Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	CC Docket No. 95-116
	)	
	)	NSD No. 98-27
Telephone Number Portability	)	

COMMENTS OF MCI TELECOMMUNICATIONS CORPORATION
IN OPPOSITION TO PETITION FOR EXTENSION OF TIME OF BELLSOUTH

MCI Telecommunications Corporation (MCI), by counsel, hereby opposes the Petition For Extension of Time of BellSouth (BellSouth Petition), filed on March 2, 1998.[1] BellSouth's Petition seeks a delay of local number portability (LNP) implementation for each of the Phases of LNP deployment ordered by the Federal Communications Commission (Commission).[2]

BellSouth claims that its request to significantly delay LNP deployment is caused by the failure of Perot, the entity selected by the Southeastern LLC to supply Number Portability Administration Center (NPAC) to the LLC by December 15, 1997[3]. BellSouth thus seeks a delay of LNP deployment, based on the projected May 11 availability of the new NPAC from Lockheed Martin, in each of the five Phases of LNP deployment as ordered by the Commission. According to BellSouth, it needs the requested extension in order to implement "software modifications," which it cannot

[1] *Public Notice*, Common Carrier Bureau Seeks Comment on Petitions For Extension Of Time Of The Local Number Portability Phase I Implementation Deadline, CC Docket No. 95-116, NSD File No. L-98-27 (rel. Mar. 5, 1998).

[2] *See In the Matter of Local Number Portability*, First Memorandum Opinion And Order On Reconsideration (rel. Mar. 11, 1997) (First Memorandum Opinion).

[3] *See* BELLSOUTH Petition, p. 5

complete before December 31, 1998. BellSouth's Petition to delay implementation of LNP in its region for such an extended period of time should be denied.[4]

I. THE IMPORTANCE OF LNP TO LOCAL COMPETITION CANNOT BE OVERSTATED.

The Commission's First Report and Order and Further Notice of Proposed Rulemaking recognizes that the ability of consumers to retain their telephone numbers when changing local service providers promotes competition, provides flexibility in the quality, price and variety of telecommunications services and benefits all users of telecommunications services.[5] The Commission has specifically stated that interim LNP methods are far inferior to the long-term Location Routing Number (LRN) LNP mechanism in that they are inefficient, often unreliable, wasteful of numbering resources and require new entrants to depend entirely on the networks of incumbent local exchange carriers (ILECs), such as BellSouth, to provide service to customers.[6]

It is precisely because LNP is essential to effective facilities-based competition in the provision of local exchange services[7] that the Commission set an aggressive implementation schedule for LNP deployment. In fact, the Commission has declined to delay LNP in the past where delay was requested based on speculative and unspecified

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[4] MCI realizes that the Commission's LNP rules do not contain specific penalties for a carrier's failure to meet the Commission's LNP deployment schedule. If they did, BellSouth would be a prime candidate for imposition of such penalties. Its failure to conduct its own testing in a timely fashion has contributed as much as Perot's delay, if not more, to the extension it now seeks.

[5] *In the Matter of Telephone Number Portability,* First Report And Order And Further Notice of Proposed Rulemaking, CC Docket No. 95-116, ¶ 30 (rel. July 6, 1996) (First Report and Order).

[6] *Id.* ¶ 115.

[7] *In the Matter of Telephone Number Portability,* First Memorandum Opinion And Order On Reconsideration, CC Docket No. 95-116, ¶ 90 (rel. Mar. 11, 1997) (First Memorandum Opinion).

concerns about possible future technical concerns.[8] The Commission has also declined to grant requests of LECs to obtain a waiver if they cannot meet the schedule for reasons beyond their control.[9]

In so doing, the Commission reasoned that the established waiver procedures for extending LNP deployment deadlines, coupled with the fact that the Commission extended the original deployment schedule for Phases I and II,[10] allowed sufficient time for LECs to take proper and timely steps to deploy LNP on schedule, and to notify the Commission at least 60 days in advance of the deployment deadline if it appeared that any particular deadline could not be met. Specifically, the Commission stated:

> The waiver procedure established in the *First Report & Order* for extending deployment deadlines as necessary provides an effective vehicle for addressing any problems in implementing number number portability that LECs can document. We note that carriers may file petitions for waiver of the deployment schedule more than 60 days in advance of an implementation deadline, and thus receive relief earlier, if they are able to present substantial, credible evidence at that time establishing their inability to comply with our deadlines.[11]

The timely deployment of LNP around the country cannot be overstated, and the Commission has made clear that the standard a carrier must meet in order to obtain a delay is extremely high indeed. Specifically, the Commission has held:

> that carriers are expected to meet the prescribed deadlines, and a carrier seeking relief must present extraordinary circumstances beyond its control in order to obtain an extension of time. A carrier seeking such relief must demonstrate through substantial, credible evidence the basis for its contention that it is unable to comply with

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[8] *Id.*

[9] *Id.*, ¶ 92.

[10] *Id.* ¶¶ 78, 80.

[11] *Id,* ¶ 92. (Footnote omitted.)

> our deployment schedule. Such requests must set forth: (1) the facts that demonstrate why the carrier is unable to meet our deployment schedule; (2) a detailed explanation of the activities that the carrier has undertaken to meet the implementation schedule prior to requesting an extension of time; (3) an identification of the particular switches for which the extension is requested; (4) the time within which the carrier will complete deployment in the affected switches; and (5) a proposed schedule with milestones for meeting the deployment date.[12]

In light of these factors, it is incumbent upon the Commission to examine closely BellSouth's claims of inability to deploy LNP in a timely and expedient fashion. MCI will show that, when the Commission undertakes this responsibility, it will quickly discover that BellSouth does not require anywhere near the amount of time it requests to deploy LNP in its region.

At a minimum, the Commission should grant BellSouth a limited extension of time, and severely restrict its ability to insert further delay into the process by deploying LNP in the dilatory fashion it has requested in this proceeding.

II. BELLSOUTH'S ASSERTION THAT THE NPAC CHANGE OCCURRED AT THE "11TH HOUR" IS UNTRUE.

On December 18, 1997, after several weeks of rumors that Perot would be unable to live up to its contractual expectations, the Southeast LLC voted to begin preliminary discussions with Lockheed Martin for Number Portability Administration Center (NPAC) services. The goal of these discussions was to understand what changes (including software development) would be required for a smooth transition from Perot to Lockheed Martin, should such a transition have become necessary. BellSouth, along with MCI and several other carriers, was part of these initial meetings, and in fact, BellSouth's development team worked very closely with Lockheed's development team to determine

[12]First Report and Order, ¶ 85.

what specific changes would be necessary if Lockheed Martin were to replace Perot. In order to aid in this process, BellSouth actually scheduled a trip to Lockheed's Chicago offices on January 13, 1998, in order to discuss the potential change.

Under the circumstances, BellSouth was anything but surprised by the eventual replacement of Perot by Lockheed Martin. As a result, from December 18, 1997 until February 10, 1998 when the replacement was publicly announced, BellSouth had every opportunity to use the time wisely to thoroughly analyze its systems to ensure they were suitable for LNP deployment. Since this analysis actually started in December 1997, and not in February 1998, BellSouth actually had approximately three months to accommodate the switch to Lockheed Martin. Yet, even though two other ILECs (specifically Pacific Bell and US West) face the same change in NPAC vendors, BellSouth is the only ILEC seeking an extension for a full three-month period of time. In light of the timing, however, at the very least, the Commission should disallow the three-month period of time after December 31, 1998 that BellSouth seeks as part of its petition for waiver.

BellSouth claims that its request is supported by "substantial credible evidence," and points to the fact that other ILECs have requested waivers based on the NPAC change as well.[13] BellSouth's request is markedly different, however, in light of the fact that, although each ILEC must accommodate the same change, the other ILECs plan to deploy LNP much faster than BellSouth.[14] At this juncture, it is not so much Lockheed Martin and Perot that injected an "11th hour" change. The change in NPACs is old news

[13] BellSouth Petition, p. 9.

[14] Neither Pacific Bell nor U S WEST seeks an extension of time beyond the December 31, 1998, deadline set by the Commission for deployment of LNP across the nation in the top 100 MSAs.

in mid-March 1998. Rather, it is BellSouth that is injecting an "11th hour" change in that it now seeks consideration above and beyond what is reasonably contemplated by the NPAC change. The sole reasonable conclusion that must be drawn from this set of circumstances is that BellSouth is motivated by selfishness, greed and a desire to thwart the introduction of effective local competition in its region for as long as it possibly can. The Commission should not reward BellSouth with an extension of time beyond December 1998 to deploy LNP.

III. DEVELOPMENT WORK DUE TO NPAC CHANGE

BellSouth claims to require 16 weeks to conduct "software modifications" to accommodate the interface requirements of the new NPAC.[15] But again, the other two ILECs, neither of which had any previous relationship with Lockheed Martin, have not requested additional time to perform similar modifications. Since the interfaces that each carrier must implement are precisely the same in order to be able to interact with the new NPAC, there is no good reason for the Commission to grant one ILEC an extension of time to perform modifications to its internal network that are not requested by other ILECs, and that are not necessary to deploy LNP in a more timely fashion. BellSouth is the only ILEC affected by the NPAC change that was unable to respond to the change in a manner that allowed completion of LNP deployment by December 31, 1998. The vendors developing the interfaces for U S WEST and Pacific Bell both anticipated the change and prepared accordingly. BellSouth should not be rewarded, but penalized, for its lack of attention to this very significant matter.

[15] BellSouth Petition, p. i.

BellSouth also claims that it needs more time for development because the new NPAC SMS is 7 software specification releases beyond the NPAC SMS database that was to have been delivered by the original NPAC vendor in the Southeast region.[16] Again, BellSouth positions itself as having been caught completely off guard by these changes. This is untrue. BellSouth has been an active participant in the NANC meetings for over a year, and thus, was, or should have been, acutely aware of the software specification releases as the NANC proposed them for the NPAC. Moreover, as a member of the Southeast LLC, BellSouth was a part of every single decision having anything at all to do with the NANC software releases. BellSouth, along with the rest of the industry, knew for months before December 1997 that Lockheed Martin was way ahead of Perot in terms of implementing NANC software changes. It should therefore come as no surprise at all to BellSouth. Simply stated, BellSouth should have been better prepared for these changes.

It is significant to note that MCI had to perform several software modifications to accommodate NANC Releases 1.1 through 1.8. To do so, MCI implemented the upgrades in a series of gradual steps taken over a period of several months. In fact, BellSouth has an advantage in terms of time over MCI in that it need make these modifications once. MCI, as a national carrier, was connected to both the Lockheed and Perot NPACs. In MCI's software development for NANC Releases 1.1 through 1.8, we had to keep current with the enhancements as Lockheed's NPAC deployed them. As a result, MCI developed each release specification separately, sometimes changing previous revisions. This rework actually takes more time than coding to the final

[16] Perot Systems' NPAC Service Management System (SMS) was at NANC Release 1.1 at the time of the cancellation of their contract. Lockheed is currently at NANC Release 1.8.

specifications. This took a number of months largely due to the analysis and regression testing done to ensure each change still allowed the interface to communicate with the NPAC. In other words, BellSouth should be able to make these changes in less time and with less effort than MCI did because they have the advantage of doing it only once. They will, as a result, save incremental testing and analysis time. In short, a software change is a software change.

MCI analyzed what software modifications to the Local Service Management System (LSMS) and Service Order Administration (SOA) systems[17] were required to make the necessary software modifications. In our analysis[18], there were twenty changes categorized as small, medium or large. "Small" changes (a few minutes to a couple of days) are minor involving updating the code where no functionality or new logic is involved. "Medium" modifications (a few days to a few months) include changes to functionality or logic. "Large" changes (months to a year) are defined as major ones that either affect system functionality, or are necessary to run the business. MCI determined that half of the changes are "small," requiring minor code changes. Only three of the changes are categorized as "medium" changes. The only changes MCI contends could possibly be large were ones that varied depending on how the service provider implemented their interface. Five modifications have no impact on the LSMS and SOA systems at all. While MCI acknowledges that some of the changes depend on the service

[17] The LSMS is the service provider database that contains ported number information downloaded from the NPAC. The SOA interfaces with the Lockheed Martin NPAC for ported number provisioning information.

[18] Attached in Appendix A is MCI Local Initiatives' analysis of NANC Releases 1.1 and 1.8.

provider's specific implementation, it is important to note that BellSouth has not disclosed enough information in its petition for an outsider to quantify the exact impact these changes would have on its interface. Therefore there is plenty of time for BellSouth to complete their interface development and LNP deployment in its region by the end of the year.

BellSouth asserts they need a 30-day period of inter-company testing to assure NPAC SMS and carrier SMS interoperability[19]. This is defined as "service provider to service provider" network testing. However, BellSouth goes on to say that a 30 day period is required "to assure NPAC SMS and carrier SMS interoperability, as well as conformance with NANC recommended FCC approved criteria."[20] Given the other service providers in the Southeast will be ready to perform NPAC testing much earlier BellSouth's proposal to redo NPAC performance testing should be denied. BellSouth's inability (or unwillingness) to adhere to the schedule should not delay other service providers who have invested the time and resources to comply.

IV. TIMELINE ANALYSIS

MCI agrees with BellSouth that NPAC certification must precede inter-company network testing and commercial porting. However, BellSouth's proposed schedule is preposterous.

[19] BellSouth Petition, p. 21

[20] BellSouth Petition, p. 21

BellSouth's Proposed Timeline for NPAC Certification is as follows:

Time BellSouth Proposes for Each Task (Weeks)	Task	Proposed Start Date	Time MCI Took to Complete the Same Task
2	Build interoperability test system	2/16	In Place
10	Start interoperability testing with DSET via dial up	3/1	8
9	Complete systems requirements for LSMS and AIN SMS	3/9	0
11	Start turn up testing	5/18	8
	Preliminary certification	8/3	0
1	Production system test preparation	8/10	0
9 days	Production system regression testing & final certification	8/17	½ day
5 days	Database clean up in preparation for industry testing	8/26	½ day
	Final certification	9/1	

BellSouth's timeline raises several significant questions. First, since MCI used one system to perform interoperability testing with both Lockheed (DSET) and Perot (Nortel) interoperability testing, there is no reason why BellSouth needs to develop a new system. It completed interoperability testing with Perot prior to changing to Lockheed, so its "test system" has been in place for several months. Therefore, this two-week period of time is unnecessary.

Second, MCI was the first service provider to complete interoperability testing with DSET in the Midwest region. We completed the second step in BellSouth's proposed plan in less than 8 weeks. Lockheed now has much more testing experience than it had when MCI completed the Midwest region tests. BellSouth should thus be able to perform this step in far less time than scheduled here.

It is unclear what BellSouth means by the third item. This specification is not LNP specific. Further, the FCC did not require changes to Operations Services Systems (OSS);

BellSouth apparently chose to add enhancements. Even so, they knew about these potential changes so their proposed time for develop requirements is excessive.

Regarding the fourth item, turn up in the Midwest region was scheduled for 5 weeks, but ran over to accommodate getting the Lockheed software working properly. The NPAC software has since been certified, so a more realistic estimate for turn up testing is 4 to 5 weeks, and not 11 week as suggested by BellSouth. Service provider to service provider testing (SP to SP) should add only two (2) additional weeks.

Steps 5 and 6 are unnecessary because they are not included in Lockheed's certification plan. As for the seventh step, MCI has taken ½ day to complete the Lockheed regression test cases in contrast to the 9 proposed by BellSouth. Finally, during the test period with Lockheed and prior to the Field trial, MCI allowed one-half of a day for database cleanup activity. BellSouth's estimate of 5 days for this final step is excessive.

Clearly, BellSouth has unnecessarily padded its estimates for these activities. The experience Lockheed gained in working with other SPs in turn up testing will help accelerate this process for BellSouth. The Commission should not allow BellSouth to unnecessarily drag its feet at this late stage in the deployment of LNP. The previous illustration reduces BellSouth's schedule by several weeks. BellSouth should be held accountable to the schedule set forth by the Commission and complete deployment of LNP by December 1998.

MCI agrees that carriers must be certified before Network testing can take place, but the time BellSouth has proposed is far less to complete this work. It is now up to BellSouth to move forward in becoming certified with the NPAC.

V. NPAC COMMERCIAL AVAILABILITY DATE

MCI has examined Lockheed's schedule for getting the new regions up running with the NPAC and we have determined several tasks can be shortened. For example, if it takes only 3 days instead of the 5 days scheduled for SOA/SMS Test Readiness (establish Associations, Create Network Data and Test FTP (file transfer protocol) process, then the next step of the testing – turn up testing - should proceed immediately, instead of waiting for 2 more days. We have attached a copy of the NPAC User Interconnection and Turn-Up plan provided by Lockheed[21]. Below we will demonstrate with specific examples how this schedule may be improved and therefore allow an earlier start to testing, such as Turn-Up Testing (activity IDs 38 through 55). These activities are repetitive of tasks the Service Providers have already performed with Perot Systems. With the expected level of knowledge that was developed during Perot testing, the following intervals should not be as long as the schedule shows. Experience in other regions with certification testing has shown that the total testing time estimated was not required.

Any time gained in the testing schedule with Lockheed should be used to start network testing in the appropriate MSA. For example, if a Service Provider is certified on the NPAC by May 4, then network testing should begin on May 5 at that location. The entire schedule for testing and implementation should be accelerated accordingly.

MCI is concerned that the date May 11, 1998 will be considered the earliest rather than the latest date that the incumbents can complete NPAC certification, and that the schedule is based on the latest date possible rather than the earliest.

[21] Attached in Appendix B is Lockheed's NPAC Interconnection Turn Up Plan.

MCI's position is that by the time BellSouth makes their connection Lockheed-Martin will have turned up a significant number of Service Providers and will not need all the time shown on the schedule. BellSouth has made a connection to the Perot Systems NPAC and will have experience in that connection that is no different for Lockheed-Martin's NPAC. The experience that Lockheed-Martin has developed while turning up four other regions will be at a high level. Those skills should allow earlier NPAC deployment than the May 11, 1998 schedule indicates.

MCI will reference the Number Portability Administration Center User Interconnection and Turn-Up Plan, attached in Appendix B. Network connection activity has been on going from February 2, 1998 (Item ID 6 of the enclosed Turn-Up Plan) and is to continue through mid April.

The following items lend themselves to shorter intervals:

1) ID 43, SOA/SMS Test Readiness activity of 5 days, including ID 44 through 47, may be shortened by one (1) day due to being a repeated activity. This will gain one (1) day for the start of Service Provider to NPAC Turn-UP Testing.

2) ID 48, the Service Provider to Number Portability Administration Center Turn-Up interval is scheduled for 20 days. The experience of the other regions has indicated that this interval could be shortened by at least 5 days, if not more, since this is an activity that was performed earlier.

3) ID 49, Service Provider to Service Provider (round robin) testing is scheduled for 5 days. Other regions have demonstrated that this activity can be shortened, but the test duration depends on the number of tests to be performed. Still, the potential exists to save time.

4) Interim Production Platform Established (ID 52) has 3 days of testing scheduled followed by Database Cleanup (ID 55) for 2 days. The database cleanup has taken only one day in other regions, saving another day.

As has been shown above, at least 7 working days and possibly more have been saved from the NPAC schedule. With this plan, LNP deployment can begin much sooner than the time frame BellSouth's filing calls for.

VI. INTERCOMPANY TESTING

BellSouth asserts that "a minimum of 30 days is required to perform end-to-end systems testing with other local telecommunications carriers". MCI disagrees that 30 days is required. Testing of LNP has been successfully completed in 4 regions of the country. The need to test, and the duration of the testing period, should decline as more MSAs are made LNP-capable. Since four (4) or more regions will have implemented commercial LNP before BellSouth's proposed schedule for testing in Atlanta, MCI believes that the testing for phase I and subsequent implementation in the Southeast region should be expedited as much as possible. MCI believes that once the testing is finished, LNP should be commercially available within the Atlanta MSA on all switches. BellSouth has already stated their switches in Atlanta are 100% implemented with LNP software. Once the NPAC is commercially available on or before May 11, 1998, BellSouth should be prepared to begin turn up testing with Lockheed. No additional delay should be artificially built in. Set forth below is a more reasonable example of how inter-company network testing should occur.

Item	Start Day	End Day	Task
A	1	1	NPAC Ready Date
B	1	1	Service Providers (SPs) send sample local service requests (LSRs) to testing partners
C	2	2	SPs receive firm order confirmations (FOCs) from testing partners
D	2	7	1st numbers are ported
E	3	7	Order cancellation
F	3	7	Conflict resolution
G	8	13	Test calls are made on ported numbers
H	14	17	Final orders – port numbers to original SPs
I		17	End

This timeline identifies the activities involved in inter-company network testing.

A) This is the date Lockheed sets as the commercial availability date, which is on or before May 1, 1998.

B) SPs send an LSR requesting service for a sample customer.

C) Within 24 hours, the current SP sends a confirmation to the new SP acknowledging receipt of the LSR.

D) The test numbers are ported. Process flows identify this as an activity that takes between 3 and 5 days.

E) As soon as the FOC is received, testing the order cancellation and conflict resolution processes can begin. These tasks run concurrently with the test calls. This could take a few minutes to a few days.

F) See E.

G) SPs make test calls (tests are a subset of what was tested during the FCC Field Test) to ensure the ported phone numbers ring at the proper place.

H) SPs port test numbers back to the original SP.

I) End

As shown in this example, a 30-day testing period is not required, as BellSouth has stated. Inter-company network testing can be completed in fifteen business days. No additional time is needed.

VII. BELLSOUTH'S IMPLEMENTATION SCHEDULE

BellSouth proposes a 90-day extension to the end of the Commission-mandated schedule. BellSouth also cites the NPAC delay as the cause for a late implementation for MSAs in all phases. The lack of a functional NPAC during Phase I and much of Phase II has prevented porting. However, following implementation of the initial phases, MCI believes that Phases III, IV, and V can, and should be, implemented on schedule. MCI disagrees with BellSouth that anything less than their proposed schedule is a "flash cut". Even using their own preposterous schedule as an example, BellSouth has more than enough time to complete LNP implementation of Phases III, IV, and V, in conformance with the FCC schedule. To meet this schedule, BellSouth should put their legions of employees to work, even if overtime is required. Under the circumstances, this is a reasonable course of action.

BellSouth asserts they have "completed non-NPAC SMS related LNP implementation efforts to achieve operational readiness to implement LNP in Phase I MSAs and Phase II MSAs pursuant to the Commission's schedule". BellSouth makes no mention in their petition of the "Port-To-Original" and "NPA Split" change requirements the industry has been working on. This is confusing because the industry specification changes that have occurred concerning these features are beyond the NANC Release 1.1 to 1.8 changes. In addition, Perot, if they had been retained as the NPAC vendor, and thus BellSouth, would have also needed to support these modifications. Yet BellSouth makes

no mention of the need to make these development changes in its petition. Could it be that BellSouth is holding onto these issues for a future waiver petition?

It is possible that BellSouth had already planned for these modifications in its NPAC and systems interfaces due to their knowledge of the changes through their participation in industry meetings. However, if this is true, then it becomes even more questionable as to why, only now, BellSouth claims they became conscious of the need to support the NANC Release 1.1 to 1.8 specification changes. Moreover, if Bellsouth has not made plans to support the industry modifications for "Port-to-Original" and "NPA Splits", the Commission should deny them any further consideration for delay on those changes.

VIII. BELLSOUTH'S "ROBUST" INTERFACE

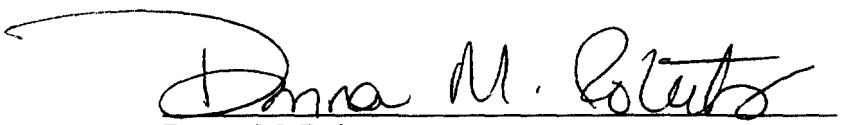
BellSouth does "not believe that the vendors of alternative products could possibly deliver the new interfaces to its legacy systems within the timeframe necessary to test and debug them by September 1, 1998."[22] BellSouth has chosen to implement what it feels is a "robust" platform for their LSMS and AIN SMS interface. It is important to note that this interface is internal to BellSouth, not the LSMS to the NPAC interface. This argument is therefore irrelevant. MCI feels that BellSouth's decision to redesign their internal interface should not exempt them from meeting the schedule, even if it means a manual workaround. Competition must be allowed to proceed in the Southeast. These extras are not grounds for delay in implementation of LNP.

In summary, BellSouth has failed to offer evidence of "network reliability" problems or "technical" issues associated with completing implementation by December 31, 1998. MCI contends the extension request should be denied.

WHEREFORE, for the foregoing reasons, MCI respectfully requests that BellSouth's Petition to extend the LNP deployment schedule past the end of 1998 should be denied, and the Commission should order BellSouth to deploy LNP in a more reasonable and timely fashion, as stated herein.

Respectfully submitted,

MCI TELECOMMUNICATIONS CORPORATION



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Dated: March 12, 1998

[22] BellSouth petition, Affidavit of Douglas W. McDougal.

APPENDIX A

LOCAL INITIATIVES

High Level Comparison and

Executive Summary

NANC 1.1 and NANC 1.8

Prepared by Gustavo Hannecke and David Fultz
March 10, 1998

High Level Comparison between NANC 1.1 and NANC 1.8

1.0 Overview

This document presents a high level comparison between the contents of the North American Numbering Council (NANC) Releases 1.1 and 1.8 which enable Service Provider (SP) Local Number Portability (LNP). The supporting Interoperable Interface Specification (IIS) and Functional Requirements Specification (FRS) documents for NANC 1.1 and 1.8 have been compared. The differences are described in section 3.0.

This analysis was conducted for changes impacting the MCI Local Initiatives (LI) Service Order Administration (SOA) system and Local Service Management System (LSMS) only, i.e., changes affecting exclusively the Number Portability Administration Center (NPAC) are in general not reported in this document unless they are worthy of special consideration because of their significance.

1.1 Definitions

System Impacted: Refers exclusively to the SOAs or LSMSs.
Backwards Compatible: A change is considered backwards compatible when its implementation is not mandatory for compliance with the current or future NANC releases.
Size: Description of estimated effort to upgrade the SOA/LSMS system. The values are:

- Large - New functionality needed to run business or major changes impacting existing functionality
  - Time to implement could range from a few months to a year
- Medium - Functionality changed, changes in existing logic
  - Time to implement could range from a few days to 2 months
- Small - Minor changes involving some update to the code; no new logic or functionality involved.
  - These changes could be a few minutes to a few days

1.2 Assumptions/Dependencies

1. The conclusions reported in this document regarding backwards compatibility and 'size' of changes are based on the assumption that similar (but not identical) architectures of SOA/LSMS systems have been implemented across different Service Providers.

2.0 NANC 1.1 & NANC 1.8 – Executive Summary

Following is a summary of the potentially significant differences, by project component, between NANC Release 1.1 and 1.8. Additional, less impacting change orders are presented in section 3.0.

2.1 Filtering

Filtering refers to a service provider's (SP's) ability to limit the local number portability (LNP) data transmitted from one or more NPACs and its LSMS, based on the NPA (area code) or NPA-NXX (exchange). Although typically filters are used more by regional SPs, filtering functionality in NANC Release 1.x could be considered 'optional', because of the way in which NANC implemented these features. The changes to filtering rules and related impacts between NANC 1.1 and 1.8 required application modifications for MCI, however, depending upon its initial implementation, an SP may or may not have a notable impact due to these changes.

2.2 NPA Splits

The requirements relating to NPA Split processing continue to evolve. What has been presented through NANC 1.8 is clearer and more specific than in earlier iterations, however, a comprehensive approach to NPA Splits in an LNP environment remains an open issue. Again, depending upon its initial implementation, an SP may or may not be significantly impacted by the new requirements presented in NANC 1.8.

2.3 Security Modifications

The modifications associated with 'key exchange' were aimed at enhancing security for the interfaces between the NPAC and an SP's SOA and LSMS systems. As a result of encryption key format changes, each SP had a varying degree of impact based on its initial implementation. Encryption is a method of "scrambling" data so only those with the "key" could read it.

2.4 DSET Upgrade

A vital Year 2000 (Y2K) patch to the communications utility software (DSET) utilized by the majority of SPs was implemented between NANC 1.1 and 1.8. Assuming an SP employs DSET, a significant effort could be associated with adopting this DSET upgrade.

2.5 Data Download File Format Modifications

Depending upon its initial implementation, an SP may or may not be significantly impacted by Lockheed-Martin publishing the format of Data Download Files between NANC 1.1 and 1.8. In any event, data downloads do not impact the normal daily business operations of LNP.

3.0 NANC 1.1 & NANC 1.8 – High Level Comparison

At a high level, the following are the software changes included in NANC 1.8 that are not part of NANC 1.1.

3.1 Interoperable Interface Specifications (IIS)

1. ***Filtering***
   Description of Change: The filtering rules have been changed between NANC 1.1 and NANC 1.8. Filtering in 1.1 was unclear and open to different interpretations. Later NANC versions narrow the interpretation to obtain a common implementation across different service providers SOAs.

   System impacted: This change has significantly affected the MCI SOA but it did not necessarily affect all SP SOAs similarly. The impact depends on how filters were initially implemented as to whether major changes will be required to move from 1.1 to 1.8.
   Backward Compatible: NO

   Size: Small to Medium

2. ***Filtering Support***
   Description of change: For messages sent to any object[1], the scope and filter will be checked to insure it is appropriate for that object class.

   System impacted: Same as item 1.

   Backward Compatible: NO

   Size: Small to Medium

3. ***OIDs (Object Identification) Used for Bind Request[2]***
   Description of change: The rules for what values constitute an OID value have changed between NANC 1.1 and NANC 1.8. This pertains to what values can be used in describing objects.

   System impacted: The SOA and LSMS. Minor changes and recompile were required to upgrade to 1.8.

   Backward Compatible: NO

   Size: Small

4. ***Naming Attributes***
   Description of change: Following NANC 1.1, it has been explicitly stated that Non-Zero values are not supported in naming attributes for Local Number Portability objects defined in the IIS. Some values previously allowed in defining objects are now invalid.

   System impacted: SOAs and LSMSs, depending on the implementation.

   Backward Compatible: NO

[1] An object, in an "object-oriented" software environment, is a set of software commands which are defined as a particular object, so the commands do not have to be repeated. Only the object repeats.
[2] A Bind Request is a message sent from a service provider's network to the NPAC requesting communication. This ensures the networks are communicating properly.

Size: Small

5. ***Subscription Version***
Description of change: In IIS 1.6 it has been explicitly stated that M-DELETE commands are not sent from the service provider to the NPAC for subscription versions set to 'Old' as a result of subsequent porting activity.

System impacted: The MCI LSMS was affected since we did not delete previous Subscription Versions (SVs) in the LSMS. MCI opened a production Problem Report (PR) and corrected the problem. Again, this change affected the MCI LSMS but it didn't necessary affect all SP LSMSs.

Backward Compatible: YES, depending on the implementation. If not implemented, the NPAC can correct the LSMS database by running an AUDIT against it.

Size: None to Medium

Scenarios

6. ***Port to Original***
Description of change: New scenarios were included to show how port-to-original ports are processed.

System impacted: None (only NPAC).

Backward Compatible: YES. There were no new notifications to support the port to original function. Only new Process Flows (and combinations of existing ones) were implemented.

Size: None

Object Definition

7. **Lockheed NPAC Specific Information**
Description of change: No new objects or Notifications were added or substantially modified between NANC 1.1 and 1.8.

System impacted: Since minor changes like 'descriptions' or 'behaviors' have been modified, the SOA/LSMS systems need to be recompiled in order to upgrade to 1.8.

Backward Compatible: NO

Size: Small

3.2 FRS

NPAC Data Model

8. ***Contact Country Data***
Description of change: The format of the "contact country" in the customer contact field changed.

System impacted: SOAs.

Backward Compatible: NO. Since this is optional data , changes are required only if supported.

Size: Small

9. ***TSAP Address/Customer Network Address***
Description of Change: The TSAP[3] Customer Network Address attribute has changed from Optional to Mandatory. This assists the NPAC in identifing service providers' networks.

System impacted: SOAs and LSMSs

Backward Compatible: NO

Size: Small

10. ***Status Change of Subscription Versions (SV)***
Description of change: The code values have been changed.

System impacted: SOAs and LSMSs

Backward Compatible: NO

Size: Small

Requirements

11. ***NPA-NXX Effective Date Validation***
Description of change: New validation rules to allow SPs to add NPA-NXXs with an effective date that is set to past, present or future. The effective date says when the NPA NXX is portable.

System impacted: SOAs. This change has affected the MCI SOA but it did not necessarily affect all SP SOAs. The MCI SOA had an edit to prevent 'past' dates.

Backward Compatible: YES. If not implemented, it will not allow the SP to set past dates, but it will not impede business.

Size: Small

12. ***NPA Split***
Description of change: New requirements were introduced and existing requirements have been changed. Some of these requirements experienced many iterations before they stabilized and others are still under discussion in the NANC Technical and Operations (T&O) meetings. Depending on their resolution and implementation in a subsequent NANC release, they may affect the current NPA Split processing and Audits.

System impacted: SOAs and LSMSs.

Backward Compatible: NO

Size: Medium to Large depending on the current implementation.

[3] TSAP (transport service access point) is an element that describes a service providers network. Since the NPAC communicates with many different networks, this assists in identification.