

Alabama Public Service Commission

Orders

In the Matter of)

)

General
Proceedings
DOCKET
NO. 26

Consideration of TELRIC Studies)

REPORT

IN THE FORM OF A

PROPOSED ORDER

REGARDING PRICING OF BELLSOUTH=S

UNBUNDLED NETWORK ELEMENTS

HEARD: Monday, September 22, 1997 - Friday, September 26, 1997, Commission Hearing Room 904, RSA Union Building, 100 Union Street, Montgomery, Alabama.

BEFORE: Carl L. Evans, Chief Administrative Law Judge

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ACRONYMNS

USED WITHIN THIS REPORT

ACT	TELECOMMUNICATIONS ACT OF 1996
ALEC	ALTERNATIVE LOCAL EXCHANGE CARRIER
APSC	ALABAMA PUBLIC SERVICE COMMISSION
CAPM	CAPITAL ASSET PRICING MODEL
CBG	CENSUS BLOCK GROUPS

CLEC	COMPETITIVE LOCAL EXCHANGE CARRIER
CO	CENTRAL OFFICE
COCOT	CUSTOMER OWNED COIN OPERATED TELEPHONES
COT	CENTRAL OFFICE TERMINATION
CRIS	CUSTOMER RECORDS INFORMATION SYSTEM
DCF	DISCOUNTED CASH FLOW
DLC	DIGITAL LOOP CARRIER
DS1	DATA SIGNAL ONE (four-wire, channels that can carry 24 DS0s)
DS0	DATA SIGNAL ZERO (Two-wire, voice grade connections)
EASE	EASY ACCESS SALES ENVIRONMENT
FCC	FEDERAL COMMUNICATIONS COMMISSION
FCC ORDER	FIRST REPORT AND ORDER
HVAC	HEATING VENTILATION and AIR CONDITIONING
IDLC	INTEGRATED DIGITAL LOOP CARRIER
ILEC	INCUMBENT LOCAL EXCHANGE CARRIER
IXC	INTEREXCHANGE CARRIER
JCC	JOINT & COMMON COSTS
LEC	LOCAL EXCHANGE CARRIER
MDF	MAIN DISTRIBUTION FRAME
NBI	NORTHERN BUSINESS INFORMATION
NGDLC	NEXT GENERATION DIGITAL LOOP CARRIER
NID	NETWORK INTERFACE DEVICE
NRC	NONRECURRING COSTS
NRCM	NONRECURRING COST MODEL
OSS	OPERATING SUPPORT SYSTEMS
PBX	PRIVATE BRANCH EXCHANGE
POT	POINT OF TERMINATION
RTU	RIGHT TO USE
SCIS	SWITCHING COST INFORMATION SYSTEM
SCP	SERVICE CONTROL POINT
SONET	SYNCHRONOUS OPTICAL NETWORK

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Introduction

On February 8, 1996, Congress passed the Telecommunications Act of 1996 ("the Act"). This Act specifically provides for competition between local exchange carriers. It seeks to create "a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition . . ." It also aims at promoting competition in the local exchange market through a mosaic of options including resale, unbundled

network elements, and interconnection. The Alabama Public Service Commission's (Commission) stated objectives in its September 20, 1995, order on Local Competition and Price Caps espoused essentially the same positions on promoting local competition and deployment of advanced technologies and services in Alabama.

On August 8, 1996, the Federal Communications Commission released its First Report and Order ("FCC Order") setting forth rules to be followed while implementing the terms of the Act. The FCC adopted specific pricing rules to be followed by the states for pricing UNEs to include proxy rates for loops and ports.

On October 15, 1996, the United States Court of Appeals for the Eighth Circuit entered an Order Granting Stay Pending Judicial Review of certain pricing and the "pick and choose" provisions of the FCC Order. On July 18 and October 14, 1997 the Eighth Circuit Court issued Orders regarding the Iowa Utility Board's challenge of the FCC's pricing rules. The Court held:

Our determination that the FCC's belief that it has jurisdiction to issue local pricing rules conflicts with the plain meaning of the Act negates any deference owed to the Commission's interpretation and obligates us to vacate the FCC's pricing rules.

With regard to the issue of rebundling of unbundled UNEs, the Court held:

Despite the Commission's arguments, the plain meaning of the Act indicates that the requesting carriers will combine the unbundled elements themselves. Consequently, we vacate rule 51.315 (c)-(f) as well as the affiliated discussion sections.

As a result of the Court's ruling, states are not bound to follow the pricing rules or proxies established by the FCC for UNEs. Further, incumbent local exchange carriers (ILECs) are under no obligation to offer recombined UNEs to alternate local exchange carriers (ALECs).

AT&T Communications of the South Central States, Inc. ("AT&T") formally requested negotiations with BellSouth Telecommunications, Inc. ("BellSouth") on May 6, 1996. BellSouth is an ILEC as defined by the Act. On October 11, 1996, AT&T filed with this Commission a Petition for Arbitration. This Commission conducted hearings on December 10-11, 1996 and the panel subsequently submitted its report and recommendations for Commission consideration.

On February 6, 1997, the Commission adopted in full the recommendations of the arbitration panel appointed to arbitrate the unresolved issues between the parties to that proceeding - AT&T and BellSouth. Additionally, the Commission suspended certain provisions of the Commission's Telephone Rule T-28 in order to allow parties on the Commission's telecommunications service list ten days from the date of said order to file comments on the recommendations of the arbitration panel. The parties to the arbitration were allowed an additional ten days to file responses to any comments submitted by non-parties. The Commission emphasized that all such comments could, at the option of the filing parties, be styled Motions for Reconsideration. In its report, the arbitration panel recommended interim prices for UNEs and that the parties file revised total element, long run, incremental cost (TELRIC) studies within six months from the date of the Commission's Order. The panel further recommended the adoption of a True-up procedure to be utilized following the Commission's adoption of final UNE prices to reconcile the difference during the period when interim prices were in effect.

On May 14, 1997, the Commission adopted its Joint Order On Reconsideration concluding that it is our firm belief that we have satisfactorily resolved all issues presented to us for reconsideration/clarification. Section D4(c) of the Order addressed the final resolution of pricing for Unbundled Network Elements (UNEs):

We find that the interim rates for unbundled network elements adopted on an interim basis in our February 12, 1997 Order are appropriate until such time as revised, forward-looking cost studies can be submitted by the parties and analyzed by the Commission. The true-up procedure referenced in our February 12, 1997 Order will alleviate the concerns expressed by GTE. We accordingly deny GTE's request for reconsideration and reaffirm our decision requiring the parties to submit forward-looking cost studies within three months from the effective date of this Order. The Commission will enter a decision establishing permanent prices no later than within six months from the effective date of this Order.

Several parties petitioned the Commission and requested to intervene in the proceedings for establishing BellSouth UNE prices. By Hearing Notice of July 7, 1997, the Commission established Docket 26029 as a generic proceeding in consideration of TELRIC studies. The Commission held a hearing on this matter from September 22 through September 26, 1997.

Pricing Considerations

The Telecommunications Act of 1996 defines unbundled access as:

The duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of the agreement and the requirements of this section and section 252. An incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service. @

The Act directs that interconnection and network element charges:

(A) shall be--

(i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and

(ii) nondiscriminatory, and

(B) may include a reasonable profit.

In its Order the FCC determined that:

We conclude here that prices for interconnection and unbundled elements pursuant to sections 251(c)(2), 251(c)(3), and 252(d)(1), should be set at **forward-looking long-run economic cost**. In practice, this will mean that prices are based on the TSLRIC of the network element, which we will call **Total Element Long Run Incremental Cost (TELRIC)**, and will include a reasonable allocation of forward-looking joint and common costs. @

In paragraph 678 of its Order, the FCC stated that it was adopting a version of the Total Service Long Run Incremental Cost (TSLRIC) methodology applicable to network elements rather than services. Hence, it renamed the methodology Total **ELEMENT** Long Run Incremental Cost (**TELRIC**). The FCC further described the methodology as follows:

In a TELRIC methodology, the "long run" used shall be a period long enough that all costs are treated as variable and avoidable. (204) This "long run" approach ensures that rates recover not only the operating costs that vary in the short run, but also fixed investment costs that, while not variable in the short term, are necessary inputs directly attributable to providing the element. @

Incremental costs are the additional costs (usually expressed as a cost per unit) that a firm will incur as a result of expanding the output of a good or service by producing an additional quantity of the good or service. (191) Incremental costs are forward-looking in the sense that these costs are incurred as the output level changes by a given increment. (192) Forward-looking incremental costs, plus a portion of the forward-looking joint and common costs, are sometimes referred to as economic costs. @

In developing TELRIC costs, the FCC embraced the following view of the network:

AY.the forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements.@

Cost Study Methodology

BELLSOUTH

BellSouth witness Caldwell testified:

ACost study methodology refers to the overall guidelines for conducting the study, as well as the major supporting processes through which the study is carried out. BellSouth used the following overall guidelines in its cost studies:

! Costs should reflect forward-looking network architecture, engineering and materials and equipment.

! Costs should be developed individually for each unbundled network element.

! Costs should be based on the particular materials, equipment, and installation requirements associated with provisioning a specific unbundled network element, to the greatest extent possible.

! Costs should be developed based on state-specific characteristics and data.

! Costs should be complete, reflecting the full costs of installation as well as the inclusion of shared and common costs.

! Cost development should be auditable and understandable.@

AT&T

AT&T witness Cabe testified:

ATELRIC (Total Element Long Run Incremental Cost) is the additional cost that would be borne by a hypothetical wholesale-only firm using current technology and the industry=s best practices to produce the current output of an unbundled network element with the benefit of a long run planning horizon, where additional cost is taken to mean the cost in addition to the cost of providing all elements other than the one under study. This definition refers to the total additional cost of providing the current level of output of a UNE, which must be divided by the number of units of output to yield cost per unit for use as a pricing standard.

Keeping in mind that prices are important insofar as they influence decisions regarding entry, making or buying facilities, and choices of capacity and technology, and that the Act=s pro-competitive and de-regulatory objectives will be served by setting prices in such a way as to support development of efficient and effective competition in the local exchange market, six principles can be set out to guide estimation of cost. Cost estimates should:

- 1) estimate forward looking cost of all inputs
- 2) estimate cost of an efficient network
- 3) estimate long run cost

- 4) estimate incremental cost
- 5) include the benefits of economies of scale, density and connectivity
- 6) rely on publicly available data insofar as possible.@

AT& T recommends:

A This Commission should adopt rates based upon Total Element Long Run Incremental Costs ("TELRIC") plus a reasonable allocation of forward-looking joint and common costs ("TELRIC + JCC.") TELRIC + JCC rates are those associated with the forward-looking costs of unbundled network elements, based upon current, not historic, technologies and efficiencies. Such rates are consistent both with the decisions of this Commission requiring forward-looking pricing and the Act's requirement that this Commission set cost-based prices for network elements as opposed to services. Moreover, this methodology delivers on the promise of the Act to promote competition to the benefit of Alabama consumers.@

ACSI

ACSI opines:

A Using TELRIC will result in prices for network elements reflecting forward-looking, efficiently incurred costs. As noted, it is appropriate that prices be based on forward looking costing methodologies. Efficient decisions regarding market entry, exit and expansion are based on forward-looking comparisons of expected revenues and expected costs. For correct price signals to promote efficient market activity, forward-looking costs should be used.

The appropriate cost study is *long run in nature, i.e.*, it is based on a time horizon long enough to allow entry or exit to occur and/or for substantial changes in capacity or technology to occur. Those costs affecting any of these decisions (entry, exit, capacity expansion or technology adoption) are forward-looking and variable. A properly structured incremental cost study should therefore include forward-looking capital costs, and the preponderance of all expenses should be viewed as variable, *i.e.*, joint and common costs should amount to a relatively small fraction of total costs.@

SPRINT

Sprint=s position is:

A Regardless of the cost model relied upon, the underlying principles should remain constant. Specifically, prices should reflect forward-looking costs for an economically efficient firm; costing should be performed in sufficient detail so that resulting prices lead to economically rational entry decisions by competitors, as well as efficient utilization of the incumbent local exchange company=s network (such a policy ensures that prices are set neither too high nor too low in relation to forward-looking costs, and thus will best serve the public interest); whenever possible, the model should utilize publicly available data; and in order to serve the public interest, prices for unbundled network elements should not be set either significantly higher or lower than indicated by the appropriate information.@

COMMISSION

All of the parties to the proceeding generally agree that the TELRIC cost methodology and principles adopted by the

FCC should be used to set prices for UNEs. Much of the disagreement among the parties lies with the interpretation of the term Aforward-looking@ network design. Assumptions as to what constitutes a forward-looking network design ultimately determine operating efficiency and, thus, directly affect the inputs used in any TELRIC model. The FCC addresses forward-looking network design as follows:

AUnder the third approach, prices for interconnection and access to unbundled elements would be developed from a forward-looking economic cost methodology based on the most efficient technology deployed in the incumbent LEC's current wire center locations. This approach mitigates incumbent LECs' concerns that a forward-looking pricing methodology ignores existing network design, while basing prices on efficient, new technology that is compatible with the existing infrastructure. This benchmark of forward-looking cost and existing network design most closely represents the incremental costs that incumbents actually expect to incur in making network elements available to new entrants. Moreover, this approach encourages facilities-based competition to the extent that new entrants, by designing more efficient network configurations, are able to provide the service at a lower cost than the incumbent LEC. We, therefore, conclude that the forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements.@

We note that the FCC intends that any (1) forward-looking network design assumptions should represent the incremental costs that incumbents actually expect to incur in making network elements available to new entrants, and that (2) the reconstructed local network will employ the most efficient technology, subject to (3) a standard of reasonableness.

We conclude that the forward-looking network design will include the most efficient technology available today deployed consistent with reasonable design considerations. We further conclude that any assumptions as to what constitutes the forward-looking network design be subject to the constraint that the ILECs reasonably expect to incur the costs in making UNEs available to new entrants. Our intent is price UNEs so that ILECs are compensated, not for their embedded network, but for costs that they will incur in a competitive marketplace taking into consideration the cost savings and efficiencies of available technology and design. Our role, as we see it, is to identify economic costs that ILECs can reasonably expect to incur and to set prices that are equitable to both the ILECs and the new entrants.

Pricing considerations, other than those based on costs, are outside the scope of this proceeding. Therefore, we will not address whether the prices, so established, encourage or discourage the introduction of competition.

Deaveraged Costs

BELLSOUTH

BellSouth witness Varner testified:

AUnbundled loop rates should not be deaveraged until such time as the Commission can fully evaluate all the implications of such a policy change. These effects would include establishing a universal service fund and rebalancing end user local service rates. Further, that portion of the FCC=s pricing rules requiring geographic deaveraging has been vacated by the Eighth Circuit.@

AT&T

AT&T witness Cabe testified:

AThe important thing to note is that under these circumstances average pricing will completely deny the objective of the Act's requirement that incumbent LECs provide unbundled network elements at cost based prices. The pro-competitive and de-regulatory purposes of the Act require making unbundled network elements available in such a way as to allow entry to proceed rapidly and efficiently. Excessive averaging

of UNE prices leads to entry being neither rapid nor efficient, and may entirely frustrate the purposes of the Act.@

AT&T maintains that the Act=s requirement for cost based pricing dictates that costs be deaveraged on a geographical basis. Similarly, ACSI maintains that ABellSouth=s proposed rates must also be deaveraged to reflect geographic density.@.

MCI

MCI holds that:

AIf BellSouth=s use of state average loop prices is approved by the Commission, this would heavily advantage BellSouth in the competitive market by allowing the company to charge rates for loops in the more densely populated urban and suburban areas greatly in excess of the company=s cost. These excessive rates would effectively establish a price floor for BellSouth=s competitors significantly above BellSouth=s cost. BellSouth could then "game@ this price floor to realize monopoly profits, engage in a price squeeze, or both. Therefore, it is essential that loop prices be geographically deaveraged as done in the Hatfield Model.@

COMMISSION

The FCC=s Order states:

AThe 1996 Act mandates that rates for interconnection and unbundled elements be "based on the cost . . . of providing the interconnection of network elements." (313) We agree with most parties that deaveraged rates more closely reflect the actual costs of providing interconnection and unbundled elements. Thus, we conclude that rates for interconnection and unbundled elements must be geographically deaveraged.@

Retail telephone rates in Alabama are based on average costs and we duly recognize that prices based on such costs do not accurately reflect the economies of providing service to those areas with higher customer density. However, this issue can only be resolved by dealing with public policy implications associated with deaveraged rates and universal service. Such considerations are outside the scope of this proceeding. We therefore defer the consideration of deaveraged costs to subsequent Commission proceedings for universal service.

BellSouth=s Proposed Residual Recovery Requirement

BELLSOUTH

BellSouth submitted proposed UNE prices for the loop and port which consists of TELRIC plus a separate price additive. As BellSouth witness Varner testified:

AThe third component of the proposed rate structure is a factor which, when applied to specific TELRIC results in Alabama, will adjust for the difference in the theoretical unbundled network element investment and BellSouth=s actual investment. This factor is designed to recognize that the actual element being provided is part of a real, existing network, and not some portion of a theoretical projection of a future network. Rate development must recognize that an existing network has real costs and that these costs

should be recovered by the cost causers.

The Act says that BellSouth may include a reasonable profit in setting its rates. BellSouth cannot make a reasonable profit unless it is able to set its prices sufficiently above TELRIC to provide a reasonable contribution toward the common costs of the firm and recover historical costs. Since the Act permits rates to contain a profit above costs, it clearly anticipates that rates will recover, at a minimum, the full costs of the firm. It is certainly reasonable to recover historical costs, which are real costs, since it is also reasonable to make a profit.@

AT&T

In its brief, AT&T concluded:

ABellSouth further compounds this problem by adding a second component of embedded cost, which BellSouth refers to as the Residual Recovery Requirement ("RRR"). This entire approach is fundamentally inconsistent with a forward-looking TELRIC model. Forward-looking TELRIC prices cannot rest upon a foundation of embedded costs or historic technology, much less reflect the additional RRR BellSouth proposes.@

MCI

According to MCI:

AAnother example of BellSouth=s attempt to recover costs of its embedded network is its inclusion of a residual recovery requirement for local loop end switch port elements. This added cost to recover historical/embedded costs is perhaps the most obvious, but by no means the only, violation of the Act and the TELRIC principles described above.

The intended effect of the residual recovery requirement is to assure that BellSouth is made whole as if it were setting rates in a rate of return (not competitive) context. In fact, no matter what the TELRIC cost of a local loop is, the residual recovery requirement assures that the cost of BellSouth=s rate of return tendencies are imposed on Alabama=s consumers. Indeed, the residual recovery requirement component of BellSouth=s rates is such a blatant violation of the pricing provisions of the Act that one might speculate that it was included as a way to distract the Commission from the embedded characteristics contained in the other components of BellSouth=s proposal.@

COMMISSION

The FCC=s Order states:

AWe acknowledge that some incumbent LECs may have incurred certain embedded costs reasonably before the passage of the 1996 Act, based on different regulatory regimes. Some incumbent LECs may assert that they have made certain historical investments required by regulators that they have been denied a reasonable opportunity to recover in the past and that the incumbent LECs may no longer have a reasonable opportunity to recover in the new environment of the 1996 Act. The record before us, however, does not support the conclusion that significant residual embedded costs will necessarily result from the availability of network elements at economic costs. To the extent that any such residual consists of costs of meeting universal service obligations, the recovery of such costs can and should be considered in our ongoing universal service proceeding.(233) To the extent a significant residual exists within the interstate jurisdiction that does not fall within the ambit of section 254, we intend to address that issue in our upcoming proceeding on access reform.@

We acknowledge that a gap exists between historical and TELRIC economic costs. However, our objective is to

establish UNE prices based on TELRIC costs. As heretofore discussed, those prices should not be based on historical embedded costs but on a forward-looking network design. We agree with the FCC that such embedded costs are properly suited for a universal service proceeding and defer this issue to such subsequent Commission proceeding.

TELRIC Models

BellSouth sponsors its TELRIC Calculator and ATT/MCI sponsor the Hatfield Model (Version 4.0). Predictably, the record is rife with testimony wherein the parties extol the virtues of their own model while criticizing the competing model. We examined each model in detail.

BELLSOUTH TELRIC CALCULATOR

The BellSouth TELRIC Model was developed for purposes of establishing costs for unbundled network elements. Theodore Barry & Associates (TBA) was retained in 1996 to perform an independent review of BellSouth's cost studies. TBA assisted BellSouth with improving its cost study procedures through simplification and better documentation of the process.

Two types of costs are derived from BellSouth's cost studies: recurring and nonrecurring. Recurring costs reflect capital costs and operating expenses. Capital costs consist of depreciation, cost of money and income tax. Operating expenses consist of plant specific expenses (such as maintenance), ad valorem taxes and gross receipt's taxes. Nonrecurring costs are one-time expenses associated with provisioning, installing and disconnecting the unbundled network element. These costs include: service order processing, engineering, connect and test, and technician travel time.

The BellSouth TELRIC calculator utilizes up to five Microsoft Excel templates consisting of up to twenty-one worksheets each. Eight of the worksheets are reserved for inputs and thirteen for calculations. Input modules utilized by the TELRIC calculator include the capital cost calculator; loop model; switching network calculator; and the switching cost information system. The capital cost calculator is used to determine costs such as depreciation, cost of money, and income tax expense. The loop model stores specific characteristics of an average Alabama loop, vendor price tables, and develops the material costs for loops. The switching cost information model developed by Bellcore determines costs for ports, features, and usage. The switch network calculator model produces the costs for local tandem switching and common transport.

The BellSouth TELRIC model assumes existing switch locations and a forward-looking network design along existing roads and rights-of-way. BellSouth used a sample of 300 residential customers and 300 small business lines to determine average route layout and material requirements.

The model develops prices for a large number of unbundled network elements as required by ALECs, regulatory requirements, and BellSouth's own estimate of future ALEC requests. The sampling procedure generally provides accurate data regarding average loop characteristics based on existing rights-of-way, road networks, natural and man-made barriers. The model has approximately 5,000 user adjustable inputs and lends itself very easily to sensitivity analysis. The BellSouth TELRIC Model is extremely detailed, well documented, and generally user friendly.

Inputs for Operations Support Systems and non-recurring discounts are difficult to change within the BellSouth TELRIC Model and changes for these inputs do not necessarily flow through to every Excel worksheet. As a result, the user is sometimes required to make repetitive changes across platforms which can lead to mistakes and false outputs. Some inputs of the model are considered proprietary and are thus not easily verifiable. The BellSouth TELRIC Model does not produce costs by census block groups (CBGs), density zone, or wire centers. Instead, its outputs are designed to represent the average cost of UNEs throughout the State.

HATFIELD MODEL

The Hatfield Model was developed by Hatfield Associates, Inc., of Boulder, Colorado at the request of AT&T and MCI for the purpose of estimating the forward-looking economic costs of 1) UNEs, based on TELRIC principles; 2) basic local telephone service, as defined by the Federal-State Joint Board on Universal Service for universal service funding purposes; and 3) carrier access to, and interconnection with, the local exchange network. The model constructs a bottoms up estimate of the pertinent costs based upon detailed data describing demand quantities, network component prices, operational costs, network operations costs, and other factors affecting the costs of providing local service.

In basic terms, the Hatfield Model utilizes a scorched node approach to estimate the costs of providing the telephone network. That is, existing switch locations are held constant and the network is redesigned from those switching locations. Outside plant requirements are determined at the CBG level. CBGs are areas within each state defined by the U.S. Census Bureau that represent disaggregated census information. Consequently, detailed demographic data is available for these areas from the Census Bureau and the relatively small size of the CBGs makes a detailed geographical description possible.

The model incorporates inputs from the CBG database, distances between switching locations from a Bellcore database and data from ARMIS reports filed by the LECs with the FCC. These inputs are processed by Distribution, Feeder, Switching and Interoffice, and Expense modules which contain the algorithms defined by the Hatfield and Associates development team for computing network costs. The user is allowed to change 1,200 default values of the network operations and expense inputs to the modules and to conduct database queries and sensitivity analysis. Outputs may be obtained by density zone, study area, individual wire center, or CBG.

The Hatfield Model is straight forward and its inputs and algorithms easily verifiable. Hatfield and Associates relied on its own team of experts to review and develop many of the recommended inputs. This process has been on-going for several years. Hatfield is built around Microsoft Excel spreadsheets and the Microsoft Access database program. These applications are linked via Microsoft Visual Basic.

The model is user friendly and well documented. Using Microsoft business applications as the platform on which the model is constructed provides the user with convenient access to review model algorithms. The model allows user modification of up to 1,200 defined inputs and to process and save up to 99 different scenarios. The demographic and geologic inputs for the CBGs, as well as the distances between switching locations and the inputs from ARMIS reports, are publicly available and easily verifiable. Tremendous flexibility is afforded in that study results are available by density zone, study area, individual wire center, or CBG. The ability to narrowly define study areas geographically and demographically coupled with the flexibility for tailoring the output makes the Hatfield Model useful for purposes of defining universal service funding requirements.

Hatfield's weaknesses can be found in the assumptions incorporated into the model by its developers. CBGs are assumed to be square. This assumption was necessary because the model divides the CBGs into four equal size quadrants within the square CBG, for purposes of determining plant requirements. Each of the four CBG quadrants is then further defined by internal squares consisting of a population cluster in the center, surrounded by a less densely populated occupied area which is further surrounded by an unoccupied area. All cables and subscriber access interfaces (SAI) are assumed located in the center and/or on the borders of the squares. Lot sizes of equal size are assumed for each customer with the size depending on density zone. No consideration is given for geographical constraints such as natural and man-made barriers, depressions, elevations, and bodies of water. In practice, however, outside plant engineers are constrained by roads, streets, rights-of-way, and natural and man-made barriers. Such assumptions will impact estimates of outside plant requirements and, thus, costs.

Another assumption utilized in the Hatfield Model is that wire centers serve a discrete set of CBGs and that each CBG is served by one wire center. In practice, serving areas are defined according to economic criteria for providing service as economically as practicable. Further, CBGs may be served by more than one wire center. The input defaults may be changed by the user; however, the basic assumptions used in determining outside plant requirements cannot be altered.

The Hatfield Model calculates the costs of the following UNEs:

Network Interface Device (NID)

Loop Distribution

Loop Concentrator/Multiplexer

Loop Feeder

End Office Switching

Common Transport

Dedicated Transport

Direct Transport

Tandem Switching

Signaling Links

Signal Transfer Point (STP)

Service Control Point (SCP)

Operator Systems

Public Telephones

The limited number of UNE costs produced by the Hatfield Model reduces its effectiveness in a proceeding where prices must be established for a myriad of UNEs. BellSouth witness Varner addressed this limitation in his testimony:

The Hatfield Model produces only a limited number of unbundled network element costs, allowing Hatfield to appear simplistic. Any model that produces only a limited number of costs and does not use state-specific or element-specific cost data can have the advantage of simplicity. Indeed, the Hatfield Model apparently is only capable of generating costs for one type of loop - the 2-Wire Analog loop. As a result, Mr. Ellison resorts to applying ratios to the 2-Wire loop price generated by the Hatfield Model in order to approximate costs for other types of loops.

AT&T witness Ellison recommends:

For other elements, the Commission should adopt rates based on BellSouth studies but corrected for deficiencies identified in my testimony and the testimony of other AT&T witnesses.

COMMISSION

TELRIC proxy models are continuously being modified to correct observed weaknesses and to improve their accuracy. As a case in point, Hatfield and Associates released version 5.0 of its model subsequent to the conclusion of these proceedings. Relatively speaking, TELRIC cost study procedures are in a state of infancy. We recognize that there are strengths and weaknesses of both the Hatfield Model and BellSouth's TELRIC Model and are not prepared, at this point, to reject either. However, we choose to reject AT&T's recommendation that the Commission adopt a portion of the UNE prices produced by the Hatfield Model and the remainder from BellSouth's studies with AT&T's proposed adjustments. For purposes of simplification, we elect to utilize the BellSouth TELRIC Model based on its ability of providing prices for UNEs in the detail required for this proceeding.

We encourage continued improvement and modification of both the Hatfield and BellSouth TELRIC Models and offer

the following recommendations for any future UNE filings:

We believe that studying each and every CBG in the State, for purposes of establishing UNE prices, necessarily dictates oversimplification of the outside plant estimation process. The procedure for determining outside plant requirements could be improved by selecting a sample of CBGs, density zones, or wire centers that are representative of the various population densities throughout the State.

We recommend that BellSouth, likewise, incorporate the use of these study areas into its model.

Overlays of existing rights-of-way, road networks, and natural and man-made barriers should be utilized and population clusters more accurately positioned within the study area through reliance on a field survey, aerial photographs or other available data.

Outside plant requirements should then be estimated based on a forward-looking network design for the study as modified for the above constraints.

The model should produce costs, as a minimum, for the UNEs established by the Commission in this proceeding.

We prefer that no input module be proprietary and that all algorithms be viewable.

The user should have the capability of adjusting the model inputs and easily performing sensitivity analysis.

BellSouth=s Loop Sample

BELLSOUTH

With regard to the loop sampling procedures, BellSouth witness Smith testified:

ABellSouth=s Customer Records Information System (CRIS) database contains the identity of every loop that the Company has, by telephone number. All I had to do was pick the numerical position of the beginning telephone number using a random number generator, and then have every succeeding working telephone number picked at a specified interval in order to obtain a sample of the size needed. (direct, p. 10) YI had an advantage because I had access to a BellSouth loop study done back in the 1980s. I could use the statistics calculated from that study, including the precision, mean and variance, and calculate an expected sample size for the study based on the desired precision results. (direct, p. 11) YAfter looking at the earlier results, I concluded that a sample size of about 300 loops representing residence customers and about 300 loops representing business customers would probably be sufficient to give me the precision interval I was looking for in those strata. The characteristic that we were examining was the investment in the loop. We were trying to determine, among all of BellSouth=s Alabama residential and business loops, the average investment required for each.@

BellSouth Witness Caldwell testified that the loop sample was considered representative of the average length of Alabama loops:

AThe representative loop that is included in the Loop Model was developed based on a sample of residence and business loops in Alabama. We have provided a significant amount of detail about the development of the loop sample in Mr. Ellis Smith=s testimony and in the supporting papers accompanying the studies, but I will provide an overview here.

Basically, our statistician developed a sampling process for us which we used to identify two samples of

loops: one consisting of residential loops and one consisting of business loops. Once the sample was developed, we examined each loop in the sample, and, if the loop as it then existed did not represent the most forward-looking, most efficient technology, we recast the loop so that it did. @

AT&T

AT&T witness Heikes pointed out that BellSouth's sample omitted a significant portion of the Company's business loops:

The sample used in the preparation of BellSouth's Alabama loop study was not a random sample of the entire universe of loops in the BellSouth system in Alabama, because all categories of loops other than residence lines and business lines were omitted from the universe included in BellSouth's study. Specifically, BellSouth omitted Business Trunks, ESSX lines, Public Access Lines, Entrance Facilities, Dedicated WATs Lines, Voice Grade Private Lines, Special Access Lines, Data Services and Other Lines from its study. These categories of loops omitted from the study account for more than 243,000 lines in Alabama, which is approximately 13.6% of all of BellSouth's lines in Alabama. The omission of these categories of loops from BellSouth's cost study appears deliberate, since BellSouth's cost study documentation describing the selection of samples from BellSouth's CRIS database specifically mentions ATrunks, Public, Semi-Public, COCOTS, Toll Terminals and ESSX @. Further, since the sample was stratified by residence and business lines, this omission is exacerbated, because the two largest categories that were omitted, Business Trunks and ESSX lines, account for approximately 34% of all nonresidential lines in Alabama. The 174,624 Business Trunk and Essex lines also account for nearly 72% of the portion of the universe omitted from BellSouth's study. Clearly, there are strata omitted from the BellSouth study that represent significant portions of the universe of loops in Alabama. @

The impact of this omission is twofold. First, the characteristics of 13.6% of the total universe of loops in Alabama are totally missing from the study. Thus, the estimated average cost of a loop in Alabama will be biased to the extent that the group of loops not sampled differs from the weighted average of those that were sampled. @

ACSI

ACSI witness Kahn testified:

BellSouth has consistently (over time and across jurisdictions) based its loop cost calculations on information drawn from a sample of loops, rather than on the entire population of loops. In its sampling, BellSouth gathered information on loops used in conjunction with various classes of service, including residence, small business, business (PBX) trunks, public and semi-public coin, COCOTs and ESSX. The Company, however, did not use information on all these service classifications for purposes of estimating cost in its loop model. Instead, the sample used for cost estimation purposes was restricted to residence loops and what the Company refers to as small business loops. Another way to describe the classification is that it includes all business loops, except PBX trunks and ESSX lines. My concern with the analysis is that the sample drawn is not representative of the entire population. Often, customers taking multi-line services such as PBX trunks and ESSX tend to be located in office buildings or in downtown locations where, on average, there is greater loop density and loops are shorter. In fact, in a large fraction of instances, these business customers have virtually no distribution facilities and no drop facilities associated with the loop plant used to provide service. Consequently, by focusing strictly on residence and single line business service loops, the Company has excluded a sizeable proportion of the low-cost loops from the loop sample. As a result, the loop estimates obtained may be upward biased. @

Dr. Kahn went on to explain that neither Bell Atlantic or U.S. West had excluded these categories of loops from their TELRIC studies. He recommended that the Commission require BellSouth to broaden its sample but, absent that, estimates these multi-line loops to be 15% shorter than loops used for single-line services. Finally, he recalculated the cost for the average distribution loop by re-weighting the investments to include both single and multi-line loops. Dr. Kahn recommends that BellSouth's proposed TELRIC price for a two-wire loop be reduced by \$0.28.

COMMISSION

The record in this proceeding clearly indicates that, although BellSouth sampled loops from all nine strata (loop types), it chose to exclude all but the residential and small business single-line loops in order to calculate the average loop length. During cross examination, BellSouth witness Smith confirmed that the sample used is not statistically representative of all Alabama loops.

Q. So you would agree with me that the loop prices presented by BellSouth in its cost study were not calculated based on a sample drawn from the entire universe of loops in Alabama?

A. No. The investments I calculated were based strictly on business loops and residence loops, and that's the only inferences that I ever made in this hearing.

Q. Okay. So the answer is that you agree that the loop prices were not calculated based on a sample drawn from the entire universe of loops?

A. Right. Only two strata were included. The others were not even included.

Q. But wasn't the intent of the cost study, to your knowledge, to provide an average investment calculation for all the loops in the state?

A. I was asked to provide an average investment based on the data I was provided. That was more of a policy matter, not a statistical matter. It's brought to the statistician. And as I understand it, they told me they had decided to use business loops and residence loops for whatever reason.

Q. Because the entire universe of loops was not sampled in Alabama -- and I understand that was not your decision -- you would agree with me that there's no statistical support for any investment estimate that would represent all loops in Alabama; is that correct?

A. That's correct. That's basic statistics. You can't make inferences about items which were not allowed to be or were not included in your sample. And we only had business and residence here, so that's all that was provided.

Q. And there would be no statistical support for any investment estimates for any of the seven strata of loops which were not included in the cost study; is that correct?

A. That's correct.

BellSouth witness Caldwell responding to Dr. Kahn's criticisms testified:

A BellSouth used residence and business class of service loops because these are the types of loops ALECs will purchase as unbundled voice grade loops. @

A While I agree that how a ALEC provides service may be irrelevant, which loops a ALEC purchases from BellSouth is definitely a fundamental issue in the cost study. Dr. Kahn states that BellSouth should have included ESSX Service7 loops in the unbundled loop cost study. These witnesses argue this position only because of their belief that by including ESSX Service7 loops in the sample, the unbundled loop costs would be lower. @

BellSouth's Reply Brief stated:

A The Intervenors object to BellSouth's loop sample, complaining that BellSouth excluded certain loops from its study such as ESSX loops. However, this objection is unfounded because it ignores that the sample was not intended to approximate the cost of all loops in Alabama. @ Rather, the sample was

intended to approximate the cost of an average loop in Alabama that a ALEC is likely to purchase from BellSouth to serve its residential and business end-user customers. As a result, ESSX loops were properly excluded.

As Ms. Caldwell explained, ESSX service is designed for large customers with an average of approximately 17 lines and as many as 5,000 to 6,000 lines. It would make no economic sense for a ALEC wanting to provide local service to an ESSX customer with 17 lines to purchase each unbundled ESSX loop from BellSouth; rather the ALEC would simply purchase a DS1 unbundled loop. If ALECs are unlikely to be purchasing ESSX loops on an unbundled basis a proposition with which the Intervenor do not appear to disagree ESSX loops should not be considered in calculating the cost of a loop that a ALEC is likely to purchase. @

Section 251(C)(3) of the Act requires incumbent LECs to provide non-discriminatory access to unbundled elements at any technically feasible point. @ BellSouth does not dispute that ALECs could utilize ESSX loops to provide service, nor does it claim that it is technically infeasible to unbundle such loops. BellSouth witness Caldwell testified that ESSX loops are available to ALECs under the terms of existing interconnection agreements. Therefore, we question their omission from the loop sample.

We agree that including these loops in the sample would result in lower unbundled loop costs. Sufficient data was not presented in this proceeding, however, concerning ALECs' purchasing practices for unbundled loops. Absent a revised loop sample, we have no means of accurately estimating the effect on loop costs. We choose, therefore, to adopt in principle ACSI witness Kahn's recommendation that BellSouth's proposed TELRIC loop price be adjusted to reflect that shorter loops were omitted from the sample. We conclude that a one-percent reduction to the adjusted prices for loops that we derive from BellSouth's TELRIC Model is thereby justified.

Cost of Capital

BELLSOUTH

BellSouth proposed an overall cost of capital of 11.25%, which is the rate currently authorized by the FCC for interstate purposes. BellSouth witness Billingsley applied three models generally used in cost of capital analyses: Discounted Cash Flow (DCF), Capital Asset Pricing Model (CAPM) and the Risk Premium approach. Dr. Billingsley testified that due to the dramatic increase in both actual and potential competition in the telecommunications industry in recent years, the business risk of the industry has also increased. Dr. Billingsley's DCF model results produced a range of 15.01% to 15.26%; his CAPM analysis produced a range from 14.93% to 15.01%; and his Risk Premium approach produced a range from 14.19% to 15.17% based on the overall equity market as measured by the Standard & Poor's 500 Index. From these analyses, Dr. Billingsley concludes that BellSouth's current cost of equity capital is within the range of 14.93% to 15.26%. Dr. Billingsley also calculated the cost of debt as at least 7.4%. He then applied two tests to determine the reasonableness of an overall cost of capital of 11.25%. Using BellSouth's actual capital structure of 58.32% equity, 41.68% debt and embedded cost of debt of 6.44% implies a cost of equity of 14.69%. A 60/40 equity to debt ratio and cost of debt of 7.4% implies a cost of equity of 13.82%. Both tests produce costs of equity that are lower than Dr. Billingsley's estimated range for BellSouth's cost of equity capital. Thus, Dr. Billingsley concludes that BellSouth's use of an 11.25% cost of capital is reasonable and conservative.

AT&T, MCI, ACSI

ACSI witness Kahn calculated a cost of capital of 9.75% based on the average of two recently developed costs of capital analyses. A Louisiana Public Service Commission Staff consultant proposed a 10.15% cost of capital for BellSouth, while the Georgia Public Service Commission Staff witness proposed a 9.35% cost of capital.

AT&T and MCI's witness Hirshleifer calculated a cost of capital of 9.43% based on a cost of debt of 7.06% and a cost of equity of 11.02%. Mr. Hirshleifer began his calculations by using data from a sampling of telephone holding companies taken from Standard and Poors Industrial Outlook. He then determined the forward-looking cost of debt by looking at all BellSouth's outstanding issues and using the weighted average of all of the yields to maturity. To

determine the cost of equity, he used the DCF and CAPM models and averaged the results.

Mr. Hirshleifer questioned the likelihood that BellSouth's risks will increase. He testified that the risks BellSouth faces in the leasing of network elements should be relatively low compared to the risky endeavors of the telephone holding companies used in the sample. These companies are engaged in domestic cellular and personal communications service, advertising, publishing, wireless telephone systems in other countries and wireless data communications networks in the United States and other countries.

COMMISSION

We note paragraph 702 of the FCC's Order:

Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition. We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally might warrant an increased cost of capital, but note that, earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt.(220) On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted, without that commission conducting a "rate-of-return or other rate based proceeding."(221)@

We recognize that local competition increases the risk faced by BellSouth and agree with the FCC that an 11.25% cost of capital is a reasonable starting point for TELRIC studies.

Depreciation Rates

BELLSOUTH

BellSouth witness Cunningham testified that source of the plant lives used to compute the depreciation rate inputs for the TELRIC study:

AYis the 1995 and 1996 BellSouth Depreciation StudiesY.The lives used in the cost studies were determined by calculating a simple average of the proposed lives for the nine states proposed in these two studies.@

These studies reflect proposed rates for the nine state region. However, in 1996, the FCC allowed BellSouth the opportunity to forego the triennial depreciation rate prescription process. Consequently, depreciation rates for the five-state region that comprised the former South Central Bell jurisdiction did not have lives prescribed by the FCC. The latest FCC approved depreciation rates for Alabama are from the 1993 prescription. Mr Cunningham testified that the 1993 schedule of approved depreciation rates from the FCC are not forward-looking.

AThe lives last prescribed by the FCC in 1993 for interstate purposes, particularly for the technology-sensitive accounts, are much too long. They are based on the old regulatory paradigm in which plant lives were artificially lengthened beyond their true economic lives so that the investment in that plant would be recovered in smaller year-to-year increments over longer periods of time. The assumption under this

paradigm was always that BellSouth was entitled to and would recover all of its investments, but over a longer period of time, thus reducing the amount the customer paid in the short term. In today's competitive environment, however, the marketplace is not likely to allow BellSouth to recover investment based on lives that are inappropriately long. The rapid changes in technology, which BellSouth must embrace in order to stay competitive, shorten asset lives significantly beyond what the FCC has prescribed. @

AT&T, MCI

AT&T and MCI witness Currin testified:

The lives used in the Hatfield Model are derived from the projection lives and future net salvage percents prescribed for BellSouth-ALABAMA (ABS-AL@) in 1993 by the FCC. Since the lives used by BellSouth are much shorter than the lives prescribed by the FCC in 1993, they are inappropriate for use in TELRIC calculations. @

Mr. Currin argues that the 1993 FCC-approved depreciation rates for BellSouth are forward looking and should be used in TELRIC calculations.

COMMISSION

We conclude that it is unreasonable to expect BellSouth to use depreciation rates from a 1993 prescription simply because the FCC did not review BellSouth's depreciation rates in accordance with the scheduled 1996 triennial rate review. Likewise, we find it unreasonable on BellSouth's part to use lives based on an average of proposed lives for the 1996 study in BellSouth's nine-state region. In fact, there is a benchmark on which to base forward-looking lives and it is the 1996 FCC depreciation rate prescription for the former Southern Bell Region.

On a forward-looking basis, we believe that copper feeder, particularly underground cable, will exhibit decreasing life characteristics as it is replaced by fiber. Using that assumption, and the 1996 FCC prescribed lives for the states of Georgia, Florida, North and South Carolina, we modified BellSouth's proposed projection lives and salvage parameters for the largest plant accounts. We then calculated straight-line, whole life depreciation rates to use as inputs for the TELRIC Model. Our modifications to BellSouth's depreciation parameters are as follows:

Project Life(yrs)

BellSouth Commission

TELRIC Modified

FCC Commission Depreciation

2212.0 Digital Switching 16.5 16.0 10.0 15.0 10/00% 6.67%

Cable Utilization Rates

Cable utilization may be defined as assigned pairs divided by available pairs. Generally, ILECs are concerned that sufficient spare capacity is available to meet demand without the need for frequent additions of plant. Potential competitors are concerned that they may be required, through UNE prices, to pay for unnecessary spare capacity. Average cable utilization rates are inputs into the TELRIC Model. UNE prices for loop facilities decrease with increasing cable utilization rates.

BELLSOUTH

BellSouth selected an average feeder utilization of 66.1% and an average distribution utilization of 46.1%. BellSouth witness Baeza testified:

 AIn the feeder plant, we expect a utilization factor of about 70%, while in the distribution plant, the fill factor would be expected to range around 40%.@

Mr. Baeza explained that decisions regarding average utilization are affected by:

 Requirements for spare capacity to meet future growth. Subsequent additions to buried facilities are expensive, particularly with distribution plant, because it involves trenching and excavation of streets and driveways.

 BellSouth=s design criteria which allocates capacity for 1.5 cable pairs per household.

 The fact that cable sizes are standardized. As an example, a placement may be required for the addition of 520 copper pairs; a 500 pair cable is insufficient and the next available cable size is 600 pairs. The 80 additional cable pairs results in a lower utilization percentage than if 520 pairs were actually placed.

 Requirements for bridged and end tap and allowance for defective pairs.

He further explained that feeder cable typically has a much higher utilization than does distribution cable because:

 Feeder cable serves to aggregate traffic from the distribution routes and, thus, requires less spare capacity.

 Feeder cable routes are shorter and more economically suitable for making subsequent additions than are distribution routes.

Mr. Baeza points out that:

 AAs reflected in Y the FCC=s Infrastructure Report, BellSouth=s feeder utilization is among the highest in the nation.@

He concludes that BellSouth=s current cable utilization percentages are forward-looking:

 AIt is not in BellSouth=s best interests to provide excessive amounts of facilities that will never be used. In turn, however, it is in BellSouth=s best interest to anticipate demand and install facilities far enough in advance to provide an economic method of serving that demand. BellSouth=s loop cost study mirrors the Company=s actual practice for a forward looking narrowband network.@

AT&T, MCI

AT&T and MCI witness Carter testified:

 ABellSouth used a fill factor of 66.1% for copper feeder, which reflects low utilization of the copper feeder investment. Assuming an annual growth rate of 3% per year, the BellSouth cost study includes spare copper feeder capacity for 8.5 to 10.4 years growth, which is excessive. My experience is that feeder cables are generally sized for three to five years growth, which is also supported by BellSouth=s Technology Directives.. Based on this three to five year period and an 85-90% Afill at relief@, the fills for the feeder cables should range between 70% (i.e. the lowest fill will be 85%-15%) and 90% (i.e. the upper fill will be 90%). Thus the average should be about 80%.@

ACSI

ACSI witness Dr. Kahn testified:

BellSouth describes the fill factors used in its TELRIC as being based on projected actual utilization values. Both the copper feeder and distribution utilization estimates are fill factors as measured in either 1995 or 1996. Hence, the utilization rates included in the TELRIC study are based on actual utilization rates as of specific dates within the last couple of years; this means they are tied to today's network, today's technology and today's service demand expectations.

Dr. Kahn described two reasons why BellSouth's utilization rates should be expected to increase on a going forward basis. First, he referenced the Company's 1995 annual report wherein BellSouth states that it is deploying additional customer lines at a record pace. Those lines are in addition to the primary basic service line and are being used to support Internet access, home FAX machines, telecommuting tools, home office phones, and children's phones. Secondly, he testified:

As the movement into a competitive environment will likely change the cost-benefit ratio associated with facility deployment and facility utilization. Moving out of a cost plus world will provide the Company with incentives to utilize these facilities more efficiently. Among other things, higher utilization rates should be expected.

Dr. Kahn recommends that BellSouth's projected distribution fill factor be increased from 46.1 to 56.77 percent. He further recommends that the projected feeder fill factor be increased from 66.1 and 74% for copper and fiber, respectively, to 78.31% for each.

COMMISSION

We note that the projection of average cable utilization is highly subjective. BellSouth relied on historical utilization rates as the basis for its projections and concluded that these were reflective of the forward-looking network. We do not discredit BellSouth's reliance on historical data. We find that it is essential as a reference point for estimating reasonable projections of the average utilization rates for the forward-looking network. We find merit in Dr. Kahn's testimony that utilization rates can be expected to increase in the transition from a cost plus to a competitive market place. However, the extent of that increase is very uncertain at best.

With regard to copper feeder, Mr. Baeza testified that the Company expects a utilization factor of about 70%. In its TELRIC study, however, BellSouth selected a copper feeder utilization rate of 66.1 percent. AT&T/MCI witness Carter recommends a feeder utilization rate within the range of 70 to 90%. ACSI witness Kahn, on the other hand, recommends a utilization rate of 78.31% for both copper and fiber feeder. We conclude that a projected 70% utilization rate for copper feeder is reasonable on a going forward basis and find no reason to further adjust BellSouth's 74% projected utilization for fiber feeder.

For distribution cable, BellSouth selected an average utilization rate of 46.1%. We are convinced that, on a going forward basis, this factor is likely to increase. As Dr. Kahn points out in his testimony, BellSouth may be experiencing greater utilization of its distribution plant due to technological and societal change. The growth in demand for Internet access, home FAX capability, telecommuting, etc., may make reliance on distribution fill factors from 1995-1996 data unreasonable. Additionally, BellSouth can be expected to achieve greater efficiency in the utilization of distribution plant in a competitive market. Dr. Kahn recommends a projected distribution cable utilization rate of 56.77%. We conclude that a 50% utilization rate is reasonable on a going forward basis for distribution plant.

Digital Loop Carrier (DLC)

The two basic types of digital loop carrier are universal digital loop carrier (UDLC) and integrated digital loop carrier

(IDLC). BellSouth relies on both types of DLC in its network for cable lengths where it is more economical than utilizing a complete copper path.

UDLC converts the analog signal from the customer to a digital signal at the remote terminal. There, digital signals from up to 24, two-wire customer connections (DS0s) are multiplexed and aggregated over a four-wire (DS1) to a central office termination (COT) where it is demultiplexed, converted to its original analog DS0s and hard-wired to the main distribution frame (MDF). When used with a digital switch, the signal is, once again, converted to digital through an analog interface unit before terminating in the switch. Consequently, there are three analog to digital signal conversions. With IDLC, the signal is converted only once - the analog to digital conversion of the customer's DS0 at the remote terminal. The digital signal is terminated directly into the digital switch. The switch demultiplexes the signal and converts it into DS0s. IDLC is the more economical method of providing service since COTs, MDFs and analog interface units are avoided. At issue is whether BellSouth should be required to unbundle IDLC and to price the loop using IDLC rather than UDLC.

BELLSOUTH

BellSouth witness Baeza testified regarding the network design assumptions used in its TELRIC model:

AThe loop design provides for copper loops for distances from the central office up to 12 kilofeet. Distances beyond 12 kilofeet are designed to be served with digital loop carrier (DLC) and fiber feeder facilities. For the majority of the loops served by DLC, Next Generation Digital Loop Carrier is provided. (direct, p. 3) Digital Loop Carrier (DLC) is equipment used in the loop to multiplex multiple voice grade circuits onto one or more DS1 facilities for transmission to the central office switch. The remote terminal, so called because it is in the field (i.e., loop), takes the voice grade circuits from the distribution plant and performs the multiplexing function. Once the DS1s reach the central office switch, termination is provided on either a Central Office Terminal (COT). The COT performs analog-to-digital/digital-to-analog functions in the process of demultiplexing the DS1s to voice grade circuits.@

Thus, as BellSouth witness Varner testified, BellSouth's TELRIC study does not consider a network design which employs IDLC. He went on to say:

AIntegrated digital loop carrier, by definition, integrates that loop into the BellSouth switch. So the only way that you can utilize integrated digital loop carrier will be if you are selling a service that is a combination of the loop and the switching. An unbundled loop is not a combination of the loop and the switching. It is just the connection -- just the transmission path from the wire center to the ALEC's premises, so you couldn't use integrated digital loop carrier.@

ANow, if a customer, an end-user customer, that we have is being served over an integrated digital loop carrier, we will, in fact -- you can still serve that customer with unbundled network elements. We'll provision you a loop. The loop simply won't use integrated digital loop carrier because it can't. We'll provision it in a manner that allows you to get to that customer and have the termination at your premises so that you can serve the customer.@

Should an ALEC request facilities to serve a customer whose service is provided via IDLC, BellSouth intends to provision the loop through either copper pairs or other digital loop carrier.

AT&T and MCI

AT&T and MCI witness Carter testified:

AAalog conversion is obviously not required when the BellSouth loop UNE is connected to the BellSouth switch UNE. Nor is analog conversion required when loops are purchased on a stand-alone basis. Analog conversion for switched services is also absolutely the wrong thing to do. It is an inefficient and obsolete technology for switched services because it is not designed for a digital switching environment and

degrades service. Requiring new entrants to purchase a configuration with such conversions would greatly hinder the new entrant's ability to compete on price offerings or service quality. @

Mr. Carter further explained the effect of BellSouth's approach:

The AUniversal= configuration reflected in BellSouth's loop cost studies:

1. provides inferior customer services
2. requires unnecessary investment
3. generates unnecessary operating expenses

He recommends that:

ACosts for local loops should be based on Integrated DLC. It is the forward looking technology, it is the least cost and most efficient technology, and it is currently available. Specifically, it should be based on Bellcore generic requirements GR-303 IDLC Generic Requirements which defines the functionalities and objectives of forward looking digital loop carrier systems. It is my understanding that this is the technology that LECs, including BellSouth, are deploying on a forward looking basis. @

COMMISSION

Paragraphs 383 and 384 of the FCC's First Report and Order states:

AWe further conclude that incumbent LECs must provide competitors with access to unbundled loops regardless of whether the incumbent LEC uses integrated digital loop carrier technology, or similar remote concentration devices, for the particular loop sought by the competitor. IDLC technology allows a carrier to aggregate and multiplex loop traffic at a remote concentration point and to deliver that multiplexed traffic directly into the switch without first demultiplexing the individual loops. If we did not require incumbent LECs to unbundle IDLC-delivered loops, end users served by such technologies would not have the same choice of competing providers as end users served by other loop types. Further, such an exception would encourage incumbent LECs to Ahide@ loops from competitors through the use of IDLC technology. @

AWe find that it is technically feasible to unbundle IDLC-delivered loops. One way to unbundle an individual loop from an IDLC is to use a demultiplexer to separate the unbundled loop(s) prior to connecting the remaining loops to the switch. @

The FCC has determined that customers served from IDLC loops should have the same access to competing providers as customers served from other facilities. We interpret the FCC's language to mean that LECs cannot refuse to allow competitors to serve customers whose service is provisioned using IDLC, but must provide a means for the customer's service to be unbundled from the IDLC loop. The FCC goes on to describe a method whereby that could be accomplished. It is important to note that the FCC's proposed method of unbundling the IDLC loop involves separating the customer's service before IDLC is connected into the switch. Such demultiplexing and separation of the signals would, in our view, dictate a digital to analog conversion and, thus, does not provide for a combined IDLC provisioned loop and port.

AT&T and MCI witness Carter testified that the Hatfield model assumes the IDLC configured loop and port will be purchased in combination. When questioned about the technical feasibility of Astripping out@ a single DS0 from the DS1 delivered to the switch via IDLC, he responded:

AWell, you could do what we said. What I said is that the hairpin was the right technology, the forward-looking technology for a non-switch. But you could use it to take it -- to take out a circuit so that you could

groom it and transport it out to another switch. If you are asking me would you do it, I would say no. If you are asking me could you do it, I would say yes.@

From Mr. Carter=s testimony, we conclude that his proposed hairpin technology, though appropriate for a non-switched service, is not technically feasible for a switched service without special conditioning. Thus, in order for BellSouth to reasonably comply with the request to provide interconnection using IDLC provisioned loops, it would be necessary to compel the Company to offer a combination loop and port as recommended by proponents of the Hatfield Model. The Eighth Circuit=s Order, however, defines very clearly the LECs responsibility in this regard:

AWe also believe that the FCC=s rule requiring incumbent LECs, rather than the requesting carriers, to recombine network elements that are purchased by the requesting carriers on an unbundled basis unambiguously indicates that requesting carriers will combine the unbundled elements themselves. While the Act requires incumbent LECs to provide elements in a manner that enables the competing carriers to combine them, unlike the Commission, we do not believe that this language can be read to levy a duty on the incumbent LECs to do the actual combining of elements.@

In its April 10, 1998 Further Order on Arbitration, the Commission found:

AUpon further review, we have determined that the holding in our May 14, 1997 Joint Order was indeed appropriate pursuant to the requirements of ' 251(c)(3) of the 1996 Act. The decision in our Joint Order to allow BellSouth to offer AT&T alternative local loop facilities as a means of serving BellSouth customers currently served by IDLC was premised on the underlying decision that it is, in fact, not technically feasible to unbundle IDLC.@

We conclude, therefore, that it is not technically feasible for BellSouth to provide a DS0 level of service over IDLC provisioned loops. We also find that we cannot compel BellSouth to offer a combination loop and port as would be otherwise necessary to provide individual DS0 service over IDLC configured loops. BellSouth has agreed to provide competitors alternative facilities to serve customers whose service is provisioned using IDLC. Specifically:

AWhere copper facilities were available, BellSouth noted that it would, upon request from AT&T, move loops from its IDLC equipment on to copper facilities. BellSouth also pledged to use its Next Generation Digital Loop Carrier (NGDLC) where it was installed to accommodate AT&T=s request for unbundled IDLC loops.@

Since these costs are what BellSouth can reasonably be expected to incur in providing ALEC access to its unbundled loops, we currently find no merit in the argument that BellSouth=s TELRIC model should provide for the use of IDLC.

Our determination that it is not technically feasible for BellSouth to unbundle and make available to competitors IDLC configured loops at the individual DS0 level does not mean that BellSouth should refuse to make available this technology to its competitors where it is technically feasible to do so. We conclude, and the testimony bears out, that it is technically feasible to unbundle IDLC configured loops at the DS1 level of service . That is, competitors are entitled to purchase IDLC loops where BellSouth is not required to separate individual DS0s for the competitor. Such prices should be determined via a bonafide request to BellSouth as per the terms and conditions of the interconnection agreement. The Commission retains oversight in said pricing.

Switching

BellSouth uses the proprietary Bellcore Switching Cost Information System (SCIS) Model to calculate usage and non-usage switching costs. AT&T and MCI rely on the Hatfield Model to derive proposed switching costs. The primary issue, as it affects switching, is the vendor contract prices used as inputs by BellSouth in its model, rather than the models themselves. The information regarding vendor prices and the discounts offered to BellSouth are considered proprietary.

BELLSOUTH

BellSouth sponsored the testimony of David Garfield from Bellcore to discuss the SCIS model and its components used to calculate switching costs for the TELRIC study. BellSouth witness Caldwell testified on the Company's calculation of switch costs:

ASCIS produces Alabama-specific costs based on the deployment of efficient and forward-looking switching technology:

SCIS inputs include location-specific, switch-related detail to ensure that switches are configured to meet the specific demands of particular locations across the network.

For the purposes of these cost studies, the switch characteristics input into SCIS by BellSouth reflect a forward-looking digital technology. Specifically, BellSouth assumed that all switches would be either Lucent (5ESS) or Nortel (DMS 100/200). The melded digital results are used as a surrogate for existing analog offices.

SCIS uses actual Alabama switch locations.

Further, BellSouth used actual discounted switch prices as an input into SCIS. Switch prices are a very important input into SCIS, and they represent the single major cost component of port, local usage, and tandem switching UNEs. Because SNC uses SCIS and the SONET Price Calculator as its primary inputs, it too presents forward-looking and Alabama-specific representations. @

BellSouth's TELRIC studies considered initial installation costs as well as those for line additions to its switch locations.

AT&T

In summarizing the purpose of her testimony, AT&T witness Petzinger testified:

BellSouth began its entire switching cost process with incorrect switching prices. BellSouth utilized an incorrect discount to customize the SCIS/MO switching vendor list prices to reflect the actual prices @ paid by BellSouth. This incorrect discount causes all of BellSouth's switching elements to be significantly overstated. In addition to comparing BellSouth/vendor contracts to the switch prices used by BellSouth in this study, I will present publicly available information regarding switching prices paid by Southwestern Bell, Pacific Bell, and U.S. West that provides comparative price points, and which demonstrates that BellSouth's SCIS switch price estimates are substantially inflated. @

Ms. Petzinger visited BellSouth's premises to review their switch vendor contracts. Her testimony relied heavily on the results of those visits and she did not supply the Commission with any work papers or materials supporting her calculations.

Regarding the switch prices used by BellSouth in its TELRIC study, Ms. Petzinger testified:

BellSouth's average price per line for 5E switches is \$185.48 and \$245.90 for the DMS-100, resulting in a melded price of \$204.18 per line. Switch vendor contracts often are expressed in terms of price per line, rather than a discount off the list price. @

She went on to compare BellSouth's inputs for switching to those used in the Hatfield Model:

The Northern Business Information (NBI) study, "U. S. Central Office Equipment Market", states that the average price for RBOC digital switches per line shipped in 1995 was \$102, and \$99 in 1996. The study also indicates that per line prices are expected to continue to decline slightly through the remainder of the decade. NBI data is used as the foundation for Hatfield. @

Additionally, Ms. Petzinger cited a four-year old Pacific Bell contract with an average cost per line of \$110 and 1996 testimony by Southwestern Bell that their installed cost per line was \$85. She also extracted information from

NORTEL's web page announcing a switch contract with U.S. West from which she calculated a price per line of \$68. Ms. Petzinger concluded:

It is apparent that BellSouth either did not use the information from the most current contracts, or made mistakes in converting the contract price per line to a discount input for SCIS/MO.

COMMISSION

Vendor contract prices for switching equipment, specifically the subsequent discount applied to these prices, is the primary criticism of BellSouth's TELRIC study as it relates to switching. Ms. Petzinger confirmed that her estimates of per line switch prices only considered the contract prices for initial installations and conceded that the expense factors for subsequent switch additions can be significantly greater than that for initial placements. In fact, The Northern Business Information (NBI) publication entitled U.S. Central Office Equipment Market, that is used by the Hatfield Model and relied upon for her switch price assumptions, included the following note regarding vendor pricing strategy:

ANBI says, cut price on sells of initials, new switches to grow install base and guarantee high margin sells of add-on hardware and software. A...once a switched supplier sales a new system it has a nearly captive customer, a teleco can only grow a switch by buying add-on lines from the manufacturer of that switch. Therefore, add-on lines are priced higher than lines on new systems and represent higher margin sales. Price of add-on lines will remain higher than the price of new lines throughout the forecast period.

Ms. Petzinger testified:

An efficient company would have bought them all now under the current prices.

However, she concedes, as reported in NBI, that telcos spend approximately four times as much on switch additions than on initial purchases. She went on to confirm that the Southwestern Bell, per-line switch price used in her testimony for comparison to BellSouth's SCIS vendor price considered only initial placements.

We believe that a cost study, which by definition is >long-run=, must consider more than short-run initial installation costs. We conclude, therefore, that Ms. Petzinger's reliance on prices based on initial installation is not a reasonable cost study assumption. Further, we find no compelling justification in the record for disputing the switch prices used in BellSouth's TELRIC study.

Vertical Services

The vertical service pricing issue is addressed by the parties in this proceeding from two dissimilar perspectives. In its First Report and Order, the FCC determined that local switching is an unbundled element and determined that it includes the basic function of connecting lines and trunks as well as vertical switching features, such as custom calling and CLASS features. In paragraph 414 of its Order, the FCC declined to unbundle local switching any further into individual elements noting that the incremental costs associated with vertical switching features on a per-line basis may be quite small,(448) and may not justify the administrative difficulty for the incumbent LEC or the arbitrator to determine a price for each vertical element. The FCC concluded that when a requesting carrier purchases the unbundled local switching element, it obtains all switching features in a single element on a per-line basis. A requesting carrier will deploy individual vertical features on its customers' lines by designating, via an electronic ordering interface, which features the incumbent LEC is to activate for particular customer lines. (para 412) The FCC's definition of the local switching element is commonly referred to as the full featured port. ALECs have interpreted the FCC's Order to mean that the price of the local switching element includes all vertical services. BellSouth, in its TELRIC study, has calculated the incremental cost associated with the most common vertical features and adds these costs to the cost for a stand-alone port to arrive at its price for the full featured port.

BELLSOUTH

BellSouth witness Varner restated this Commission's position regarding vertical services:

In its Final Order of May 14, 1997, in Docket No. 25703 and Docket No. 25704, the Commission required that vertical services be included in the price of the unbundled switching element at no additional charge. Whether the ALEC activates all the vertical features or none of them, the rate would be the same.

Responding to the FCC's assertion in paragraph 414 of its First Report and Order, that the incremental costs associated with vertical switching features on a per-line basis may be quite small, and may not justify the administrative difficulty for the incumbent LEC or the arbitrator to determine a price for each vertical element, Mr. Varner testified:

As BellSouth's submission in this proceeding demonstrates, the incremental costs of the vertical features are not necessarily small in all instances and further, the ability to arrive at individual costs and rates is not overly burdensome. Indeed, the greater burden would be to equip every port with all the vertical features whether they were going to be used or not, wasting capacity in each central office and causing higher prices for the ALEC.

Mr. Varner went on to describe BellSouth's proposed pricing for the local switching element:

Because BellSouth is only required to offer a port with all compatible features for which it has provided cost studies, BellSouth is not required to offer individual vertical features on a stand alone basis. In order to be responsive to ALECs and their customers, however, in addition to the required offering, BellSouth is also offering two additional options. First, BellSouth will offer a port without any features at an economic cost of \$3.06. Second, if features are desired, BellSouth is offering a port that contains up to three features of the ALEC's choosing. This three feature package will be priced to include the three highest cost vertical features in order to insure that such features are not priced below BellSouth's cost to provide them. This three feature package will be priced at \$6.49 per month which includes the port (\$3.06) and three features (\$3.43). For this \$6.49 charge, an ALEC can choose any one, two or three features that BellSouth offers. Our data shows that about 90% of customers have three or fewer features, therefore, this option should be sufficient to serve the majority of ALEC end users. Additional features beyond the three included in the package may be purchased at the individual feature prices on the price list (Rebuttal Exhibit AJV-1). Of course, an ALEC can always purchase the full featured port for \$8.99. These two additional options provide a considerable savings for the ALEC.

Thus, BellSouth is proposing what can be described as a three-tiered approach to pricing the local switching element: (1) a stand-alone port with no additional vertical features; (2) a port plus three features of the ALEC's choosing but priced according to the three most costly features; and (3) a full featured port which meets the requirements of the FCC's rules and the Commission's Order.

AT&T

AT&T witness Petzinger testified: Assigning separate costs for individual features is inappropriate. She went on to say:

BellSouth has included some vertical features as if they are separate elements. Vertical services and features are provided via the switch's computer processor. All switches require these processors and, therefore, vertical services and features are an integral part of the switch.

AT&T witness Ellison testified:

Separate and additional charges for switch features are inappropriate and would erect significant barriers to competition. The FCC recognized as much in formulating its network element rules, stating at Paragraph 423 of the FCC's First Report and Order, CC Docket No. 96-98, released August 8, 1996:

We also disagree with the proposal to define local switching as a point of access plus basic switching functionality, but that would exclude vertical switching features. As a legal matter, this definition is inconsistent with the 1996 Act's definition of a network element, which includes all the features, functions, and capabilities that are provided by means of such facility or equipment." In addition, this definition would not fulfill the pro-competitive objectives of the 1996 Act as effectively as the per-line definition we adopt. A competitor that obtains basic and vertical switching features at cost-based rates will have maximum flexibility to distinguish its offerings from those of the incumbent LEC by developing a variety of service packages and pricing plans. Moreover, an up front purchase of all local switching features may speed entry by simplifying practical issues such as the pricing of individual switching features.

AT&T's position is that the cost of vertical services is reflected in the inputs for determining the switching element cost and that BellSouth incurs no further incremental costs for vertical services. Accordingly, AT&T recommends that the Commission adopt a price for the switch port excluding any additional charges for vertical services.

COMMISSION

In paragraph 47 of its Third Report and Order of August 18, 1997, the FCC maintains that a requesting carrier that takes an unbundled local switch must pay for all of the vertical features included in the switch, even if it is unable to sell those vertical features to end user customers. Thus, the FCC's intent is that carriers pay for a full featured port regardless of whether they are able to market the vertical services included with that port. In its April 10, 1998 Further Order on Reconsideration, the Commission concluded:

A...that in all instances where AT&T purchases Unbundled Network Elements from BellSouth, including the local switching element, and itself recombines those Unbundled Network Elements to provide service, AT&T's purchase of the unbundled local switching element (or port) will include all the vertical features and functions of said switch. We note, however, that in determining the appropriate pricing of the unbundled local switching element, all costs specifically applicable to the provision of those vertical features and functions should be included in the cost of the switch.

The Commission's Order with regard to vertical services complies with the FCC's Order and emphasizes that all costs for providing those services will be included in the cost of the switch. Consequently, we are obligated to (1) establish a price for a full featured port, and (2) recognize all costs applicable to the provision of vertical services. This would lead us to adopt BellSouth's recommended price for a port plus the incremental costs for vertical services that can be provided over a two-wire, analog connection. However, we view such pricing as potentially creating a barrier to entry and inefficient for the following:

An ALEC would be in a position of paying for services that it may not be able to market. BellSouth, on the other hand, need only provision itself with those vertical services that the customer requires. In our view, this creates an artificial barrier to competitive entry.

BellSouth's offer to provide a port plus three features of the ALEC's choosing, packaged for the price of three of the highest cost services, could create a situation in which the ALEC is charged for costs that BellSouth may not be incurring (e.g., when the ALEC selects three lower cost services). Our view is that such prices would not comply with the cost based standards of the Act and would create a barrier to effective competition.

The requirement that all vertical features be made available in a full featured port, regardless of whether these services are actually sold by the ALEC, may require BellSouth to make unnecessary investment. We believe these requirements promote inefficiency in the local network.

In paragraph 414 of its First Report and Order, the FCC breached the possibility that the states could consider further unbundling of the local switching element:

AYthe record indicates that the incremental costs associated with vertical switching features on a per-line

basis may be quite small, and may not justify the administrative difficulty for the incumbent LEC or the arbitrator to determine a price for each vertical element. Thus, states can investigate, in arbitration or other proceedings, whether vertical switching features should be made available as separate network elements. We will continue to review and revise our rules in this area as necessary. @

The Eighth Circuit Court's Order opens the door even further for this consideration when it held:

ALikewise, caller I.D., call waiting, and call forwarding are vertical features that are provided through the switching hardware and software that are also used to transmit calls across phone lines. **Thus, they qualify as network elements as well** (emphasis added). @

We believe that the prospects for effective competition in Alabama are enhanced if the local switching element is further unbundled into the switch port and individual vertical service elements. ALECs are then free to choose which elements they require to serve their customers and pay only for the costs that the ILEC incurs in providing the necessary unbundled elements. Access to the Afull featured port@ is retained but without constructing potential barriers to competitive entry that we deem possible when the ALEC is required to purchase all the features. We view the intent and spirit of the Act as pro-competitive and, certainly, this Commission's Orders have reflected a similar intent. We therefore recommend that vertical services be classified as network elements and made available on an unbundled basis from the local switching element. BellSouth will, therefore, be required to provide access to it's switching port (priced absent any vertical services), plus provide access to the available unbundled vertical services of the ALEC's choosing at the prices specified herein. ALEC requests for any vertical services which are not being provided to BellSouth customers served by a particular switch will be made via a Bonafied Request as specified in the terms and conditions of the applicable interconnection agreement, subject to continued oversight by this Commission.

Shared and Common Costs

In describing the TELRIC methodology , the FCC concluded that: AIncumbent LECs= prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs@. The FCC further noted that ADirectly attributable forward-looking costs also include the incremental costs of shared facilities and operations.@ No party in this case disputes the recovery of shared and common costs for interconnection and unbundled network elements. The concern is how much recovery is needed.

BELLSOUTH

BellSouth proposed a common cost factor of 5.39%, which is 30% lower than historical levels. BellSouth stated that its methodology for treating shared and common costs is one that utilizes cost causative principles to develop appropriate shared and common cost factors. The starting point in BellSouth's shared and common costs are the regional BellSouth regulated 1995 expenses and regulated mid-year 1995 investment. The next step in the BellSouth methodology is to develop a projection of expenses and investments for the years 1997-1999. That is accomplished by utilizing 10 months actual costs from 1996, annualizing the amounts and normalizing the annual cost data for unusual events. These 1996 normalized costs are then converted into forward-looking costs by applying forecasted growth factors and, in the case of investment accounts, factors which reflect the relationship of current cost to original book cost.

AT&T

The Hatfield Model incorporated a common cost factor of 10.4% developed from 1994 AT&T embedded operating data on the basis that AT&T is a competitive corporation. AT&T recommends the Commission reject BellSouth's shared and common cost factors on the basis that they reflect costs incurred in BellSouth's embedded network, do not comport with TELRIC principles, and do not make appropriate forward-looking adjustments for even known efficiencies which BellSouth intends to incorporate in its operations going forward. MCI & AT&T both contend that

BellSouth's shared and common cost model does not yield the long-run, shared and common costs of an efficient, forward-looking, least-cost network, is based on embedded costs, and, thus reflects a business as usual for BellSouth. Based on BellSouth's response to a data request, Mr. Lerma further contends that BellSouth applied an inflation and growth rate factor that did not account for any productivity improvements.

COMMISSION

The Commission opines that the shared and common costs should be recovered in the forward-looking unbundled network element rates, in accordance with the TELRIC methodology. The BellSouth common cost factor of 5.39% is significantly lower than the Hatfield Model factor of 10.4%, not considering the different treatment between shared versus common expense accounts in the respective models. Using the methodology employed by AT&T, with BellSouth data, the common cost factor is 9.7% and still lower than the 10.4% incorporated in the Hatfield model. We conclude, therefore, that there is sufficient evidence in the record to support the shared and common calculations proposed by BellSouth and, thus, adopt the shared and common factors as calculated in the BellSouth TELRIC.

Nonrecurring Costs

Nonrecurring costs (NRC) are one-time expenses associated with provisioning, installing and disconnecting the UNE. These expenses consist of service order processing, engineering, connect & test, and technician travel time. The dominant issues, as it relates to NRC, are the appropriate forward-looking network design for modeling labor rates, the extent to which costs are included for testing of UNEs before they are activated and whether the nonrecurring charge for disconnection should be recovered at connection.

BELLSOUTH

With regard to the issue of testing, BellSouth witness Landry testified:

The testing that is done on unbundled network elements (AUNEs) today is reflective of the requirements of that UNE and is done according to nationally recognized standards.

AT&T has requested that BellSouth adhere to strict national and Bellcore standards when activating UNEs. BellSouth strongly objects to turning up services without the appropriate level of service testing. The impact on the end user could be anything from distorted voice patterns to total loss of service functionality in the higher bandwidth service. Before changing even the simplest UNE from BellSouth to an alternative local exchange carrier (AALEC) connection, BellSouth must verify that both dial tones are operational and make sure that the service is functional. BellSouth performs normal industry standard testing required for a specific service level. The costs submitted are reflective of that standard. Attempting to turn up service to an end user without that level of testing would not provide the level of functional assurance that is expected under current industry guidelines.

BellSouth witness Caldwell testified further:

A service order testing was specifically excluded from the recurring costs as described in Section 4 of the study documentation.

With regard to the issue of when disconnection costs should be recovered, Ms. Caldwell testified:

The disconnect cost should be included and collected with the installation costs. Customers are not going to pay to stop using a service. However, BellSouth incurs costs to disconnect the customer. Additionally, the disconnect cost takes into consideration the time value of money so the customer is not being overcharged to disconnect.

She went on to say that:

The BellSouth cost studies reflect a forward-looking, most efficient narrowband voice grade network for Alabama. However, it is a network based on BellSouth approved technologies, not some hypothetical network. This by no means should indicate that BellSouth didn't use the most efficient equipment available. BellSouth Network and purchasing organizations ensure BellSouth is utilizing the most economic equipment and deployment guidelines to provide unbundled network elements.

Integrated digital loop carrier for unbundled network elements is not a viable offering.

AT&T, MCI

ATT/MCI witness Walsh testified:

As a threshold matter, the model develops separate non-recurring costs for migration, installation, and disconnection functions. The cost to disconnect has been modeled separately in order to model accurately an entrant's non-recurring costs, depending on whether the new entrant chooses to disconnect the feature or function at the time an end user cancels service, or maintain the service, feature or function installed for a future customer. By contrast, in the current, non-competitive environment, ILEC connect charges often recover the cost of both the connection and the disconnection.

Unlike BellSouth, AT&T/MCI models nonrecurring costs for disconnection separately from connection. He goes on to explain that the AT&T/MCI NRC Model (NRCM), assumes a low level of testing and that these costs are recovered in BellSouth's recurring rates.

In addition, the NRCM assumes a relatively low level of testing. The NRCM assumes that BellSouth will proactively maintain its network to ensure that it operates properly and provides reliable customer service. Such proactive monitoring of the network is done in order to be aware of potential failures before they occur. In addition, BellSouth must respond to customer generated inquiries about service problems. The NRCM assumes that the costs for both types of testing are recovered in BellSouth's recurring rates.

With regard to the impact on NRC of the assumed forward-looking network design, ATT/MCI witness Hyde testified:

The technology and network architecture assumed impact directly the functional activities assumed and the number of workforce hours necessary to perform the assumed activity.

He went on to testify that BellSouth's model did not reflect the appropriate forward-looking design:

The least cost, most forward looking loop technology for loops longer than 9 Kilofeet is called GR-303 Integrated Digital Loop Carrier ("GR-303 IDLC"). This technology is being deployed by Incumbent Local Exchange Companies (ALECs) nationwide.

COMMISSION

When asked if BellSouth fears that a user who signs up for a service won't pay a disconnect charge when they have dropped the service?, Ms. Caldwell testified:

Yes. That has been the process through which we have identified these costs in the past. Let me state, though, as I think I've said before in answering this question is that we're not opposed to having a disconnect charge, but I have not seen any proposed by any of the ALECs. All we've done is calculate the cost, and then using a discount factor bring it to current dollars. So you're not overpaying, but I mean the reason we've done this is because that's the process we have been accustomed to doing.

We believe it is unreasonable for BellSouth to conclude that ALECs represent the same degree of risk, in terms of non-

payment, as its retail customers. Disconnection of UNEs is, in our view, a routine business activity when alternative providers are available in the local telephone market and does not mean the ALEC is no longer a customer from whom charges may not be recovered. We agree, therefore, with AT&T/MCI that the practice of recovering disconnection charges at the time of connection creates an unnecessary barrier to entry. We conclude that the charge for disconnection should be separate from connection and applied at the time the costs are incurred.

AT&T/MCI witness Walsh testified that no cost was included in their NRC Model for testing of POTS lines. He went on to state:

It's been my experience that when I observe technicians installing POTS type service, they hardly every test the line. They just make the connection and they go about their work in an efficient manner. So if you're saying that our model did not include that type of testing, you're right. @

As referenced by BellSouth's Interconnection Agreement with ACSI, however, the ALECs are requiring that BellSouth perform pre-service testing of lines according to industry standards. We conclude that AT&T/MCI's assumptions regarding testing are wholly unreasonable.

AT&T/MCI witness Hyde testified that their NRC Model assumes a forward-looking network design based on IDLC. We have heretofore concluded, however, that it is not technically feasible for BellSouth to provide DS0 level of service using IDLC. Consequently, we reject AT&T/MCI's NRC Model and accept BellSouth's nonrecurring costs subject to the adjustments for disconnection and other adjustments as referenced herein

Operating Support Systems Costs

Operating Support Systems (OSS) are the electronic, software driven computer programs and databases ILEC's use to manage their pre-ordering, ordering, provisioning, repair, maintenance and billing processes. BellSouth proposes to recover costs for OSS through a one-time nonrecurring charge of \$100 plus a \$50 per month and \$10.80 per electronic order recurring charge.

BELLSOUTH

BellSouth holds that ATT/MCI, through its Nonrecurring Cost Model (NRCM), is attempting to shift the risk of investment onto BellSouth's shoulders when actually the cost causer should be the one to bear the risk. BellSouth witness Caldwell testified that the only OSS costs billed as nonrecurring are the costs for the development of the Electronic Interfaces specifically designed for the ALEC's. All other OSS costs are included in the shared and common factors. BellSouth contends that AT&T/MCI has no basis for assuming that there is presently available an OSS system (Bellcore's Telecommunications Management Network or TMN) for processing UNE orders with little or no manual intervention. According to BellSouth the TMN architecture may some day be realized but is nowhere near being complete development at this point. According to BellSouth witness Caldwell, the ATT/MCI Model Agrossly understates@ the percentage of ALEC orders that will require some manual intervention. The Model assumes a 2% fallout rate based on Southwestern Bell's Easy Access Sales Environment (EASE) system; not the system utilized by BellSouth. BellSouth witness Landry testified that Southwestern Bell Telephone's (SWBT) EASE system is limited to the handling of resale orders. He went on to say that the competitive environment will likely be more error prone due to continuous changes in technology. BellSouth, on the other hand, assumes a fallout rate of 20% based on estimates from its subject matter experts experienced with electronic orders for access service from Interexchange Carriers (IXCs). The 20% fallout rate was derived from an average of three years with an initial year fallout rate of 30% and a rate in the third year of 10%.

AT&T, MCI

ATT/MCI witness Walsh testified that the 20% fallout rate assumed by BellSouth in its NRC Model is invalid because it does not represent efficiently managed and forward looking systems, and, accordingly produces a higher non-recurring cost than should be experienced. The ATT/MCI NRCM assumes a 2% fallout rate based on SWBT's EASE system which applies to total service resale. According to Mr. Walsh, SWBT has indicated that they expect the same

flow-through rate for UNE via other gateway systems in the future.

COMMISSION

AT&T/MCI's 2 percent fallout rate recommendation is based on the experience of an ordering system dedicated to resale:

This system is limited to handling resale orders only and does not handle UNE orders. The fallout currently seen in the access process, which carries comparable levels of technical difficulties as the UNE process, is due to errors submitted by the ALECs.

BellSouth witness Caldwell testified that the Company expects the fallout rate for UNEs to track the experience of interexchange access.

We conclude the fallout rate experienced with SWBT's EASE system for resale orders is not likely to be achieved for the more complicated UNE environment. However, we find it reasonable to assume that BellSouth's experience with interexchange access ordering systems should provide them with the knowledge to avoid the relatively high fallout levels experienced in the infancy of that system. Further, we find that the 10% rate assumed for the third year of using the interexchange access ordering system is a reasonable fall out rate estimate for the UNE electronic ordering system

Interim Number Portability

BELLSOUTH

The BellSouth TELRIC offers two options for porting telephone numbers, Service Provided Number Portability - Remote Call Forwarding (SPNP-RCF) and Service Provided Number Portability - Direct Inward Dialing (SPNP-DID). With the Remote Call Forwarding option, a call to the ALEC's end user goes to the BellSouth central office where it is translated to a number that the ALEC has assigned the customer in the ALEC's central office switch. The call is then forwarded to the new number. With the Direct Inward Dialing option, a call to the ALEC's end user goes to the BellSouth central office where it is routed to a dedicated trunk group. The dialed number is then out pulsed to the ALEC's central office switch where the ALEC translates the number to the subscriber's new number.

SPNP cost components include central office terminations and switching, interoffice trunking, and software. These investment components are then aggregated for each switch type and melded by applying the technology mix percentages. The technology mix is based on the projected network access lines for each switch type. Associated interoffice trunking investments are developed using outputs from the DS1 Channelization Price Calculator, the SS7 Price Calculator and the Unbundled Interoffice Transport - Dedicated - DS1 network element cost study.

In addition to SPNP investments associated with central office switch hardware and interoffice trunking, software is required in the provisioning of SPNP. This software is purchased from the switch vendors by BellSouth through the payment of Right To Use (RTU) fees. These fees are paid on both a per line and a per office basis. The treatment of RTU fees in the SPNP cost studies depends on the anticipated structure of BellSouth's expenditures for RTU fees. Because the projected life of the central office switch is 10 years, these studies amortize RTU fees over 120 months (10 years times 12 months). The annuity is calculated for each central office switch type. The technology mix percentages are then applied to calculate a single RTU fee. (BellSouth cost study)

AT&T

AT&T proposes that there be no charge imposed by either BellSouth or new entrants for interim number portability, consistent with the FCC's Order:

Requiring the new entrants to bear all of the costs, measured on the basis of incremental costs of currently available number portability methods, would not comply with the statutory requirements of section 251(e)(2). Imposing the full incremental cost of number portability solely on new entrants would

contravene the statutory mandate that all carriers share the cost of number portability.@

The FCC concluded that an appropriate charge should be competitively neutral.@ Further, the FCC established two criteria for establishing competitive neutrality. Paragraph 132 of the FCC Order provides that first, a competitively neutral@ cost recovery mechanism should not give one service provider an appreciable incremental cost advantage over another service provider, when competing for a specific subscriber. At paragraph 135 of the FCC Order, the FCC states: the second criterion for a competitively neutral@ cost recovery mechanism is that it should not have a disparate effect on the ability of competing service providers to earn normal returns on their investment.

Within the scope of these guidelines, the FCC suggested several mechanisms that it believed to be consistent with the Act. The suggested mechanisms included: (1) a distribution of costs based upon total working telephone numbers in an area, (2) a distribution of costs based upon total revenues minus carrier to carrier revenues, and (3) Aa mechanism that requires each carrier to pay for its own costs of currently available number portability measures.@ AT&T recommended that this Commission should adopt mechanism three which requires each carrier to pay for its own costs of providing interim local number portability because (1) This action addresses interim number portability - an arrangement that will be obsolete within the 12 to 18 months. (2) The capability of providing interim number portability currently exists in the switching equipment of both the ILECs and the new entrants. No additional investment should be required. (3) It is not likely that a significant amount of revenue would be affected. It is likely that demand for this service will grow slowly as new entrants struggle to find ways to enter the ILEC territories. AT&T suggests that if the Commission elects to adopt a mechanism that requires dollar payments, then it should adopt the following formula used in the New York metropolitan area:

$$\frac{\text{total ported minutes} * (\text{switching} + \text{transport costs})}{\text{total working telephone numbers provided NYNEX}}$$

total working telephone numbers provided NYNEX

The charge per working telephone number times the number of ported telephone numbers used by the new entrant would equal the charge per new entrant. The new entrant would charge the incumbent the same rate for similarly ported numbers. This mechanism will allow each LEC to recover an appropriate portion of the cost that it incurs in providing interim number portability, but it can only be justified if the anticipated dollars changing hands exceed the additional costs of developing and maintaining the mechanism.

COMMISSION

We recognize that number portability is extremely important factor in the success of local competition. However, we conclude that costs such, as investments and right to use fees, are associated with this provisioning. We find, therefore, that BellSouth=s number portability rates, adjusted for other factors included herein, are appropriate.

Collocation

There are two types of collocation B physical and virtual.

Aphysical collocation is nothing more than an arrangement that allows a CLEC to locate its own telecommunications relay rack equipment in a segregated portion of the CO. The CLEC then pays the ILEC for the use of that space within the CO and is provided with the ability to enter the CO to install, repair, and maintain its collocated equipment.@

The Act addresses the duty of ILEC=s to provide collocation:

AThe duty to provide, on rates, terms, and conditions that are just, reasonable, and nondiscriminatory, for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the local exchange carrier, except that the carrier may provide for virtual collocation if the local exchange carrier demonstrates to the State commission that physical collocation is not practical for technical reasons or because of space limitations.@

Unlike other UNEs, the Act does not address pricing standards for collocation. Physical collocation is the preeminent issue in this proceeding. Differences include the forward-looking building layout and design, the appropriate collocation cost model, and assumptions used in the cost study.

Virtual collocation occurs when a CLEC interconnects with the ILEC's network, via trunks, from a location other than the ILEC's central office (CO). For this proceeding:

BellSouth is submitting cost studies for both physical and virtual collocation. Unlike many other elements, however, BellSouth believes existing tariff rates should apply to virtual collocation. These rates have existed in federal tariffs for several years and came under significant scrutiny at the time of their initial filing. As such these rates clearly meet the standards of Section 252(d) of the Act which requires that rates be cost based.

There are, however, several other practical reasons for proposing the existing tariff rates. The Act provides an obligation that LECs offer physical collocation to ALECs. Virtual collocation may be provided only after the LEC has demonstrated to a state commission that physical collocation is not practical for technical reasons or because of space limitations. These requirements are contained in Section 251(c)(6) of the Act. Virtual collocation, therefore, will be the exception rather than the rule.

Conversely, existing interexchange carriers (IXCs) only have virtual collocation available to them and as a practical matter may wish to continue virtual collocation for their combined IXC/ALEC business. It would appear nonsensical to charge the carrier one price for a portion of the virtual collocation space and features and a different rate for others. Further, it would appear somewhat arbitrary to allocate a portion of the space to IXC business and another portion to ALEC business for the sake of applying different rates. The practical effect of establishing different rates is that arbitrage would result in only the lowest rate being charged. @

BellSouth's proposed use of existing federal tariffs for virtual collocation was not a point of contention in these proceedings. Consequently, all subsequent discussion deals exclusively with the issue of physical collocation.

BELLSOUTH

BellSouth assumes modification of existing central office buildings for purposes of developing collocation costs. The study was developed using 1996 TELRIC factors and loadings. Space construction includes contract labor and materials required for 100 square foot

gypsum wall enclosures, including mechanical and electrical equipment. Also included is a dust barrier to protect electronic equipment from dust while construction is in progress. Recurring costs include floor space (per square foot), cable support structure, power (per amp), cross connect equipment, and point of termination (POT) bays. Nonrecurring costs include application costs, space construction, cable installation, cross connects, and security escorts.

According to BellSouth witness Redmond:

All construction is subject to the Americans With Disabilities Act. BellSouth performs all new construction in compliance with the Act. All of BellSouth's public access @ facilities have been brought into compliance. Compliance for all other facilities is done as a result of a handicapped employee reporting to that facility, or as rearrangements occur within a building. A percentage of all construction must go towards compliance. @

Ms. Redmond testified that collocation may dictate requirements to ensure compliance with local building codes and ordinances:

Another example, which BellSouth is experiencing in many areas where physical collocation spaces are being constructed is the situation where the occupancy code of the building has been changed. The local code officials have determined that physical collocation dictates a multi-tenant @ situation. Due to this, protected corridors to each space must be erected and all enclosures must have a one hour fire separation.

This involves gypsum drywall separation from the floor to the roof deck above. All penetrations such as cable racks and HVAC duct work must be appropriately constructed. The HVAC system, fire systems, alarms, environmental controls, etc., must all be reworked. This causes the cost of the project to be increased significantly. @

Additionally, BellSouth's collocation study assesses ALECs demolition costs if modifications are required for existing structures:

AI have previously stated that administrative forces are often moved into Company-owned central offices. Open central office space is converted into administrative space by the addition of carpet, walls, dropped ceilings, lay-in light fixtures, etc. Many of these administrative spaces were later vacated due to down-sizing and centralization. BellSouth does not demolish space as it is vacated by these forces. It is not known if the space will be reused for equipment or personnel needs. It would be ludicrous to spend funds on this effort until the space is needed. If rearrangements / renovations are required as the space is reused for BellSouth entities, the department that is requesting the space provides the necessary funding. It should be no different in the case where a ALEC is the entity requesting the space. @

AT&T, MCI

AT&T/MCI retained Rick Bissell, a telecommunication consultant, for the purposes of developing physical collocation costs:

AI have been retained by MCI Communications Corporation (MCI) and AT&T Corp. (AT&T) to lead a team of subject matter experts in the construction of a technical model of the physical collocation of competitive local exchange carrier (CLEC) equipment in incumbent local exchange carrier (ILEC) COs, in order to identify all ILEC investments needed to provide collocation. The team constructed a forward looking model *central office layout* and a forward looking model *collocation area layout based upon the use of best practice CO space-planning strategies*, efficient suppliers, and competitive processes, and from these *identified all relevant investments* (emphasis added). These investments were provided to the consulting firm of Klick, Kent & Allen to develop collocation cost estimates in the Cost Model @

The first step in AT&T/MCI's collocation study process is the assumption that BellSouth's central offices are constructed using a forward-looking, efficient design. That is, layout is not modeled according to existing building space but in accordance with an urban central office building design typical of construction within the past five years:

AThe CO model layout assumes a *new* (emphasis added) urban CO designed for up to 150,000 lines, together with associated transport, power, multi-media, and miscellaneous equipment space. Such an office would need approximately 36,000 square feet (sq. ft.) of equipment space -- or three equipment floors of about 12,000 sq. ft. (100 ft. x 120 ft.) each -- plus a below-ground cable vault. The CO model layout also assumes an additional 3,000 sq. ft. on each floor and the entire basement (except for the cable vault area) to provide a generous allowance for building support services such as main corridors, elevators, washrooms, lunch rooms, conference facilities, administrative areas, electrical rooms, and mechanical rooms. This results in an overall footprint of 15,000 sq. ft. The best practice CO planning strategy provides adequate space for the long-term requirements associated with a forward-looking, urban CO and is representative of central office layouts that would have been constructed in recent years to accommodate growth in a downtown urban environment. @

The Abest practice@ - planning scenarios for the integration of new equipment in existing COs B was developed by Mr. Bissell while serving as a Central Office Building and Main Distribution Frame (MDF) Planner at Bell Canada. After assuming the model office, Mr. Bissell's team then assumes a forward-looking collocation area layout.

The Model Layout assumes a best practice planning strategy that permits more than one collocation area to be assigned in a CO based on available space in close proximity to ILEC cross-connects. This is in contrast to an arbitrary assumption (sometimes made by the ILECs) that the first collocation area in a CO must be sized to accommodate all potential future CLECs, even when that decision results in placement of the collocation area in a remote location far from the cross-connects. @

A...the collocation area model layout is 550 square feet to take advantage of smaller areas that would be in relatively close proximity to ILEC cross-connects (these pockets of space include those made available by prior replacements of older technologies with more space efficient digital equipment, vacant area, space occupied by administrative staff, or locations occupied by redundant equipment that an efficient ILEC would have removed long ago). This assumption reflects an expectation by the model layout developers that, in terms of placement, the ILEC would employ the same best planning process that it would use when planning efficient equipment space allocations for its own equipment. @

Having constructed the model CO and collocation space layouts, Mr. Bissell then estimated collocation investment components.

We estimated investments associated with the following:

- overhead common systems infrastructure (cable racks, cable, etc.);

- power delivery, including backup capability;

- power consumption;

- equipment grounding;

- entrance fiber (bringing the CLEC's fiber from the manhole to the collocation space);

- copper connectivity between the collocation space and the cross-connects at the voice grade level;

- copper connectivity between the collocation space and the cross-connects at the DS-1 level (estimated separately using DSX and DCS technology);

- copper connectivity between the collocation space and the cross-connects at the DS-3 level (estimated separately using DSX and DCS technology);

- construction elements associated with building the cage and maintaining the environment in the cage (partitioning, floor covering, electrical distribution panel, HVAC, lighting);

- land and building.

- manpower resources to plan both the entire 550 square foot collocation area and each collocation request within that area; and

- security.

The general methodology used was as follows:

- Identify, end to end, all the specific elements needed to provide the components. (See, for example, the following chart depicting the end-to-end requirements for power delivery. Similar charts are provided in the White Paper for each investment component.)

- Obtain quotes (in hours or dollars, as appropriate) for the engineering, furnishing, and installation of these elements.

Based on the judgment of the subject matter experts, select the quotes to use as input values and calculate the investment costs.@

In addition, Mr. Bissell added costs for heating, ventilation, and air conditioning (HVAC), floor covering, security and other items typically associated with building space using R.S. Means B a sourcebook relied upon throughout the industry for construction estimates.

The AT&T/MCI collocation cost study assumes full regulatory compliance with all necessary building codes and, therefore does not include additional costs for modifying any specific portion of the building for collocation; such as external entrances and security equipment. Collocation space is assumed separated using wire mesh cages instead of gypsum board with the full cost of construction recovered through a recurring rather than a nonrecurring charge.

COMMISSION

BellSouth witness Varner testified:

ATestimony filed by opposing parties proposes that the appropriate costing methodology for collocation should be based on a hypothetical Central Office building designed so that collocators would always be physically located in close proximity to BellSouth=s main frame. There is absolutely no basis in the Act or in the FCC Rules to support this methodology.

When intervenors collocate, they will do so in existing buildings and use space where it is available in those buildings. They will not be collocated in their hypothetical building. Even though they want to act as if the existing building has been demolished, they include no provisions for recovering the remaining costs of the existing building or demolishing it. In fact, the methodology proposed by the intervenors is contrary to the requirements of the Act because the Act specifically states that physical collocation is to be provided at the premises of the local exchange carrier. It is ludicrous to propose that the appropriate costing methodology for collocation would ignore the incumbent=s current central office configurations.@

There have not been any new urban central offices built in Alabama in over five years. We concur with BellSouth, that competitors will collocate in existing buildings and not a hypothetical building that has no basis in reality.

AT&T/MCI witness Bissell testified:

AThe model layouts generate investments necessary for the provision of collocation, but not for building modifications an ILEC would have to undertake just to bring space in the CO up to the level needed to house equipment. For example, our model incorporates the appropriate share of costs associated with meeting all regulatory requirements by including in the building cost per square foot used in the investment calculation the costs associated with full regulatory compliance. But it does not add to those costs any special costs associated with bringing a particular building or portion of a building to compliance. Building modifications to remove unused equipment also are not included as they represent additional costs to make a specific building space up to standard. Also, building modifications allegedly required to provide a "secure environment," such as the addition of costly new external entrances, are not included because they are not part of a cost efficient, forward looking solution to security problems@

We find that AT&T/MCI=s Collocation Model does not adequately address specific local building codes or requirements for secure entrances/exits in the portion of the building used for collocation. We conclude that BellSouth=s collocation cost study best reflects the collocation costs that can reasonably be expected and adopt BellSouth=s collocation prices.

UNE PRICES

We recommend the adoption of the UNE prices included in Attachments:

A (Recurring Prices),

B (Nonrecurring Connection Prices),

C (Nonrecurring Disconnection Prices).

Respectfully submitted this 25th day of August 1998.

The BellSouth/AT&T TELRIC
Study Team

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Cost	
<u>Element</u>	
A.0	UNBUNDLED L
A.1	2-WIRE ANALOG VOICE G
A.1.1	2-Wire Analog Voice Grade Loop - S
A.1.2	2-Wire Analog Voice Grade Loop - S
A.1.3	2-Wire Analog Voice Grade Loop - Service Level 1 - Manual Order

A.1.4	2-Wire Analog Voice Grade Loop - Service Level 1 - Order Coordination for Specified Cor
A.1.5	2-Wire Analog Voice Grade Loop - Service Level 2 - Order Coordination for Specified Cor
A.2	SUB-LOOP 2-WIRE ANALOG VOICE GRADE LOOP - Order Coordination for Specified Cor
A.2.6	NID Per 2-Wire Analog Voice Grade Loop - Order Coordination for Specified Cor
A.3	LOOP CHANNELIZATION AND CO INTERFACE
A.3.1	Loop Channelization System - Digital
A.3.2	CO Channel Interface--2-Wire
A.3.3	Loop Concentration - Channelization System - Incremental Cost - Manual Svc Order
A.4	4-WIRE ANALOG VOICE GRADE LOOP - Order Coordination for Specified Cor
A.4.1	4-Wire Analog Voice Grade Loop - Order Coordination for Specified Cor
A.4.2	NID Per 4-Wire Analog Voice Grade Loop - Order Coordination for Specified Cor
A.4.3	4-Wire Analog Voice Grade Loop - Order Coordination for Specified Cor
A.5	2-WIRE ISDN DIGITAL GRADE LOOP - Order Coordination for Specified Cor
A.5.1	2-Wire ISDN Digital Grade Loop - Order Coordination for Specified Cor
A.5.2	NID Per 2-Wire ISDN Digital Grade Loop - Order Coordination for Specified Cor
A.5.3	2-Wire ISDN Digital Grade Loop - Order Coordination for Specified Cor
A.6	2-WIRE ASYMMETRICAL DIGITAL SUBSCRIBER LINE (ADSL) COMPACT LOOP - Order Coordination for Specified Cor
A.6.1	2-Wire Asymmetrical Digital Subscriber Line (ADSL) Compact Loop - Order Coordination for Specified Cor
A.6.2	NID Per 2-Wire Asymmetrical Digital Subscriber Line Compact Loop - Order Coordination for Specified Cor
A.6.3	2-Wire ADSL Loop - Order Coordination for Specified Cor
A.7	2-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMPACT LOOP - Order Coordination for Specified Cor
A.7.1	2-Wire High Bit Rate Digital Subscriber Line (HDSL) Compact Loop - Order Coordination for Specified Cor
A.7.2	NID Per 2-Wire High Bit Rate Digital Subscriber Line Compact Loop - Order Coordination for Specified Cor
A.7.3	2-Wire HDSL Loop - Order Coordination for Specified Cor
A.8	4-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMPACT LOOP - Order Coordination for Specified Cor
A.8.1	4-Wire High Bit Rate Digital Subscriber Line (HDSL) Compact Loop - Order Coordination for Specified Cor
A.8.2	NID Per 4-Wire High Bit Rate Digital Subscriber Line Compact Loop - Order Coordination for Specified Cor
A.8.3	4-Wire HDSL Loop - Order Coordination for Specified Cor

A.9	4-WIRE DS1 DIG
A.9.1	4-Wire DS1
A.9.2	4-Wire DS1 Loop - Incremental Cost - Manual Svc Order
A.9.3	4-Wire DS1 Loop - Order Coordination for Specified Cor
A.10	4-WIRE 56 OR 64 KBPS DIGITAL G
A.10.1	4-Wire 56 or 64 Kbps Digita
A.10.2	NID Per 4-Wire 56 or 64 Kbps Digita
A.10.3	4-Wire 56 or 64 Kbps Digital Grade Loop - Order Coordination for Specified Cor
A.11	Unbundled Loops - Incremental Cost - Manual Svc Order
A.11.1	Unbundled 2-Wire Loops - Incremental Cost - Manual Svc Order
A.11.2	Unbundled 4-Wire Loops (Excluding DS1) - Incremental Cost - Manual Svc Order
A.11.3	NID Per 2-Wire Loops - Manual Svc Order
A.11.4	NID Per 4-Wire Loops - Manual Svc Order
B.0	UNBUNDLED LOCAL EXCHANGE PORTS AND
B.1	EXCHA
B.1.1	Exchange Ports - 2-Wire Analog Line Po
B.1.5	Exchange Ports - 2-W
B.1.6	Exchange Ports - 4-Wire IS
B.1.7	Exchange Ports - 2-Wire Analog Lin
B.1.8	Exchange Ports - 4-Wire Analc
B.1.9	Exchange Ports - 2-Wire Analog Line Port (Res., Bus.) - Incremental Cost - Manual Svc Order
B.1.13	Exchange Ports - 2-Wire ISDN Port - Incremental Cost - Manual Svc Order
B.1.14	Exchange Ports - 4-Wire ISDN DS1 Port - Incremental Cost - Manual Svc Order
B.1.15	Exchange Ports - 2-Wire Analog Line Port (PBX) - Incremental Cost - Manual Svc Order
B.1.16	Exchange Ports - Coin Port - Incremental Cost - Manual Svc Order
B.2	
B.2.1	Three
B.2.2	Cust. Changeable
B.2.3	
B.2.4	Remote Activation of Ca
B.2.5	Cance

B.2.6	Auton
B.2.7	Aut
B.2.8	Calling Nur
B.2.9	Calling Number Deli
B.2.10	Customer Ori
B.2.11	Selective C
B.2.12	Selective Ca
B.2.13	Selective Ca
B.2.14	(Reserved fo
B.2.15	Multiline
B.2.16	Call Forwar
B.2.17	Call Forwardi
B.2.18	Call Forwarding Don't Ans
B.2.19	Remote Ca
B.2.20	
B.2.21	
B.2.22	Toll Rest
B.2.23	Msg. Waiting Indic. - Stu
B.2.24	Anonymous C
B.2.25	Shared Call Appeara
B.2.26	Multiple Call
B.2.27	ISDN Bridged C
B.2.28	Call b
B.2.29	Pr
B.2.30	Multi Appearance Directory
B.2.31	M
B.2.32	Teen Service (Res. Dist. .
B.2.33	Code Restriction .
B.2.34	
B.2.35	A
B.2.36	ISDN Message Waiting Inc
B.2.37	ISDN Feature Fur
B.2.38	(Reserved fo

B.2.39	Subsequent Ordering Charge
B.2.40	Subsequent Ordering Charge - Incremental Cost - Manual Svc Order
C.0	UNBUNDLED SWITCHING AND LOCAL INTEROFFICE TRANSPORT
C.1	LOCAL SWITCHING
C.1.1	End Office Switching Function - Incremental Cost - Manual Svc Order
C.1.2	End Office Interoffice Trunk Port - Shared - Incremental Cost - Manual Svc Order
C.2	TANDEM SWITCHING
C.2.1	Tandem Switching Function - Incremental Cost - Manual Svc Order
C.2.2	Tandem Interoffice Trunk Port - Shared - Incremental Cost - Manual Svc Order
D.0	UNBUNDLED TRANSPORT AND LOCAL INTEROFFICE TRANSPORT
D.1	COMMON TRANSPORT
D.1.1	Common Transport - Per Minute - Incremental Cost - Manual Svc Order
D.1.2	Common Transport - Facilities Termination - Incremental Cost - Manual Svc Order
D.2	INTEROFFICE TRANSPORT - DEDICATED - VOICE GRADE
D.2.1	Interoffice Transport - Dedicated - 2-Wire Voice Grade - Incremental Cost - Manual Svc Order
D.2.2	Interoffice Transport - Dedicated - 2- Wire Voice Grade - Facility Termination - Incremental Cost - Manual Svc Order
D.2.3	Interoffice Transport - Voice Grade - Incremental Cost - Manual Svc Order
D.3	INTEROFFICE TRANSPORT - DEDICATED - DS0
D.3.1	Interoffice Transport - Dedicated - DS0 - Incremental Cost - Manual Svc Order
D.3.2	Interoffice Transport - Dedicated - DS0 - Facility Termination - Incremental Cost - Manual Svc Order
D.3.3	Interoffice Transport - DS0 - Incremental Cost - Manual Svc Order
D.4	INTEROFFICE TRANSPORT - DEDICATED - DS1
D.4.1	Interoffice Transport - Dedicated - DS1 - Incremental Cost - Manual Svc Order
D.4.2	Interoffice Transport - Dedicated - DS1 - Facility Termination - Incremental Cost - Manual Svc Order
D.4.3	Interoffice Transport - DS1 - Incremental Cost - Manual Svc Order
D.5	LOCAL CHANNEL - DEDICATED
D.5.1	Local Channel - Dedicated - 2-Wire - Incremental Cost - Manual Svc Order
D.5.2	Local Channel - Dedicated - 4-Wire - Incremental Cost - Manual Svc Order

D.5.3	Local Channel - De
D.5.4	Local Channel - Dedicated - 2Wire Voice Grade - Incremental Cost - Manual Svc Order
D.5.5	Local Channel - Dedicated - 4Wire Voice Grade - Incremental Cost - Manual Svc Order
D.5.6	Local Channel - Dedicated - DS1 -Incremental Cost - Manual Svc Order
E.0	SIGNALING NETWORK, DATA BASES, & SERVICE MANAGI
E.1	800 ACCESS TEN DIGIT
E.1.1	800 Access Ten Digit Scree
E.1.2	800 Access Ten Digit Screening, Reservation Charge Per 800 Nun
E.1.3	800 Access Ten Digit Screening, Per 800 # Established W/O POT
E.1.4	800 Access Ten Digit Screening, Per 800 # Established With POT
E.1.5	800 Access Ten Digit Screening, Customized Area of Service Pe
E.1.6	800 Access Ten Digit Screening, Multiple InterLATA CXR Routing Per CXR Reques
E.1.7	800 Access Ten Digit Screening, Change Charg
E.1.8	800 Access Ten Digit Screening, Call Handling and Destin
E.1.9	800 Access Ten Digit Scrng, Reserv Chrg Per 800 # Reserved-Incrm Cost-Manual Svc Order
E.1.10	800 Access Ten Digit Scrng, Per 800 # Est'd w/o POTS Transl.-Incrm Cost-Manual Svc Order
E.1.11	800 Access Ten Digit Scrng, Per 800 # Est'd w/ POTS Transl.-Incrm Cost-Manual Svc Order
E.1.12	800 Access Ten Digit Scrng, Chng Chrg/Request-Incrm Cost-Manual Svc Order
E.2	LINE INFORMATION DATA BASE AC
E.2.1	LIDB Common Transp
E.2.2	LIDB Validat
E.2.3	LIDB Originating Point Code Establishm
E.2.4	LIDB - Incremental Cost - Manual Svc Order
E.3	CCS7 SIGNALING T
E.3.1	CCS7 Signaling Connection, Per 56
E.3.2	CCS7 Signaling Termination,
E.3.3	CCS7 Signaling Usage, Per Call S
E.3.4	CCS7 Signaling Usage, Per T
E.3.5	CCS7 Signaling Usage Surrogate, Per 56Kbps Facility, Per LAT
E.3.6	CCS7 - Incremental Cost - Manual Svc Order
F.0	OPERATIONAL SUPPORT

F.1	OPERATIONAL SUPPORT
F.1.1	OSS Electronic Interface
F.1.2	OSS OLEC Daily Usage File: Recording
F.1.3	OSS OLEC Daily Usage File: Message Distribution
F.1.4	OSS OLEC Daily Usage File: Message Distribution, Per Magnetic Tap
F.1.5	OSS OLEC Daily Usage File: Data Transmission (CONNECT:DIRECT)
G.0	OPERATOR SERVICES AND DIRECTORY ASSISTANCE
G.1	OPERATOR CALL PROCESSING
G.1.1	Oper. Call Processing - Oper. Provided Cost Per Min. - Using 1
G.1.2	Oper. Call Processing - Oper. Provided Cost Per Min. - Using 1
G.1.3	Oper. Call Processing - Fully Automated Cost per Call - Using 1
G.1.4	Oper. Call Processing - Fully Automated Cost per Call - Using 1
G.1.5	Loading Expense Per Announcement For Branded A
G.1.6	Recording Expense Per Announcement For Branded A
G.2	INWARD OPERATOR SERVICES
G.2.1	Inward Operator Services - Verification
G.2.2	Inward Operator Services - Verification and Emergency Interrup
G.3	DIRECTORY ASSISTANCE CALL COMPLETION ACCESS SERVICE
G.3.1	Directory Assistance Call Completion Access Service (DACC), Per
G.4	NUMBER SERVICES INTERCEPT ACCESS SERVICE
G.4.1	Number Services Intercept Access Service (NSIAS), Per
G.5	DIRECTORY ASSISTANCE ACCESS SERVICE
G.5.1	Directory Assistance Access Service Calls, Per
G.5.2	Loading Expense Per Announcement For Branded A
G.5.3	Recording Expense Per Announcement For Branded A
G.6	DIRECTORY TRANSPORT
G.6.1	Directory Transport - Local
G.6.2	Directory Transport - DS1 Level Interoffice
G.6.3	Directory Transport - DS1 Level Interoffice Per Facility

G.6.4	Switched Common Transport Per DA Access Se
G.6.5	Switched Common Transport Per DA Access Service Per
G.6.6	Access Tandem Switching Per DA Access Se
G.6.7	Directory Transport - DA Interconnection Per DA
G.6.8	Directory Transport - Installation NRC, Per Trunk or Signalin
G.6.9	Directory Transport Local Channel DS1 - Incremental Cost - Manual Service Order
G.6.10	Directory Transport Interoffice DS1 - Incremental Cost - Manual Service Order
G.7	DIRECTORY ASSISTANCE DATA BASE SERV
G.7.1	Directory Assistance Data Base Service Co
G.7.2	Directory Assistance Data Base Service, Monthly R
G.8	DIRECT ACCESS TO DIRECTORY A
G.8.1	Direct Access to Directory Assistance Servi
G.8.2	Direct Access to Directory Assistance Servi
G.8.3	Direct Access to Directory Assistance Service, Service Establis
G.9	SELECTIVE ROUTING (INTERIM SOLUTION LINE CL
G.9.1	Selective Routing Per Unique Line Class Code Per Reque
G.9.2	Selective Routing - Incremental Cost - Manual Svc Order
H.0	CO
H.1	PHYSICAL CO
H.1.1	Physical Collocation - Ap
H.1.2	Physical Collocation - Spa
H.1.3	Physical Collocation - Space Construction Cost Per Fi
H.1.4	Physical Collocation - Space Construction Cost Per A
H.1.5	Physical Collocation - Cable Installation C
H.1.6	Physical Collocation - Floor Spa
H.1.7	Physical Collocation - Cable Support Structure, Per E
H.1.8	Physical Collocation - Powe
H.1.9	Physical Collocation - 2-wire C
H.1.10	Physical Collocation - 4-wire C
H.1.11	Physical Collocation - DS1 C
H.1.12	Physical Collocation - DS3 C

H.1.13	Physical Collocation - 2-V
H.1.14	Physical Collocation - 4-V
H.1.15	Physical Collocation - I
H.1.16	Physical Collocation - I
H.1.17	Physical Collocation - Security Escort - Basic,
H.1.18	Physical Collocation - Security Escort - Overtime,
H.1.19	Physical Collocation - Security Escort - Premium,
H.1.20	Physical Collocation - 2-Wire Cross Connects - Incremental Cost - Manual Svc Order
H.1.21	Physical Collocation - 4-Wire Cross Connects - Incremental Cost - Manual Svc Order
H.1.22	Physical Collocation -DS1/DS3 Cross Connects - Incremental Cost - Manual Svc Order
H.2	VIRTUAL CO
Virtual Collocation prices are based on BellSouth Interstate Access Tariff - FCC #	
I.1	SERVICE PROVIDER NUMBER PORTAE
I.1.1	Service Provider Number Portability - RCF, Per N
I.1.2	Service Provider Number Portability - RCF, Per A
I.1.3	Service Provider Number Portability - RCF, Per Service Order
I.2	SERVICE PROVIDER NUMBER PORTAE
I.2.1	Service Provider Number Portability - DID, Per Number Port
I.2.2	Service Provider Number Portability - DID, Per Number Po
I.2.3	Service Provider Number Portability - DID, Per Service Order
I.2.4	Service Provider Number Portability - DID, Per Trunk Term
I.2.5	Service Provider Number Portability - DID, Per Trunk Terminatio
I.3	Service Provider Number Portability - Manual Svc Order
I.3.1	Service Provider Number Portability - Incremental Cost - Manual Svc Order
J.0	
J.1	I
J.1.1	Dark Fiber, Per Four Fiber Strands, Per Route Mile or Fra
J.2	ACCESS TO POLES, DUCTS, CONDUITS AND RIGH
J.2.1	Access to Poles Per Pole, Per I

J.2.2	Access to Conduits, Per F
J.2.3	Access to Innerduct, Per F
K.0	ADVANCED INTELLIGENT NETWORK (AIN)
K.1	BellSouth AIN SMS A
K.1.1	AIN SMS Access Service - Service Establishment, Per State
K.1.2	AIN SMS Access Service - Port Connection - Dial/S
K.1.3	AIN SMS Access Service - Port Connection -
K.1.4	AIN SMS Access Service - User Identification Codes - Per
K.1.5	AIN SMS Access Service - Security Card, Per User ID Code, Initial or
K.1.6	AIN SMS Access Service - Storage, Per Unit (1
K.1.7	AIN SMS Access Service - Sessio
K.1.8	AIN SMS Access Service - Company Performed Sessio
K.2	BellSouth AIN T
K.2.1	AIN Toolkit Service - Service Establishment Charge, Per State
K.2.2	AIN Toolkit Service - Training Session,
K.2.3	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, T
K.2.4	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, Of
K.2.5	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, Off-Ho
K.2.6	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, 10
K.2.7	AIN Toolkit Service - Trigger Access Charge, Per Trigger,
K.2.8	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN,
K.2.9	AIN Toolkit Service - Query Char
K.2.10	AIN Toolkit Service - Type 1 Node Charge, Per AIN Toolkit Subscription, Per No
K.2.11	AIN Toolkit Service - SCP Storage Charge, Per SMS Access Account, Per
K.2.12	AIN Toolkit Service - Monthly report - Per AIN Toolkit Service
K.2.13	AIN Toolkit Service - Special Study - Per AIN Toolkit Service
K.2.14	AIN Toolkit Service - Call Event Report - Per AIN Toolkit Service
K.2.15	AIN Toolkit Service - Call Event Special Study - Per AIN Toolkit Service
Cost	
<u>Element</u>	
A.0	UNBUNDLED

A.1	2-WIRE ANALOG VOICE
A.1.1	2-Wire Analog Voice Grade Loop -
A.1.2	2-Wire Analog Voice Grade Loop -
A.1.3	2-Wire Analog Voice Grade Loop - Service Level 1 - Manual Ord
A.1.4	2-Wire Analog Voice Grade Loop - Service Level 1 - Order Coordination for Specified C
A.1.5	2-Wire Analog Voice Grade Loop - Service Level 2 - Order Coordination for Specified C
A.2	SUB-LOOP 2-W
A.2.6	NID Per 2-Wire Analog Vo
A.3	LOOP CHANNELIZATION AND CO INTERFAC
A.3.1	Loop Channelization System - Digi
A.3.2	CO Channel Interface--2-W
A.3.3	Loop Concentration - Channelization System - Incremental Cost - Manual Svc Ord
A.4	4-WIRE ANALOG VOICE
A.4.1	4-Wire Analog Vo
A.4.2	NID Per 4-Wire Analog Vo
A.4.3	4-Wire Analog Voice Grade Loop - Order Coordination for Specified C
A.5	2-WIRE ISDN DIGITAL
A.5.1	2-Wire ISDN Dig
A.5.2	NID Per 2-Wire ISDN Dig
A.5.3	2-Wire ISDN Digital Grade Loop - Order Coordination for Specified C
A.6	2-WIRE ASYMMETRICAL DIGITAL SUBSCRIBER LINE (ADSL) COMP
A.6.1	2-Wire Asymmetrical Digital Subscriber Line (ADSL) C
A.6.2	NID Per 2-Wire Asymmetrical Digital Subscriber Lin
A.6.3	2-Wire ADSL Loop - Order Coordination for Specified C
A.7	2-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMP
A.7.1	2-Wire High Bit Rate Digital Subscriber Line (HDSL) C
A.7.2	NID Per 2-Wire High Bit Rate Digital Subscriber Lin
A.7.3	2-Wire HDSL Loop - Order Coordination for Specified C
A.8	4-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMP

A.8.1	4-Wire High Bit Rate Digital Subscriber Line (HDSL) C
A.8.2	NID Per 4-Wire High Bit Rate Digital Subscriber Lin
A.8.3	4-Wire HDSL Loop - Order Coordination for Specified C
A.9	4-WIRE DS1 L
A.9.1	4-Wire D
A.9.2	4-Wire DS1 Loop - Incremental Cost - Manual Svc Ord
A.9.3	4-Wire DS1 Loop - Order Coordination for Specified C
A.10	4-WIRE 56 OR 64 KBPS DIGITAL
A.10.1	4-Wire 56 or 64 Kbps Dig
A.10.2	NID Per 4-Wire 56 or 64 Kbps Dig
A.10.3	4-Wire 56 or 64 Kbps Digital Grade Loop - Order Coordination for Specified C
A.11	Unbundled Loops - Incremental Cost - Manual Svc Ord
A.11.1	Unbundled 2-Wire Loops - Incremental Cost - Manual Svc Ord
A.11.2	Unbundled 4-Wire Loops (Excluding DS1) - Incremental Cost - Manual Svc Ord
A.11.3	NID Per 2-Wire Loops - Manual Svc Ord
A.11.4	NID Per 4-Wire Loops - Manual Svc Ord
B.0	UNBUNDLED LOCAL EXCHANGE PORTS AN
B.1	EXCH
B.1.1	Exchange Ports - 2-Wire Analog Line l
B.1.5	Exchange Ports - 2-
B.1.6	Exchange Ports - 4-Wire
B.1.7	Exchange Ports - 2-Wire Analog l
B.1.8	Exchange Ports - 4-Wire An
B.1.9	Exchange Ports - 2-Wire Analog Line Port (Res., Bus.) - Incremental Cost - Manual Svc Ord
B.1.13	Exchange Ports - 2-Wire ISDN Port - Incremental Cost - Manual Svc Ord
B.1.14	Exchange Ports - 4-Wire ISDN DS1 Port - Incremental Cost - Manual Svc Ord
B.1.15	Exchange Ports - 2-Wire Analog Line Port (PBX) - Incremental Cost - Manual Svc Ord
B.1.16	Exchange Ports - Coin Port - Incremental Cost - Manual Svc Ord
B.2	
B.2.1	Th

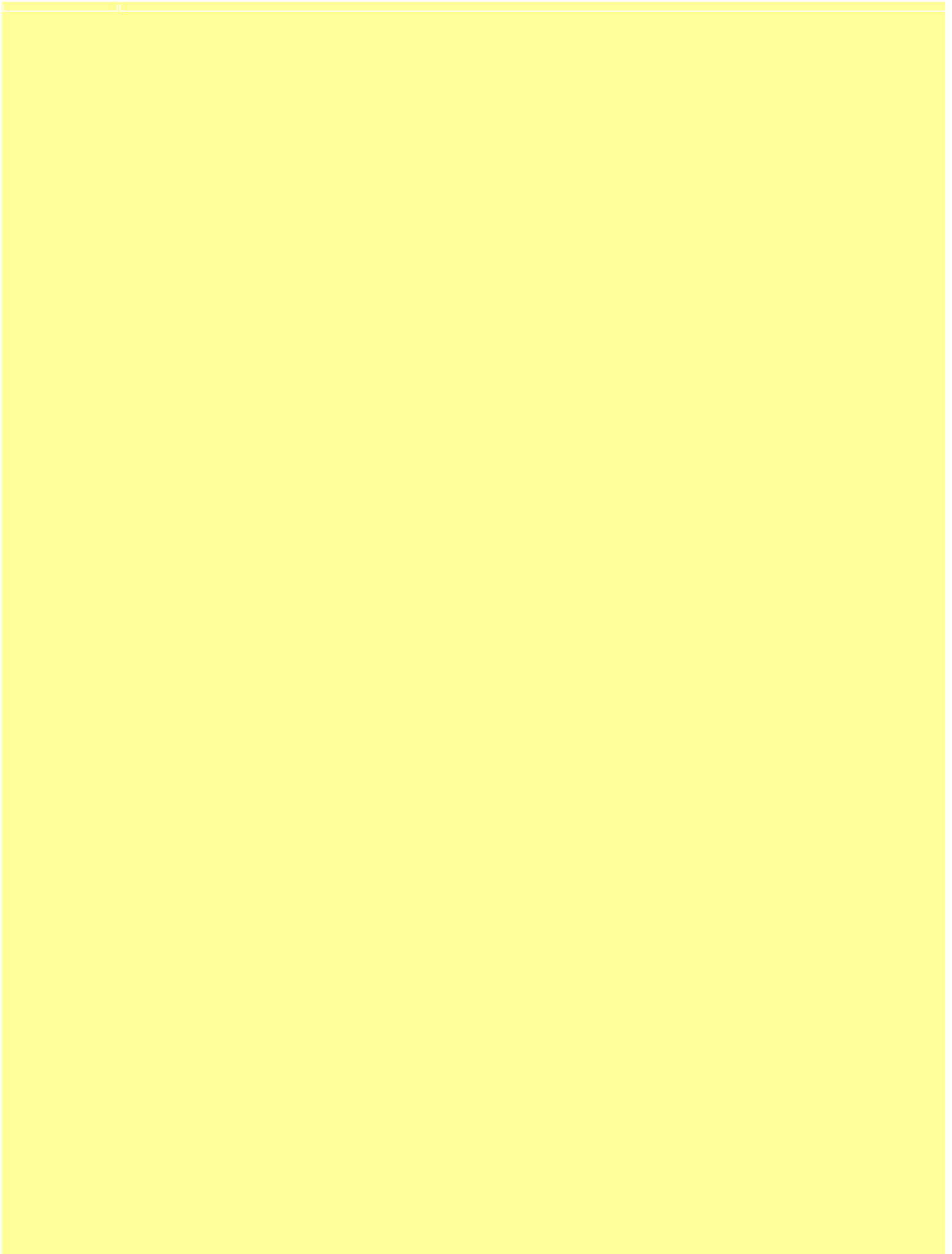
B.2.2	Cust. Changeabl
B.2.3	
B.2.4	Remote Activation of C
B.2.5	Can
B.2.6	Aut
B.2.7	A
B.2.8	Calling N
B.2.9	Calling Number De
B.2.10	Customer C
B.2.11	Selectiv
B.2.12	Selective C
B.2.13	Selective C
B.2.15	Multili
B.2.16	Call Forw
B.2.17	Call Forwa
B.2.18	Call Forwarding Don't A
B.2.19	Remote C
B.2.20	
B.2.21	
B.2.22	Toll Re
B.2.23	Msg. Waiting Indic. - S
B.2.24	Anonymou
B.2.25	Shared Call Appe
B.2.26	Multiple C
B.2.27	ISDN Bridge
B.2.28	Cal
B.2.29	
B.2.30	Multi Appearance Director
B.2.31	
B.2.32	Teen Service (Res. Dis
B.2.33	Code Restrictio
B.2.34	
B.2.35	
B.2.36	ISDN Message Waiting I
B.2.37	ISDN Feature F

B.2.39	Subsequent Ordering Charge - Incremental Cost - Manual Svc Ord
B.2.40	Subsequent Ordering Charge - Incremental Cost - Manual Svc Ord
D.0	UNBUNDLED TRANSPORT AND LOCAL INTEROFFICE TRANSPORT
D.2	INTEROFFICE TRANSPORT - DEDICATED - 2-WIRE VOICE GRADE
D.2.2	Interoffice Transport - Dedicated - 2- Wire Voice Grade - Incremental Cost - Manual Svc Ord
D.2.3	Interoffice Transport - Voice Grade - Incremental Cost - Manual Svc Ord
D.3	INTEROFFICE TRANSPORT - DEDICATED - DS0
D.3.2	Interoffice Transport - Dedicated - DS0 - Incremental Cost - Manual Svc Ord
D.3.3	Interoffice Transport - DSO - Incremental Cost - Manual Svc Ord
D.4	INTEROFFICE TRANSPORT - DEDICATED - DS1
D.4.2	Interoffice Transport - Dedicated - DS1 - Incremental Cost - Manual Svc Ord
D.4.3	Interoffice Transport - DS1 - Incremental Cost - Manual Svc Ord
D.5	LOCAL CHANNEL
D.5.1	Local Channel - Dedicated - 2-Wire Voice Grade - Incremental Cost - Manual Svc Ord
D.5.2	Local Channel - Dedicated - 4-Wire Voice Grade - Incremental Cost - Manual Svc Ord
D.5.3	Local Channel - Dedicated - DS1 - Incremental Cost - Manual Svc Ord
D.5.4	Local Channel - Dedicated - 2Wire Voice Grade - Incremental Cost - Manual Svc Ord
D.5.5	Local Channel - Dedicated - 4Wire Voice Grade - Incremental Cost - Manual Svc Ord
D.5.6	Local Channel - Dedicated - DS1 -Incremental Cost - Manual Svc Ord
E.0	SIGNALING NETWORK, DATA BASES, & SERVICE MANAGEMENT
E.1	800 ACCESS TEN DIGIT SCREENING
E.1.2	800 Access Ten Digit Screening, Reservation Charge Per 800 Number
E.1.3	800 Access Ten Digit Screening, Per 800 # Established W/O PO
E.1.4	800 Access Ten Digit Screening, Per 800 # Established With PO
E.1.5	800 Access Ten Digit Screening, Customized Area of Service
E.1.6	800 Access Ten Digit Screening, Multiple InterLATA CXR Routing Per CXR Request
E.1.7	800 Access Ten Digit Screening, Change Charge
E.1.8	800 Access Ten Digit Screening, Call Handling and Destination
E.1.9	800 Access Ten Digit Scrng, Reserv Chrg Per 800 # Reserved-Incrm Cost-Manual Svc Ord

E.1.10	800 Access Ten Digit Scrng, Per 800 # Est'd w/o POTS Transl.-Incrm Cost-Manual Svc Ord
E.1.11	800 Access Ten Digit Scrng, Per 800 # Est'd w/ POTS Transl.-Incrm Cost-Manual Svc Ord
E.1.12	800 Access Ten Digit Scrng, Chng Chrg/Request-Incrm Cost-Manual Svc Ord
E.2	LINE INFORMATION DATA BASE A
E.2.3	LIDB Originating Point Code Establish
E.2.4	LIDB - Incremental Cost - Manual Svc Ord
E.3	CCS7 SIGNALING
E.3.1	CCS7 Signaling Connection, Per
E.3.6	CCS7 - Incremental Cost - Manual Svc Ord
F.0	OPERATIONAL SUPPO
F.1	OPERATIONAL SUPPO
F.1.1	OSS Electronic Inte
G.0	OPERATOR SERVICES AND DIRECTORY
G.1	OPERATOR CALL
G.1.5	Loading Expense Per Announcement For Branded
G.1.6	Recording Expense Per Announcement For Branded
G.5	DIRECTORY ASSISTANCE ACC
G.5.2	Loading Expense Per Announcement For Branded
G.5.3	Recording Expense Per Announcement For Branded
G.6	DIRECTORY
G.6.1	Directory Transport - Loc
G.6.3	Directory Transport - DS1 Level Interoffice Per Faci
G.6.8	Directory Transport - Installation NRC, Per Trunk or Signa
G.6.9	Directory Transport Local Channel DS1 - Incremental Cost - Manual Service Ord
G.6.10	Directory Transport Interoffice DS1 - Incremental Cost - Manual Service Ord
G.8	DIRECT ACCESS TO DIRECTORY
G.8.3	Direct Access to Directory Assistance Service, Service Establ

G.9	SELECTIVE ROUTING (INTERIM SOLUTION LINE C
G.9.1	Selective Routing Per Unique Line Class Code Per Rec
G.9.2	Selective Routing - Incremental Cost - Manual Svc Ord
H.0	C
H.1	PHYSICAL C
H.1.1	Physical Collocation - /
H.1.5	Physical Collocation - Cable Installatio
H.1.9	Physical Collocation - 2-wire
H.1.10	Physical Collocation - 4-wire
H.1.11	Physical Collocation - DS1
H.1.12	Physical Collocation - DS3
H.1.17	Physical Collocation - Security Escort - Basic
H.1.18	Physical Collocation - Security Escort - Overtime
H.1.19	Physical Collocation - Security Escort - Premium
H.1.20	Physical Collocation - 2-Wire Cross Connects - Incremental Cost - Manual Svc Ord
H.1.21	Physical Collocation - 4-Wire Cross Connects - Incremental Cost - Manual Svc Ord
H.1.22	Physical Collocation -DS1/DS3 Cross Connects - Incremental Cost - Manual Svc Ord
H.2	VIRTUAL C
	Virtual Collocation prices are based on BellSouth Interstate Access Tariff - FCC
I.0	SERVICE PROVIDER NUMBER
I.1	SERVICE PROVIDER NUMBER PORTA
I.1.1	Service Provider Number Portability - RCF, Per
I.1.3	Service Provider Number Portability - RCF, Per Service Ord
I.2	SERVICE PROVIDER NUMBER PORTA
I.2.1	Service Provider Number Portability - DID, Per Number Po
I.2.2	Service Provider Number Portability - DID, Per Number I
I.2.3	Service Provider Number Portability - DID, Per Service Ord
I.2.4	Service Provider Number Portability - DID, Per Trunk Ter
I.2.5	Service Provider Number Portability - DID, Per Trunk Terminat

I.3	Service Provider Number Portability - Manual Svc Ord
I.3.1	Service Provider Number Portability - Incremental Cost - Manual Svc Ord
J.0	
J.1	
J.1.1	Dark Fiber, Per Four Fiber Strands, Per Route Mile or F
K.0	ADVANCED INTELLIGENT NETWORK (A
K.1	BellSouth AIN SMS
K.1.1	AIN SMS Access Service - Service Establishment, Per Sta
K.1.2	AIN SMS Access Service - Port Connection - Dia
K.1.3	AIN SMS Access Service - Port Connector
K.1.4	AIN SMS Access Service - User Identification Codes - Pe
K.1.5	AIN SMS Access Service - Security Card, Per User ID Code, Initial
K.2	BellSouth AIN
K.2.1	AIN Toolkit Service - Service Establishment Charge, Per Sta
K.2.2	AIN Toolkit Service - Training Sessio
K.2.3	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN
K.2.4	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, C
K.2.5	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN, Off-I
K.2.6	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN,
K.2.7	AIN Toolkit Service - Trigger Access Charge, Per Trigge
K.2.8	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per D
K.2.12	AIN Toolkit Service - Monthly report - Per AIN Toolkit Serv
K.2.13	AIN Toolkit Service - Special Study - Per AIN Toolkit Serv
K.2.14	AIN Toolkit Service - Call Event Report - Per AIN Toolkit Serv
K.2.15	AIN Toolkit Service - Call Event Special Study - Per AIN Toolkit Serv



Cost	
Element	
A.0	UNBUNDLED
A.1	2-WIRE ANALOG VOICE
A.1.1	2-Wire Analog Voice Grade Loop -
A.1.2	2-Wire Analog Voice Grade Loop -
A.1.3	2-Wire Analog Voice Grade Loop - Service Level 1 - Manual Or
A.1.4	2-Wire Analog Voice Grade Loop - Service Level 1 - Order Coordination for Specified C
A.1.5	2-Wire Analog Voice Grade Loop - Service Level 2 - Order Coordination for Specified C
A.2	SUB-LOOP 2-V
A.2.6	NID Per 2-Wire Analog Vc

A.3	LOOP CHANNELIZATION AND CO INTERFAC
A.3.1	Loop Channelization System - Digi
A.3.2	CO Channel Interface--2-W
A.3.3	Loop Concentration - Channelization System - Incremental Cost - Manual Svc Ord
A.4	4-WIRE ANALOG VOICE
A.4.1	4-Wire Analog Vo
A.4.2	NID Per 4-Wire Analog Vo
A.4.3	4-Wire Analog Voice Grade Loop - Order Coordination for Specified C
A.5	2-WIRE ISDN DIGITAL
A.5.1	2-Wire ISDN Dig
A.5.2	NID Per 2-Wire ISDN Dig
A.5.3	2-Wire ISDN Digital Grade Loop - Order Coordination for Specified C
A.6	2-WIRE ASYMMETRICAL DIGITAL SUBSCRIBER LINE (ADSL) COMP
A.6.1	2-Wire Asymmetrical Digital Subscriber Line (ADSL) C
A.6.2	NID Per 2-Wire Asymmetrical Digital Subscriber Lir
A.6.3	2-Wire ADSL Loop - Order Coordination for Specified C
A.7	2-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMP
A.7.1	2-Wire High Bit Rate Digital Subscriber Line (HDSL) C
A.7.2	NID Per 2-Wire High Bit Rate Digital Subscriber Lir
A.7.3	2-Wire HDSL Loop - Order Coordination for Specified C
A.8	4-WIRE HIGH BIT RATE DIGITAL SUBSCRIBER LINE (HDSL) COMP
A.8.1	4-Wire High Bit Rate Digital Subscriber Line (HDSL) C
A.8.2	NID Per 4-Wire High Bit Rate Digital Subscriber Lir
A.8.3	4-Wire HDSL Loop - Order Coordination for Specified C
A.9	4-WIRE DS1 I
A.9.1	4-Wire D
A.9.2	4-Wire DS1 Loop - Incremental Cost - Manual Svc Ord
A.9.3	4-Wire DS1 Loop - Order Coordination for Specified C

A.10	4-WIRE 56 OR 64 KBPS DIGITAL
A.10.1	4-Wire 56 or 64 Kbps Dig
A.10.2	NID Per 4-Wire 56 or 64 Kbps Dig
A.10.3	4-Wire 56 or 64 Kbps Digital Grade Loop - Order Coordination for Specified C
A.11	Unbundled Loops - Incremental Cost - Manual Svc Ord
A.11.1	Unbundled 2-Wire Loops - Incremental Cost - Manual Svc Ord
A.11.2	Unbundled 4-Wire Loops (Excluding DS1) - Incremental Cost - Manual Svc Ord
A.11.3	NID Per 2-Wire Loops - Manual Svc Ord
A.11.4	NID Per 4-Wire Loops - Manual Svc Ord
B.0	UNBUNDLED LOCAL EXCHANGE PORTS AT
B.1	EXCH
B.1.1	Exchange Ports - 2-Wire Analog Line
B.1.5	Exchange Ports - 2-
B.1.6	Exchange Ports - 4-Wire
B.1.7	Exchange Ports - 2-Wire Analog
B.1.8	Exchange Ports - 4-Wire An
B.1.9	Exchange Ports - 2-Wire Analog Line Port (Res., Bus.) - Incremental Cost - Manual Svc Ord
B.1.13	Exchange Ports - 2-Wire ISDN Port - Incremental Cost - Manual Svc Ord
B.1.14	Exchange Ports - 4-Wire ISDN DS1 Port - Incremental Cost - Manual Svc Ord
B.1.15	Exchange Ports - 2-Wire Analog Line Port (PBX) - Incremental Cost - Manual Svc Ord
B.1.16	Exchange Ports - Coin Port - Incremental Cost - Manual Svc Ord
B.2	
B.2.1	The
B.2.2	Cust. Changeab
B.2.3	
B.2.4	Remote Activation of
B.2.5	Can
B.2.6	Aut
B.2.7	A
B.2.8	Calling N
B.2.9	Calling Number De
B.2.10	Customer C

B.2.11	Selective
B.2.12	Selective
B.2.13	Selective
B.2.15	Multili
B.2.16	Call Forw
B.2.17	Call Forwa
B.2.18	Call Forwarding Don't A
B.2.19	Remote
B.2.20	
B.2.21	
B.2.22	Toll R
B.2.23	Msg. Waiting Indic. - S
B.2.24	Anonymou
B.2.25	Shared Call Appe
B.2.26	Multiple C
B.2.27	ISDN Bridge
B.2.28	Cal
B.2.29	
B.2.30	Multi Appearance Director
B.2.31	
B.2.32	Teen Service (Res. Dis
B.2.33	Code Restrictio
B.2.34	
B.2.35	
B.2.36	ISDN Message Waiting 1
B.2.37	ISDN Feature F
B.2.39	Subsequent Ordering Ch
B.2.40	Subsequent Ordering Charge -Incremental Cost - Manual Svc Ord
D.0	UNBUNDLED TRANSPORT AND LOCAL INTER
D.2	INTEROFFICE TRANSPORT - DEDICATED - V
D.2.2	Interoffice Transport - Dedicated - 2- Wire Voice Grade - Faci
D.2.3	Interoffice Transport - Voice Grade - Incremental Cost - Manual Svc Ord

D.3	INTEROFFICE TRANSPORT - DEDICATED - DS0
D.3.2	Interoffice Transport - Dedicated - DS0 - Facility
D.3.3	Interoffice Transport - DS0 - Incremental Cost - Manual Svc Order
D.4	INTEROFFICE TRANSPORT - DEDICATED - DS1
D.4.2	Interoffice Transport - Dedicated - DS1 - Facility
D.4.3	Interoffice Transport - DS1 - Incremental Cost - Manual Svc Order
D.5	LOCAL CHANNEL
D.5.1	Local Channel - Dedicated - 2-Wire
D.5.2	Local Channel - Dedicated - 4-Wire
D.5.3	Local Channel - Incremental Cost - Manual Svc Order
D.5.4	Local Channel - Dedicated - 2Wire Voice Grade - Incremental Cost - Manual Svc Order
D.5.5	Local Channel - Dedicated - 4Wire Voice Grade - Incremental Cost - Manual Svc Order
D.5.6	Local Channel - Dedicated - DS1 - Incremental Cost - Manual Svc Order
E.0	SIGNALING NETWORK, DATA BASES, & SERVICE MANAGEMENT
E.1	800 ACCESS TEN DIGIT SCREENING
E.1.2	800 Access Ten Digit Screening, Reservation Charge Per 800 Number
E.1.3	800 Access Ten Digit Screening, Per 800 # Established W/O PC
E.1.4	800 Access Ten Digit Screening, Per 800 # Established With PC
E.1.5	800 Access Ten Digit Screening, Customized Area of Service
E.1.6	800 Access Ten Digit Screening, Multiple InterLATA CXR Routing Per CXR Request
E.1.7	800 Access Ten Digit Screening, Change Charge
E.1.8	800 Access Ten Digit Screening, Call Handling and Destination
E.1.9	800 Access Ten Digit Scrng, Reserv Chrg Per 800 # Reserved-Incrm Cost-Manual Svc
E.1.10	800 Access Ten Digit Scrng, Per 800 # Est'd w/o POTS Transl.-Incrm Cost-Manual Svc
E.1.11	800 Access Ten Digit Scrng, Per 800 # Est'd w/ POTS Transl.-Incrm Cost-Manual Svc
E.1.12	800 Access Ten Digit Scrng, Chng Chrg/Request-Incrm Cost-Manual Svc
E.2	LINE INFORMATION DATA BASE AND SERVICE
E.2.3	LIDB Originating Point Code Establishment
E.2.4	LIDB - Incremental Cost - Manual Svc Order
E.3	CCS7 SIGNALING

E.3.1	CCS7 Signaling Connection, Per
E.3.6	CCS7 - Incremental Cost - Manual Svc Ord
F.0	OPERATIONAL SUPPORT
F.1	OPERATIONAL SUPPORT
F.1.1	OSS Electronic Inter
G.0	OPERATOR SERVICES AND DIRECTORY
G.1	OPERATOR CALL
G.1.5	Loading Expense Per Announcement For Branded
G.1.6	Recording Expense Per Announcement For Branded
G.5	DIRECTORY ASSISTANCE ACC
G.5.2	Loading Expense Per Announcement For Branded
G.5.3	Recording Expense Per Announcement For Branded
G.6	DIRECTORY
G.6.1	Directory Transport - Loc
G.6.3	Directory Transport - DS1 Level Interoffice Per Faci
G.6.8	Directory Transport - Installation NRC, Per Trunk or Signa
G.6.9	Directory Transport Local Channel DS1 - Incremental Cost - Manual Service Ord
G.6.10	Directory Transport Interoffice DS1 - Incremental Cost - Manual Service Ord
G.8	DIRECT ACCESS TO DIRECTORY
G.8.3	Direct Access to Directory Assistance Service, Service Estab
G.9	SELECTIVE ROUTING (INTERIM SOLUTION LINE C
G.9.1	Selective Routing Per Unique Line Class Code Per Rec
G.9.2	Selective Routing - Incremental Cost - Manual Svc Ord
H.0	C
H.1	PHYSICAL C
H.1.1	Physical Collocation - /
H.1.5	Physical Collocation - Cable Installation

H.1.9	Physical Collocation - 2-wire
H.1.10	Physical Collocation - 4-wire
H.1.11	Physical Collocation - DS1
H.1.12	Physical Collocation - DS3
H.1.17	Physical Collocation - Security Escort - Basic
H.1.18	Physical Collocation - Security Escort - Overtime
H.1.19	Physical Collocation - Security Escort - Premium
H.1.20	Physical Collocation - 2-Wire Cross Connects - Incremental Cost - Manual Svc Ord
H.1.21	Physical Collocation - 4-Wire Cross Connects - Incremental Cost - Manual Svc Ord
H.1.22	Physical Collocation -DS1/DS3 Cross Connects - Incremental Cost - Manual Svc Ord
H.2	VIRTUAL COLLOCATION
	Virtual Collocation prices are based on BellSouth Interstate Access Tariff - FCC
I.0	SERVICE PROVIDER NUMBER
I.1	SERVICE PROVIDER NUMBER PORTABILITY
I.1.1	Service Provider Number Portability - RCF, Per Service Order
I.1.3	Service Provider Number Portability - RCF, Per Service Order
I.2	SERVICE PROVIDER NUMBER PORTABILITY
I.2.1	Service Provider Number Portability - DID, Per Number Portability
I.2.2	Service Provider Number Portability - DID, Per Number Portability
I.2.3	Service Provider Number Portability - DID, Per Service Order
I.2.4	Service Provider Number Portability - DID, Per Trunk Termination
I.2.5	Service Provider Number Portability - DID, Per Trunk Termination
I.3	Service Provider Number Portability - Manual Svc Ord
I.3.1	Service Provider Number Portability - Incremental Cost - Manual Svc Ord
J.0	
J.1	
J.1.1	Dark Fiber, Per Four Fiber Strands, Per Route Mile or Less
K.0	ADVANCED INTELLIGENT NETWORK (AIN)

K.1	BellSouth AIN SMS
K.1.1	AIN SMS Access Service - Service Establishment, Per St
K.1.2	AIN SMS Access Service - Port Connection - Dia
K.1.3	AIN SMS Access Service - Port Connection
K.1.4	AIN SMS Access Service - User Identification Codes - P
K.1.5	AIN SMS Access Service - Security Card, Per User ID Code, Initial
K.2	BellSouth AIN
K.2.1	AIN Toolkit Service - Service Establishment Charge, Per St
K.2.2	AIN Toolkit Service - Training Sessio
K.2.3	AIN Toolkit Service - Trigger Access Charge, Per Trigger, Per DN
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