requirements in a consistent format and is essential to the FCC to monitor service quality under price cap regulation. Your response is mandatory.

This report is prescribed for every mandatory price cap local exchange carrier and is not subject to the clearance procedures of 44 USC 3507 pursuant to the less than ten rule. Send comments regarding any aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Office of Managing Director, Washington D.C. 20554, and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, D.C. 20503.

FCC Report 43-06

ARMIS SEMIANNUAL SERVICE QUALITY REPORT

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmn yyyy To mmmn yyyy
 COSA: xxxx

xxxxxxxxxxx VERSION
 SUBMISSION x
 TABLE II

TABLE II - DIAL TONE RESPONSE AND TRANSMISSION QUALITY

ROW	COLUMN
	TOTAL STUDY AREA
	(a)

PERCENT OF OFFICES PERFORMING AT OR ABOVE DIAL TONE SPEED OBJECTIVE LEVEL:

0200	Percent of Offices at or Above Objective	
0210	Number of Offices Measured	
0220	Objective Delay	
0230	Objective Percent of Calls for Each Office	

PERCENT OF OFFICES MEETING ALL TRANSMISSION OBJECTIVES:

0240	Percent of Offices Meeting Loss Objectives	
0241	Percent Offices Meeting C-Message Objectives	
0242	Percent of Offices Meeting Balance Objectives	
0243	Percent Offices Meeting Gain Slope Objectives	
0244	Percent of Offices Meeting C-Notch Objectives	

PERCENT OF TRUNKS MEETING ALL TRANSMISSION OBJECTIVES:

0250	Percent of Trunks Meeting Loss Objectives	
0251	Percent of Trunks Meeting Noise Objectives	
0252	Percent of Trunks Meeting Balance Objectives	
0253	Percent Trunks Meeting Gain Slope Objectives	
0254	Percent of Trunks Meeting C-Notch Objectives	

Semi-Annual Service Quality Report

General Instructions

Table I of this report is not standardized and is not, therefore, required to be filed in the ARMIS format. Table I will continue to be filed with the Industry Analysis Division using the same procedures that have been used in the past for filing the Semi-Annual Service Quality Report. Table II of this report is standardized and is required to be filed under ARMIS.

Row Instructions

Table II

Rows 0200 through 0230 measure the ability of the switching equipment to provide dial tone for an originating call attempt within a specified period of time. The results of the test measurement are reflected in these rows as the percentage of dial offices which give dial tone within three seconds of lifting the telephone instrument. The measured performance is derived from call attempt samples taken during the central office busy hours. An office is considered to pass the performance test if a specified number of test calls receive dial tone within the three second criterion.

Row 0200 - Percent Sample at Objective Level - Enter the number of offices passing the measurement standard divided by the number of offices measured.

0210 - Number of Offices Measured - Enter the number of offices tested for dial tone speed.

Row 0220 - Objective Delay - Enter the maximum number of seconds for receiving dial tone (usually three seconds).

Row 0230 - Objective Percent of Calls for Each Office - Enter the percentage of call attempts sampled which must receive dial tone within the time specified (see row 0220) for an office to pass the measurement standard.

Row 0240 - Percent of Offices Meeting Loss Objectives - Enter the percentage of offices passing tests for signal attenuation or loss.

Row 0241 - Percent of Offices Meeting C-Message Objectives - Enter the percentage of offices passing tests for noise over the audible spectrum weighted in a manner consistent with human hearing.

Row 0242 - Percent of Offices Meeting Balance Objectives - Enter the percentage of offices passing tests for balance which determines the amount of echo heard by the subscriber.

Row 0243 - Percent of Offices Meeting Gain Slope Objectives - Enter the percentage of offices passing tests for gain slope which is a measure of distortion.

Row 0244 - Percent of Offices Meeting C-Notch Objectives - Enter the percentage of offices passing tests for noise in specified portions of the signal bandwidth.

Row 0250 - Percent of Trunks Meeting Loss Objectives - Enter the percentage of trunks which must pass the loss test and the technical requirement for an office to pass (maintenance limit).

Row 0251 - Percent of Trunks Meeting Noise Objectives - Enter the percentage of trunks which must pass the noise test and the technical requirement for an office to pass (Maintenance limit).

Row 0252 - Percent of Trunks Meeting Balance Objectives - Enter the percentage of trunks which must pass the balance test and the technical requirement for an office to pass (maintenance limit).

Row 0253 - Percent of Trunks Meeting Gain Slope Objective - Enter the percentage of trunks which must pass the gain slope test and the technical requirement for an office to pass (maintenance limit).

Row 0254 - Percent of Trunks Meeting C-Notch Objectives - Enter the percentage of trunks which must pass the C-notch test and the technical requirement for an office to pass (maintenance limit).

-Semi-Annual Service Quality Report

Column Descriptions

Table II

Column (a) - Total Study Area - This column represents the total study area. A study area usually consists of a telephone company's service territory in a given state, although telephone companies occasionally have more than one study area in a particular state.

CERTIFICATION

I certify that I am an officer of _____;
that I have examined the foregoing report and that to the best of my
knowledge, information, and belief, all statements of fact contained in this
report are true and that said report is an accurate statement of the affairs
of the above named respondent in respect to the data set forth herein for
the period from _____ to _____.

PRINTED NAME _____

POSITION _____

SIGNATURE _____

DATE _____

(Persons making willful false statements in this report form can be punished
by fine or imprisonment under the Communications Act, 47 U.S.C. 220(e).)

CONTACT PERSON _____

TELEPHONE NUMBER _____

This document provides the instructions for FCC Report 43-07, the ARMIS Infrastructure Report, which was adopted by the Commission in CC Docket No. 87-313. The instructions consist of the following sections, which are attached.

1. Reporting Procedures - details on the specific procedures to be followed when submitting this report to the Commission.
2. Report Definition - an illustration of the rows and columns to be reported and their definitions.

A. Introduction

This document contains details on the specific procedures to be followed when submitting FCC Report 43-07, the ARMIS Infrastructure Report, to the Commission.

B. General Information

1. FCC Report 43-07 was adopted by the Commission in the LEC Price Cap Order, Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order, CC Docket No. 87-313, 5 FCC Rcd 6786, 6827-30 (1990). This report is prescribed for every mandatory price cap local exchange carrier. This report is not subject to the clearance procedures of 44 USC 3507 because there are less than ten respondents.
2. Affected carriers shall file by June 30 of each year for the previous calendar year. The initial report will be filed in June 1991 and will contain data for the 1990 calendar year.
3. The report shall be filed on a study area (jurisdiction) basis.
4. Each report and diskette must be clearly labeled to include the report number, company, study area, period, COSA code, version and submission number. The report number is 43-07, which identifies the filing as the ARMIS Infrastructure Report. The period identifies the year covered by the data. See the attached COSA Code Table (CO = Company, SA = Study Area) for a list of companies and their respective COSAs. The version refers to whether the filing is confidential, public or unrestricted. The submission number is defined as follows: Submission 0 is for test data purposes only. Submission 1 is the first submission of a quarter's data. Higher numbers (2, 3, etc.) would be used if needed for successive revisions to correct that quarter's submission.
5. All correspondence and pleadings shall identify the proceeding as CC Docket No. 87-313.

C. Where to file

1. Carriers submitting FCC Report 43-07 should consult the schedule below which details the number of copies required and the location to which those copies should be delivered.

2. Carriers are reminded that they must serve a copy of both the paper report and the automated report (diskette) on the FCC's contractor for public records duplication, Downtown Copy Center at 1114 21st. Street, N.W., Washington D.C. 20036 or delivered to Downtown Copy Center in Room 246 at FCC Headquarters, 1919 M Street, N.W., Washington, D.C. 20036.

NUMBER OF COPIES

	Trans- mittal Letter	Paper Report	Automated Report (diskette)
FCC Secretary Room 222 1919 M Street, N.W. Washington D.C. 20554	1	-	-
FCC Common Carrier Bureau Accounting & Audits Division Room 812 2000 L Street, N.W. Washington, D.C. 20554	1	1	1
FCC Common Carrier Bureau Industry Analysis Division Room 538 1919 M Street, N.W. Washington, D.C. 20554	1	1	1
Downtown Copy Center Room 246 1919 M Street Washington, D.C. 20036	1	1	1

D. Footnotes

1. If any data for the current period differs materially from that for the previous period or the corresponding period of the preceding year and the difference is not self-explanatory but was caused by unusual circumstances, then include footnote text to explain the specific circumstances.

2. If the reporting carrier does not follow the procedures described in the row and column instructions of the attached Report Definition, it must explain any deviations from those procedures in an explanatory footnote. Such footnotes must provide detailed explanations of the procedures actually used by the carrier and its specific reasons for deviating from the procedures prescribed by the Commission's Rules. This provision should not be interpreted to mean that deviations from the prescribed rules will automatically be approved by the Commission.
3. Do not include explanatory footnotes in the transmittal letter. The footnote text must be included in the Footnote Text Records and the Footnote Table as specified in the Automated Report Specifications.

E. Errata

1. Carriers are under a legal obligation to correct any erroneous data discovered in FCC Report 43-07. Submissions containing corrected data must include references to indicate which data items were corrected since the previous submission.
2. Those references must be included in the Erratum Records and the Erratum Table as specified in the Automated Report Specifications.

F. Certification

1. Carriers must certify the accuracy of the data submitted in FCC Report 43-07 by including a signed certification statement as the last page of the paper report.
2. The text of the certification statement is included on page 21 of 21 in the attached report definition.

G. Waivers

1. If a carrier determines that it will be unable to provide data required by FCC Report 43-07, it must file an application for waiver with the Commission following established Commission procedures. All such requests from a carrier should be included in a single application. The application must demonstrate good cause for reporting a different or lower level of detail and indicate how these deficiencies will be corrected.

2. Omission of individual data items or entries, without request for waiver, is unacceptable. On reason that compliance with the full requirements is so important is that omission of any single data entry by any carrier will jeopardize the accuracy of aggregate industry information.

H. Public Information

1. The paper reports filed as Report 43-07 may be examined by the public from 9:00 to 11:00 a.m. and from 2:00 to 4:00 p.m., Monday through Friday, in Room 812, 2000 L Street, N.W., Washington, D.C.
2. Copies of the paper or automated reports filed as Report 43-07 may be obtained from the FCC's contractor for public records duplication, Downtown Copy Center at (202) 452-1422.

For further information regarding these procedures, contact:

Barbara Van Hagen
FCC Common Carrier Bureau
Accounting & Audits Division
(202) 634-1861

SUMMARY

This document provides the Report Definition for FCC Report 43-07, the ARMIS Infrastructure Report which must be provided annually by study area. It contains the following:

	<u>PAGE</u>
Table I - Switching Equipment Table	2
Table II - Transmission Facilities Table	4
Table III - LEC Call Set-Up Time Table	6
Table IV - Additions and Book Costs Table	7
Table I - Row Instructions	8
Table II - Row Instructions	14
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Table I - Column Descriptions	19
Table II - Column Descriptions	19
Table III - Column Descriptions	19
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Certification	21

All percentage amounts must be entered in percent and rounded to 1 decimal place. All kilometers must be rounded to 2 decimal places. All monetary figures must be rounded to the nearest thousand dollars. All access lines must be rounded to the nearest thousand.

All fields must be populated. If there are no data applicable to a field, enter zero in that field.

Do not include explanatory footnotes in the transmittal letter; such notes must be included in the Footnotes section of the filing.

NOTICE: The ARMIS Infrastructure Report collects data designed to capture trends in telephone industry infrastructure development under price cap regulation and improves and standardizes existing reporting requirements for this purpose. The ARMIS Infrastructure Report specifies information requirements in a consistent format and is essential to the FCC to monitor service quality under price cap regulation. Your response is mandatory.

This report is prescribed for every mandatory price cap local exchange carrier and is not subject to the clearance procedures of 44 USC 3507 pursuant to the less than ten rule. Send comments regarding any aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Office of Managing Director, Washington D.C. 20554, and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, D.C. 20503.

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmm yyyy To mmmm yyyy
 COSA: xxxxx

xxxxxxxxxxxxx VERSION
 SUBMISSION X
 TABLE I

TABLE I - SWITCHING EQUIPMENT

ROW	COLUMN		
	TOTAL STUDY AREA	WITHIN MSA	NON-MSA
	(a)	(b)	(c)

SWITCHING ENTITIES/LINES IN SERVICE:

0110	Total Switching Entities			
0111	Local Switches			
0112	Tandems		N/A	N/A
0113	Hosts			
0114	Remotes (Stand Alone Only)			
0120	Total Number Access Lines in Service			

TYPE OF SWITCH:

0130	Total E/M Switches			
0131	Percent Total Switches			
0132	E/M Local Switches			
0133	Percent Local Switches			
0134	E/M Tandems		N/A	N/A
0135	Percent Total Tandems		N/A	N/A
0140	E/M Lines Served			
0141	Percent Total Lines			
0150	Total ASPC Switches			
0151	Percent Total Switches			
0152	ASPC Local Switches			
0153	Percent Local Switches			
0154	ASPC Tandems		N/A	N/A
0155	Percent Total Tandems		N/A	N/A
0160	ASPC Lines Served			
0161	Percent Total Lines			
0170	Total DSPC Switches			
0171	Percent Total Switches			
0172	DSPC Local Switches			
0173	Percent Local Switches			
0174	DSPC Tandems		N/A	N/A
0175	Percent Total Tandems		N/A	N/A
0180	DSPC Lines Served			
0181	Percent Total Lines			

SWITCHING CAPABILITY:

0190	Switches Equipped for Equal Access			
0191	Percent Total Switches			

FCC Report 43-07

ARMIS INFRASTRUCTURE REPORT

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmn yyyy To mmmn yyyy
 COSA: xxxx

xxxxxxxxxxx VERSION
 SUBMISSION X
 TABLE I

TABLE I - SWITCHING EQUIPMENT

ROW	COLUMN		
	TOTAL STUDY AREA	WITHIN MSA	NON-MSA
	(a)	(b)	(c)
0200	Access Lines with Equal Access		
0201	Percent Total Lines		
0210	Touch-Tone Capable Switches		
0211	Percent Total Switches		
0220	Access Lines with Touch-Tone Capability		
0221	Percent Total Lines		
0230	Total Switches Equipped with SS7-394		
0231	Percent Total Switches		
0232	Lines with Access to SS7-394		
0233	Percent Total Access Lines		
0234	Total Switches Equipped with SS7-317		
0235	Percent Total Switches		
0236	Lines with Access to SS7-317		
0237	Percent Total Access Lines		
0240	Local Switches Equipped with SS7-394		
0241	Percent Total Local Switches		
0246	Local Switches Equipped with SS7-317		
0247	Percent Total Local Switches		
0250	Tandems Equipped with SS7-394	N/A	N/A
0251	Percent Total Tandems	N/A	N/A
0256	Tandems Equipped with SS7-317	N/A	N/A
0257	Percent Total Tandems	N/A	N/A
0270	Total Switches Equipped with ISDN		
0271	Percent Total Switches		
0280	Local Switches Equipped with ISDN		
0281	Percent Total Local Switches		
0290	Tandems Equipped with ISDN	N/A	N/A
0291	Percent Total Tandems	N/A	N/A
0300	Lines with Potential Access to ISDN		
0301	Percent Total Lines		
0311	Basic Rate ISDN (BRI) Interfaces Equipped		
0312	Primary Rate ISDN (PRI) Interfaces Equipped		

FCC Report 43-07

ARMIS INFRASTRUCTURE REPORT

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmm yyyy To mmmm yyyy
 COSA: xxxx

xxxxxxxxxxxxx VERSION
 SUBMISSION X
 TABLE II

TABLE II - TRANSMISSION FACILITIES

ROW	COLUMN
	TOTAL STUDY AREA
	(d)

SHEATH KILOMETERS:

0320	Total Sheath Kilometers	
0321	Copper	
0322	Fiber	
0323	Other	

INTEROFFICE WORKING FACILITIES:

0330	Total Circuit Links	
0331	Baseband	
0332	Analog CXR	
0333	Digital CXR	
0350	Analog Carrier Links	
0351	Copper	
0352	Radio	
0360	Digital Carrier Links	
0361	Copper	
0362	Radio	
0363	Fiber	

LOOP PLANT - CENTRAL OFFICE TERMINATIONS:

0370	Total Working Channels	
0380	Copper	
0381	Baseband	
0382	Analog CXR	
0383	Digital CXR	
0390	Fiber Digital CXR	
0410	Other	

FCC Report 43-07

ARMIS INFRASTRUCTURE REPORT

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx
PERIOD: From mmmn yyyy To mmmn yyyy
COSA: xxxx

xxxxxxxxxxx VERSION
SUBMISSION X
TABLE II

TABLE II - TRANSMISSION FACILITIES

ROW	COLUMN
TOTAL STUDY AREA	
(d)	
0420	Total Equipped Channels
0430	Copper
0431	Baseband
0432	Analog CXR
0433	Digital CXR
0440	Fiber Digital CXR
0460	Other
OTHER TRANSMISSION FACILITY DATA:	
0470	Copper Prs Term Main Frame (Loop Plant Only)
0480	Fiber Strands Term in the CO (Loop Plnt Only)
0481	Fiber Term at Customer Premises DSO Rate
0482	Fiber Term at Customer Premises DS1 Rate
0483	Fiber Term at Customer Premises DS2 Rate
0484	Fiber Term at Cust Prem DS3 Rate and higher

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxx
 PERIOD: From mmmn yyyy To mmmn yyyy
 COSA: xxxx

xxxxxxxxxxx VERSION
 SUBMISSION X
 TABLE III

TABLE III - LEC CALL SET-UP TIME

Row	Classification	Column				
		Average Call Set-Up Time				
		Direct		Via Access Tandem		
End Offices	SS7-394	MF	SS7-394	MF	Mixed	
(e)	(f)	(g)	(h)	(i)	(j)	

TIME:

0510	Total					
0511	End Offices/EMs					
0512	End Offices/SPC Analogs					
0513	End Offices/Digitals					

PERCENT:

0520	Total Access Lines					
0521	Access Lines/EMs					
0522	Access Lines SPC/Analog					
0523	Access Lines/Digitals					

FCC Report 43-07

ARMIS INFRASTRUCTURE REPORT

COMPANY: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
STUDY AREA: xxxxxxxxxxxxxxxxxxxxxxxxxxxx
PERIOD: From mmmm yyyy To mmmm yyyy
COSA: xxxx

xxxxxxxxxxxxx VERSION
SUBMISSION X
TABLE IV

TABLE IV - ADDITIONS AND BOOK COSTS

ROW	COLUMN
	TOTAL STUDY AREA
	(1)
0530	Total Access Lines in Service
0531	Access Line Gain
0540	Total Gross Capital Expenditures

Infrastructure Report

General Instructions

For the purposes of this report, the terms switch, switching entity and entity are used interchangeably. The terms access lines, lines and lines in service are also used interchangeably.

Row Instructions

Table I

Switching Entities - Switching entities are assemblies of equipment designed to establish connections between lines and trunks. Switching entities include access tandems, local, class 5 switching machines and any associated remotes; e.g., a host end office and its three associated remotes will be reported as four switching entities. There may be more than one switching entity per central office or wire center. Switching entities designed exclusively for operator services are not reported here.

Lines in Service - Access lines include all classifications of local exchange telephone service including, but not limited to, individual lines, party line access, PBX access, Centrex access, Coin access, Foreign Exchange access and WATS access. Access lines, as defined herein, is a more inclusive term that billable access lines, as defined in the ARMIS 43-01 and 43-04 reports. See row instructions for rows 2090 through 2140 of the ARMIS 43-01 report and for row 9010 of the ARMIS 43-04 report for the definition of billable access lines.

Row 0110 - Total Switching Entities - Enter the total number of local and access tandem switching entities on this row. This amount is equal to the sum of rows 0130, 0150 and 0170. Tandem switching entities are used to connect local switching entities with local switching entities in other central offices. This report includes those tandems that are designed exclusively to establish connections between trunks. Since some switches are used for both local and access tandem switching, the sum of rows 0111 and 0112 may be greater than the amounts entered on this row. For example, if there are 6 local switches, 4 tandem switches and 5 switches that are used for both local and tandem switching, row 0111 would equal 11 local switches, row 0112 would equal 9 switches, and row 0110 would equal 15 switches. In this case, the sum of rows 0111 and 0112 (20) would be greater than the amount of total switching entities (15). Since we are asking only for the number of remotes with stand alone capability, the total of rows 0113 and 0114 will be less than the amounts entered on this row. For example, if there are 16 total switching entities, and there are 3 hosts and 7 remotes that have stand alone capability, the sum of rows 0113 and 0114 (10) would be less than the amount of total switching entities (16).

Row 0111 - Local Switches - Enter the total number of switches used as local switches on this row. This amount is equal to the sum of rows 132, 152 and 172.

Row 0112 - Access Tandems - Enter the total number of switches with access tandem capability on this row. This amount is equal to the sum of rows 134, 154 and 174.

Row 0113 - Hosts - A host is a switch serving one or more remotes.

Row 0114 - Remotes - A remote switching entity can generally be described as a switching entity that has no connection to the facilities network except through one other (host) switching entity, that shares the processing capabilities of another switching system for certain control functions under the direction of the host central processor, and that can be controlled remotely by the host over a pair of dedicated data links. All types of remote switches are included with the switching entity counts. However, row 0114 excludes separate reporting of remotes that are incapable of providing stand alone operation when the host switch fails. Only those remote switching entities that are equipped to operate in a stand alone fashion (i.e., able to operate when the host fails, or the data links to the host fail) to be able to provide more limited service, are to be reported on row 0114. Remote entities that are not within this description should not be included on this row.

Row 0120 - Total Number Access Lines in Service - Enter the total number of access lines in service on this row. This amount is equal to the sum of rows 0140, 0160 and 0180.

Type of Switch - Types of switches include Electro-Mechanical (E/M), e.g., Step-by-Step and Crossbar; Analog Stored Program Controlled (ASPC); and Digital Stored Program Controlled (DSPC).

Row 0130 - Total E/M Switches - Enter the total number of local and tandem Electro-Mechanical switches on this row. Since some switches are used for both local and tandem switching, the sum of rows 132 and 134 may be greater than the amounts entered on this row (see example, row 0110).

Row 0131 - Percent Total Switches - Enter the ratio of Electro-Mechanical switches to total switches, in percent (row 130 divided by row 110).

Row 0132 - E/M Local Switches - Enter the total number of Electro-Mechanical switches used as local switches on this row.

Row 0133 - Percent Local Switches - Enter the ratio of Electro-Mechanical local switches to total local switches, in percent (row 0132 divided by row 0111).

Row 0134 - E/M Tandems - Enter the total number of Electro-Mechanical switches with tandem capability on this row.

Row 0135 - Percent Total Tandems - Enter the ratio of Electro-Mechanical Tandems to total tandems, in percent (row 0134 divided by 0112).

Row 0140 - E/M Lines Served - Enter the number of lines served by Electro-Mechanical switches.

Row 0141 - Percent Total Lines - Enter the ratio of lines served by Electro-Mechanical switches to total lines in service, in percent (row 0140 divided by row 0120).

Row 0150 - Total ASPC Switches - Enter the total number of local and tandem Analog Stored Program Controlled switches. Since some switches are used for both local and tandem switching, the sum of rows 152 and 154 may be greater than the amounts entered on this row (see example, row 0110).

Row 0151 - Percent Total Switches - Enter the ratio of Analog Stored Program Controlled switches to total switches, in percent (row 0150 divided by row 0110).

Row 0152 - ASPC Local Switches - Enter the total number of Analog Stored Program Controlled switches used as local switches on this row.

Row 0153 - Percent Local Switches - Enter the ratio of Analog Stored Program Controlled local switches to total local switches, in percent (row 0152 divided by row 0111).

Row 0154 - ASPC Tandems - Enter the total number of Analog Stored Program Controlled switches with tandem capability on this row.

Row 0155 - Percent Total Tandems - Enter the ratio of Analog Stored Program Controlled tandems to total tandems, in percent (row 0154 divided by row 0112).

Row 0160 - ASPC Lines Served - Enter the number of lines served by Analog Stored Program Controlled switches.

Row 0161 - Percent Total Lines - Enter the ratio of lines served by Analog Stored Program Controlled switches to total lines in service, in percent (row 0160 divided by row 0120).

Row 0170 - Total DSPC Switches - Enter the total number of local and tandem Digital Stored Program Controlled switches. Since some switches are used for both local and tandem switching, the sum of rows 172 and 174 may be greater than the amounts entered on this row (see example, row 0110).

Row 0171 - Percent Total Switches - Enter the ratio of Digital Stored Program Controlled switches to total switches, in percent (row 0170 divided by row 0110).

Row 0172 - DSPC Local Switches - Enter the total number of Digital Stored Program Controlled switches used as local switches on this row.

Row 0173 - Percent Local Switches - Enter the ratio of Digital Stored Program Controlled local switches to total local switches, in percent (row 0172 divided by 0111).

Row 0174 - DSPC Tandems - Enter the total number of Digital Stored Program Controlled switches with tandem capability on this row.

Row 0175 - Percent Total Tandems - Enter the ratio of Digital Stored Program Controlled tandems to total tandems, in percent (row 0174 divided by row 0112).

Row 0180 - DSPC Lines Served - Enter the number of lines served by Digital Stored Program Controlled switches.

Row 0181 - Percent Total Lines - Enter the ratio of lines served by Digital Stored Program Controlled switches to total lines in service, in percent (row 0180 divided by row 0120).

SWITCHING CAPABILITY:

Row 0190 - Switches Equipped for Equal Access - Enter the number of switching entities equipped for equal access, Feature Group D service.

Row 0191 - Percent Total Switches - Enter the ratio of switches equipped for equal access to total switches, in percent (row 0190 divided by row 0110).

Row 0200 - Access Lines with Equal Access - Enter the number of access lines served by switches equipped for equal access.

Row 0201 - Percent Total Lines - Enter the ratio of lines served by switches equipped for equal access to total lines in service, in percent (row 0200 divided by row 0120).

Row 0210 - Touch-Tone Capable Switches - Enter the number of switches entities equipped for Touch-Tone.

Row 0211 - Percent Total Switches - Enter the ratio of switches equipped for Touch-Tone to total switches, in percent (row 0210 divided by row 0110).

Row 0220 - Access Lines with Touch-Tone Capability - Enter the number of access lines served by switches equipped for Touch-Tone.

Row 0221 - Percent Total Lines - Enter the ratio of access lines served by switches equipped for Touch-Tone to total access lines, in percent (row 0220 divided by row 0120).

Row 0230 - Total Switches Equipped with SS7-394 - Enter the total number of local and tandem switches equipped with SS7-394.

Row 0231 - Percent Total Switches - Enter the ratio of switches equipped with SS7-394 to total switches, in percent (row 0230 divided by row 0110).

Row 0232 - Lines with Access to SS7-394 - Enter the number of lines in service that are served by switches equipped with SS7-394.

Row 0233 - Percent Total Access Lines - Enter the ratio of lines with access to SS7-394 to total access lines, in percent (row 0232 divided by row 0120).

Row 0234 - Total Switches Equipped with SS7-317 - Enter the total number of switches equipped with SS7-317 on this row.

Row 0235 - Percent Total Switches - Enter the ratio of switches equipped with SS7-317 to total switches, in percent (row 0234 divided by row 0110).

Row 0236 - Lines with Access To SS7-317 - Enter the number of lines in service with access to SS7-317.

Row 0237 - Percent Total Access Lines - Enter the ratio of access lines with access to SS7-317 to total access lines, in percent (row 0236 divided by row 0120).

Row 0240 - Local Switches Equipped with SS7-394 - Enter the number of switches used as local switches that are equipped with SS7-394.

Row 0241 - Percent Total Local Switches - Enter the ratio of local switches equipped with SS7-394 to total local switches, in percent (row 0240 divided by row 0111).

Row 0244 - Local Switches with SS7-317 - Enter the total number of local switches equipped with SS7-317.

Row 0245 - Percent Total Local Switches - Enter the ratio of local switches equipped with SS7-317 to total local switches, in percent (row 0244 divided by row 0111).

Row 0250 - Tandems Equipped with SS7-394 - Enter the total number of switches with tandem capability that are equipped with SS7-394.

Row 0251 - Percent Total Tandems - Enter the ratio of tandem switches equipped with SS7-394 to total tandems, in percent (row 0250 divided by row 0112).

Row 0254 - Tandems Equipped with SS7-317 - Enter the total number of switches with tandem capability that are equipped with SS7-317.

Row 0255 - Percent Total Tandems - Enter the ratio of tandem switches equipped with SS7-317 to total tandems, in percent (row 0254 divided by row 0112).

Row 0270 - Total Switches Equipped with ISDN - Enter the total number of local and tandem switches that are equipped with ISDN. Since some switches are used for both local and tandem switching, the sum of rows 0280 and 0290 may be greater than the amounts entered on this row (see example, row 0110).

Row 0271 - Percent Total Switches - Enter the ratio of switches equipped with ISDN to total switches, in percent (row 0270 divided by row 0110).

Row 0280 - Local Switches Equipped with ISDN - Enter the number of switches used as local switches that are equipped with ISDN.

Row 0281 - Percent Total Local Switches - Enter the ratio of local switches equipped with ISDN to total local switches, in percent (row 0280 divided by row 0111).

Row 0290 - Tandems Equipped with ISDN - Enter the number of switches with tandem capability on this row.

Row 0291 - Percent Total Tandems - Enter the ratio of tandems equipped with ISDN to total tandems, in percent (row 0290 divided by row 0112).

Row 0300 - Lines with Potential Access to ISDN - Enter the number of lines served by switches equipped with ISDN.

Row 0301 - Percent Total Lines - Enter the ratio of lines in service with access to ISDN to total lines in service, in percent (row 0280 divided by row 0120).

Row 0311 - Basic Rate ISDN (BRI) Interfaces Equipped - Basic rate ISDN consists of two Bearer Channels at 64 Kilobits/second and one Delta Channel at 16 Kilobits/second. Quantities reflected are the number of (2B+D) BRI interfaces equipped. This amount represents actual interfaces equipped with ISDN.

Row 0312 - Primary Rate ISDN (PRI) Interfaces Equipped - Equivalent primary rate ISDN interfaces are generally configured as 23 Bearer Channels and one Delta Channel, all at 64 Kilobits/second. Quantities reflected are the number of equivalent PRI (23B+D) ISDN interfaces equipped, excluding interoffice PRI ISDN interfaces. This amount represents actual interfaces equipped with ISDN.

Table II

Row 0320 - Total Sheath Kilometers - Sheath kilometers include loop, interoffice and toll sheath kilometers.

Row 0321 - Copper - Enter the number of sheath kilometers of twisted pair copper cable on this row.

Row 0322 - Fiber - Enter the number of sheath kilometers of fiber on this row.

Row 0323 - Other - Enter the number of sheath kilometers of aluminum, coaxial, and all other sheath kilometers not included in rows 0321 or 0322, on this row.

Row 0330 - Total Circuit Links - A circuit link is that link that exists between points A and B where voice frequency/DSO cross-connects and/or analog/digital conversion (collectively referenced here as conversion) occurs. Circuit links are counted as follows: If there is a circuit between A and B with no intermediate conversions, count one circuit link for each voice frequency equivalent channel. If there is a circuit between A and B with one intermediate conversion, count two circuit links for each voice frequency equivalent channel. Similarly, two intermediate conversions between A and B would result in three circuit links per voice equivalent channel.

Row 0331 - Baseband - Enter the number of baseband circuit links on this row.

Row 0332 - Analog CXR - Enter the number of analog CXR circuit links, converted to voice frequency equivalents, on this row.

Row 0333 - Digital CXR - Enter the number of digital CXR circuit links, converted to voice grade equivalents, on this row.

Carrier Links - A Carrier Technology Segment (carrier link) is defined as a segment of the interoffice network disaggregated by technology (i.e., copper, fiber or radio). Each segment between central offices or other interoffice network nodes is defined as a unique carrier technology segment. For these purposes, a central office is an inter-office network node. Other interoffice network nodes are defined as any points in the interoffice network where a cross-connect occurs, or where a change in technology or medium occurs. Counts are on an analog group or DS1 equivalent basis.

Row 0350 - Analog Carrier Links - Enter the number of analog carrier links on this row.

Row 0351 - Copper - Enter the number of copper analog carrier links on this row.

Row 0352 - Radio - Enter the number of radio analog carrier links on this row.

Row 0360 - Digital Carrier Links - Enter the number of digital carrier links on this row.

Row 0361 - Copper - Enter the number of copper digital carrier links on this row.

Row 0362 - Radio - Enter the number of radio digital carrier links on this row.

Row 0363 - Fiber - Enter the number of fiber digital carrier links on this row.

LOOP PLANT - CENTRAL OFFICE TERMINATIONS - These facilities are from the central office to the end users. Local loop includes analog type services only. It excludes ISDN.

Row 0370 - Total Working Channels - Working channels are on a 4 kHz bandwidth (single voice channel) basis. Working channels originating from a remote switch are treated the same as if the channels originated in the host central office. All reports of working channels are counted on this 4 kHz basis for purposes of this report. This amount equals the sum of rows 0360, 0370 and 0380.

Row 0380 - Total Copper - Enter the number of copper working channels on this row. This amount equals the sum of rows 0381, 0382 and 0383.

Row 0381 - Baseband - Enter the number of baseband copper working channels on this row.

Row 0382 - Analog - Enter the number of analog copper working channels, converted to voice frequency equivalents, on this row.

Row 0383 - Digital - Enter the number of digital copper working channels, converted to voice frequency equivalents, on this row.

Row 0390 - Fiber Digital CXR - Enter the number of fiber digital CXR working channels, converted to voice frequency equivalents, on this row.

Row 0410 - Other - Enter the number of other working channels on this row. Explain the data entered here in a footnote.

Row 0420 - Total Equipped Channels - Equipped channels are on a 4 kHz bandwidth (single voice channel) basis. Equipped channels originating from a remote switch are treated the same as if the channels originated in the host central office. This amount equals the sum of rows 0430, 0440 and 0460.

Row 430 - Copper - Enter the number of copper equipped channels on this row. This amount equals the sum of rows 0431, 0432 and 0433.

Row 0431 - Baseband - Enter the number of baseband copper equipped channels on this row.

Row 0432 - Analog CXR - Enter the number of analog CXR copper equipped channels on this row.

Row 0433 - Digital CXR - Enter the number of digital CXR copper equipped channels on this row.

Row 0440 - Fiber Digital CXR - Enter the number of fiber digital CXR equipped channels on this row.

Row 0460 - Other - Enter the number of other equipped channels on this row. Explain the data entered here in a footnote.

Row 0470 - Copper Pairs Terminated at the Main Frame (Loop Plant Only) - Enter the number of copper pairs terminated at the main frame.

Row 0480 - Fiber Strands Terminated in the Central Office (Loop Plant Only) - Enter the number of individual fiber strands terminated in central offices on this row.

Row 0481 - Fiber Terminated at Customer's Premises at the DSO Rate - Enter the number of individual customer services provided over fiber strands terminated at the customer's premises, other than trials, at the DSO rate on this row.

Row 0482 - Fiber Terminated at Customer's Premises at the DS1 Rate - Enter the number of individual customer services provided over fiber strands terminated at the customer's premises, other than trials, at the DS1 rate on this row.

Row 0483 - Fiber Terminated at Customer's Premises at the DS2 Rate - Enter the number of individual customer services provided over fiber strands terminated at the customer's premises, other than trials, at the DS2 rate on this row.

Row 0484 - Fiber Terminated at Customer's Premises at the DS3 Rate or Higher - Enter the number of individual customer services provided over fiber strands terminated at the customer's premises, other than trials, at the DS3 rate or higher on this row. Footnote the number of individual services provided over fiber strands terminated at the customer's premises at a higher than DS3 rate, if any.

Table III

Row 0510 - Total - Enter the data for the total number of end offices in the appropriate columns on this row.

Row 0511 - End Offices Electro-Mechanical Switches - Enter the data for the total number of end offices equipped with electro-mechanical switches in the appropriate columns on this row.

Row 0512 - End Office SPC Analog Switches - Enter the data for the total number of end offices equipped with SPC analog switches in the appropriate columns on this row.

Row 0513 - End Office Digital Switches - Enter the data for the total number of end offices equipped with Digital Switches in the appropriate columns on this row.

Row 0520 - Total Access Lines - Enter the percent of the network represented by the total number of access lines in the appropriate columns on this row.

Row 0521 - Access Lines Electro-Mechanical Switches - Enter the percent of the network represented by the total number of access lines equipped with electro-mechanical switches in the appropriate columns on this row.

Row 0522 - Access Lines SPC Analog Switches - Enter the percent of the network represented by the total number of access lines equipped with SPC analog switches in the appropriate columns on this row.

Row 0523 - Access lines Digital Switches - Enter the percent of the network represented by the total number of access lines equipped with Digital Switches in the appropriate columns on this row.

Table IV

Row 0530 - Total Access Lines in Service - Enter the number of all access lines in service on this row.

Row 0531 - Access Line Gain - This amount is calculated by subtracting outward movement from inward movement.

Row 0540 - Total Gross Capital Expenditures - Enter the dollar amount of gross additions to accounts 2110, 2210, 2220, 2230, 2310, 2410, 2680 and 2690 during the current reporting period. See also ARMIS Report 43-02, Row 260, Column (ac). Gross capital expenditures are consistent with Form M and ARMIS.

Infrastructure Report

Column Descriptions

Table I

Column (a) - Total Study Area - This column represents the total study area. A study area usually consists of a telephone company's service territory in a given state, although telephone companies occasionally have more than one study area in a particular state. Enter the facilities in the total study area in this column. This amount should equal column (b) plus column (c).

Column (b) - within MSA - This column represents all MSAs served within the study area. MSAs, or Metropolitan Statistical Areas, are designated by the Department of Commerce in a list following each decadal census. An MSA includes at least one city with a minimum population of 50,000 and its surrounding area, or a Census Bureau defined urbanized area of at least 50,000 population located in an area with a minimum population of 100,000. See, 45 Fed. Reg. 956 (1980). This definition and the current list remain in effect until the new list of metropolitan statistical areas and changes in definition, if any, are issued in June 1992. Enter the facilities within any MSA in the Study Area in this column.

Column (c) - non-MSA - This column represents all areas which lie outside of any MSA. Enter the facilities in the Study Area which are located outside of any MSA.

Table II

Column (d) - Total Study Area - See description for Table I, column (a).

Table III

Call Set-Up Time - For the purposes of infrastructure reporting, call set-up time is defined as "the interval that begins when the caller completes dialing...and ends when the LEC has delivered the call to the (interexchange carrier's) point of presence".

Column (e) - End Offices - Enter the total number of end offices appropriate for each row, in this column. The access line counts in this column should be consistent with the access line data provided in Table I of the Infrastructure Report. Footnote the number of end offices used in the Bellcore studies that developed the underlying data.

Average Call Set-Up Time - Average call set-up time is the average amount of call set-up time for all end office types.

Direct - Direct access from the end office to the interexchange carrier POP.

Column (f) - SS7-394 - Enter the average call set-up time, or the percent of network represented, as appropriate, for direct access from end offices using SS7-394.

Column (g) - MF - Enter average call set-up time, or the percent of the network represented, as appropriate, for direct access from end offices using multifrequency signaling.

Via Access Tandem - End Offices routing calls through a switch having tandem capability.

Column (h) - SS7-394 - Enter the average call set-up time, or the percent of the network represented, as appropriate, for end offices routing calls through tandem switches using SS7-394.

Column (i) - MF - Enter the average call set-up time, or percent of the network represented, as appropriate, for end offices routing calls through tandem switches using multifrequency signaling.

Column (j) - Mixed - Enter the average call set-up time, or percent of the network represented, as appropriate, for end offices using multifrequency signaling, routing calls through an access tandem switch using SS7-394 signaling.

Table IV

Column (k) - Total Study Area - See description for Table I, column (a).

CERTIFICATION

I certify that I am an officer of _____;
that I have examined the foregoing report and that to the best of my
knowledge, information, and belief, all statements of fact contained in this
report are true and that said report is an accurate statement of the affairs
of the above named respondent in respect to the data set forth herein for
the period from _____ to _____.

PRINTED NAME

POSITION

SIGNATURE

DATE

(Persons making willful false statements in this report form can be punished
by fine or imprisonment under the Communications Act, 47 U.S.C. 220(e).)

CONTACT PERSON

TELEPHONE NUMBER