- The fractions for aerial, buried and underground copper feeder cable.

4. Input B-51 - Fiber Feeder Structure Fractions

   - The fractions for aerial, buried and underground fiber feeder cable.

5. Input B-121 - Interoffice Structure Fractions

   - The percentages for the division of interoffice structures between aerial, buried and underground.

(2)
MCI'S AND AT&T'S STATED BASIS FOR THEIR DEFAULT VALUES

MCI and AT&T claim the following basis for deriving the default values:

1. The percentages of drops that are aerial and buried (B-5) are based on the opinion and judgement of plant engineering experts. This judgement, in part, states that as developed areas become more dense, placements will more likely occur under pavement conditions. No data or workpapers were provided as backup.

2. The fractions of aerial, buried and underground cable for distribution structure (B-17) are supported only by general statements that relate to the three different kinds of structures. For aerial/block cable, HAI R5.0a quotes from a Bellcore manual which states, "The most common cable structure is still the pole line. Buried cable is now used wherever feasible, but pole lines remain an important structure in today's environment."

   For buried cable, HAI R5.0a states that it reflects an increasing trend towards use of buried cable in new subdivisions. For underground cable, HAI R5.0a states that underground cable, conduit and manholes are primarily used for feeder and interoffice transport cables, not for distribution cable.

   No backup or workpapers were provided to support any of the specific inputs recommended by HAI R5.0a.

3. For the fraction of aerial, buried and underground cable for copper feeder structure (B-46), HAI R5.0a refers back to the discussion for distribution cable structure fractions. No backup or workpapers were provided to support any of the specific inputs recommended by HAI R5.0a.

4. For the fractions of aerial, buried and underground cable for fiber feeder structure (B-51), HAI R5.0a refers back to the discussion for distribution cable structure fractions. No backup or workpapers were provided to support any of the specific inputs recommended by HAI R5.0a.

5. For interoffice structure percentages (B-121), HAI R5.0a asserts that the inputs recommended are an average figure accounting for the mix of density zones applicable to interoffice transmission facilities. It is not clear whether this mix is for a nationwide average, urban areas or different geographical regions of the country, or whether it is applicable to BellSouth. No backup or workpapers were provided to support any of the specific inputs recommended by HAI R5.0a.

6. MCI and AT&T did not state the specific steps they took to ensure that the default values for each of the UAIs for this Sensitive Input Group reflected the conditions of the territory of BST or any other company, and did not state the results of the steps they undertook to make that assurance. Thus, there is no demonstration that the default values they have chosen (which presumably MCI and AT&T believe are forward-looking) are reflective of the conditions in BellSouth's territory.

7. MCI and AT&T did not state the basis upon which their experts developed their estimates for the default values used in applying HAI R5.0a, and did not provide workpapers and sources associated therewith, where the basis for the default values was claimed to be "expert opinion."

(3)
ALTERNATIVE VALUES BASED
UPON COST AND OTHER DATA SPECIFIC
TO BELLSOUTH

The following BellSouth-specific values were obtained for the user-adjustable inputs that make up Sensitive Input Group 6:

1. The fractions for aerial and buried drop (B-5) related to drop structure based upon BST-specific information should be consistent with the value developed for the fractions of aerial, buried and underground cable for distribution cable structure (B-17).

2. The fractions of aerial, buried and underground cable for distribution cable structure (B-17), based on the BellSouth loop sample reconfigured to reflect forward-looking technology and a scorched node approach are as follows:

   For distribution cable fractions, see Exhibit 2, lines 120 to 137. Also see Exhibit 17, lines 68 - 110.

   HAI 5.0a has added a new UAI for buried fraction available for shift. We are not recommending any change to the default values because they do not appear to be sensitive.

3. The fractions of aerial, buried and underground cable for copper feeder structure (B-46) based upon the BellSouth loop sample reconfigured to reflect forward-looking technology and a scorched node approach as follows:

   For copper feeder structure fractions, see Exhibit 2, lines 230 - 247. Also see Exhibit 17, lines 68 - 110.

4. The fractions for aerial, buried and underground cable for fiber feeder structure (B-51) based upon the BellSouth loop sample reconfigured to reflect forward-looking technology and a scorched node approach as follows:

   For fiber feeder structure fractions, see Exhibit 2, lines 271 - 288. Also see Exhibit 17, lines 68 - 110.

5. The percentages of aerial, buried and underground structures for fiber optic facilities based upon BST-specific data as follows:

   For interoffice structure percentages, see Exhibit 2, lines 522 - 523. Also see Exhibit 17, lines 111 - 140 and, specifically, lines 129 - 134.

Exhibit 9

Sensitive Input Group 7: Structure Sharing Fractions

Exhibit 9

SENSITIVE INPUT GROUP 7: STRUCTURE SHARING FRACTIONS

This Exhibit analyzes and evaluates HAI R5.0a default values, and identifies alternative values, for the following HAI R5.0a Appendix B user-adjustable inputs:

- B-130 Fractions of Interoffice Structure Assigned to Telephone
- B-180 Distribution and Feeder Structure Percentages Assigned to Telephone

A description of each of these UAIs can be found in the HAI Model Release 5.0a Inputs Portfolio.

This Exhibit is structured in 3 parts: Part (1) identifies the UAIs in this Sensitive Input Group for which we have obtained forward-looking cost and other forward-looking data that is specific to BellSouth, Part (2) identifies the basis upon which MCI and AT&T state they have developed their default values for the UAIs in this Sensitive Input Group and contains some of our observations about these default values, and Part (3) identifies the alternative values to replace the default values in order to reflect forward-looking costs and other conditions, based on BellSouth data.

(1) AVAILABILITY OF COST AND OTHER FORWARD-LOOKING DATA SPECIFIC TO BELLSOUTH

Forward-looking cost (*i.e.*, no embedded cost characteristics) and other forward-looking data specific to BellSouth have been obtained for the following user-adjustable inputs:

1. Input B-130 - Fractions of Interoffice Structure Assigned to Telephone

    - The sharing percentages for aerial, buried and underground structure for interoffice facilities.

2. Input B-180 - Distribution and Feeder Structure Percentages Assigned to Telephone

    - The sharing percentage for aerial, buried and underground distribution and feeder structures.

(2)
MCI'S AND AT&T'S STATED BASIS
FOR THEIR DEFAULT VALUES

MCI and AT&T claim the following basis for deriving the default values:

1. The default value for sharing that is covered by input B-130 involves the structure which is not shared with feeder cable. Separately, in input B-129, it is assumed that 75% of the interoffice structure is shared with and situated on feeder facilities, leaving 25% to uniquely represent interoffice structure facilities. This 25% is further assumed to be shared by two other utilities resulting in 1/3 of the 25% or 8.3% of the original interoffice investment as being assigned to telephone. No backup was provided for these assertions.

2. The default values for sharing of distribution and feeder structures (B-180) that are assigned to the telephone company are stated to be based upon industry experience and expertise of HAI Consulting, outside plant engineers and other industry groups. Also, it is represented that conversations took place with representatives of local utility companies and the suggestion is that these conversations also formed part of the basis for selecting the default value. In addition, a white paper has been prepared to state the rationale and reasoning for the proposed percentages. While the white paper makes various assertions, no data or statistics of any kind have been provided.

3. MCI and AT&T did not state the specific steps they took to ensure that the default values for each of the UAIs for this Sensitive Input Group reflected the conditions of the territory of BST or any other company, and did not state the results of the steps they undertook to make that assurance. Thus, there is no demonstration that the default values they have chosen (which presumably MCI and AT&T believe are forward-looking) are reflective of the conditions in BellSouth's territory.

4. MCI and AT&T did not state the basis upon which their experts developed their estimates for the default values used in applying HAI R5.0a, and did not provide workpapers and sources associated therewith, where the basis for the default values was claimed to be "expert opinion."

(3)
ALTERNATIVE VALUES BASED UPON COST AND OTHER DATA SPECIFIC TO BELLSOUTH

The following BellSouth-specific values were obtained for the user-adjustable inputs that make up Sensitive Input Group 7:

1. The number of BST owned poles in each state is shown on Exhibit 17, line 144. The number of poles leased by BST from the power companies is also shown on Exhibit 17, line 143. BST has directly invested in a fraction of the poles used for telephone service. This value represents the BST-specific sharing percentage for aerial structures (B-130 and B-180) when taken together with USOA accounting for pole rental expense and revenue. See Exhibit 17, line 145 and Exhibit 2, lines 705 - 713 [distribution], 732 - 740 [feeder] and 535 [interoffice].

2. BST does not identify joint trench as a unique item in any of the data that is collected. State contract coordinators dealing with ongoing construction were asked to make estimates regarding the ongoing activity in sharing buried and underground facilities. The state coordinators indicated that joint trench work does occur to some degree in new subdivision environments (distribution) that are relatively free from obstructions. These estimates of sharing are shown on Exhibit 17, lines 146 - 148 and Exhibit 2, lines 714 - 722.

3. BST-specific data with regard to the sharing of underground facilities on a current basis indicates that the percent of sharing is negligible.

4. With regard to sharing, the potential co-sharers should be identified. With regard to the residence and business lines that are already in place, the electric, cable TV and long distance facilities are already in place. While some sharing could occur in conjunction with future expansion, a significant change-out of facilities for electric, cable TV and long distance companies is not reasonable, especially in the values assigned to the defaults.

Exhibit 10

Sensitive Input Group 8: Copper and Fiber Sizing Factors

Exhibit 10

SENSITIVE INPUT GROUP 8: COPPER AND FIBER SIZING FACTORS

This Exhibit analyzes and evaluates HAI R5.0a default values, and identifies alternative values, for the following HAI R5.0a Appendix B user-adjustable inputs:

- B-18 Distribution Cable Sizing Factor
- B-54 Copper Feeder Sizing Factor
- B-55 Fiber Feeder Sizing Factor

A description of each of these UAIs can be found in the HAI Model Release 5.0a Inputs Portfolio.

This Exhibit is structured in 3 parts: Part (1) identifies the UAIs in this Sensitive Input Group for which we have obtained forward-looking cost and other forward-looking data that is specific to BellSouth, Part (2) identifies the basis upon which MCI and AT&T state they have developed their default values for the UAIs in this Sensitive Input Group and contains some of our observations about these default values, and Part (3) identifies the alternative values to replace the default values in order to reflect forward-looking costs and other conditions, based on BellSouth data.

(1)
AVAILABILITY OF COST AND OTHER FORWARD-LOOKING DATA SPECIFIC TO BELLSOUTH

Forward-looking cost (*i.e.*, no embedded cost characteristics) and other forward-looking data specific to BellSouth have been obtained for the following user-adjustable inputs:

1. Input B-18 - Distribution Cable Sizing Factor

2. Input B-54 - Copper Feeder Sizing Factor

3. Input B-55 - Fiber Feeder Sizing Factor

   - The BST-specific cable sizing factors are based on BST-specific experience, and a review of engineering and planning criteria. These values represent the outputs of the model rather than direct inputs. The model lacks the flexibility to enable the user to directly input the desired cable fill that would be the result of the model. Therefore, we have recommended inputs fill factors that produce the BST-specific output fill factors.

(2)

MCI'S AND AT&T'S STATED BASIS FOR THEIR DEFAULT VALUES

MCI and AT&T claim the following basis for deriving the default values:

1. The distribution cable sizing factor (B-18) is defined as the factor by which distribution cable is increased above the size needed to serve a given quantity of demand. Documentation from HAI R5.0a states that "spare capacity provided by default values in HAI R5.0a is sufficient to meet current demand plus some amount of growth."

2. The discussion for the default values of copper feeder sizing factors (B-54) simply refers back to the discussion for distribution cable sizing factors.

3. The discussion for fiber feeder sizing factor (B-55) states that since fiber optic multiplexers used by HAI R5.0a have 100 percent redundancy, and do not reuse fibers in the loop, there is no reason to divide the number of fibers needed by a cable sizing fill factor, prior to sizing the fiber cable to the next larger available size.

4. MCI and AT&T did not state the specific steps they took to ensure that the default values for each of the UAIs for this Sensitive Input Group reflected the conditions of the territory of BST or any other company, or to state the results of the steps they undertook to make that assurance. There is no demonstration that the default values they have chosen (which presumably MCI and AT&T believe are forward-looking) are also reflective of the conditions in BellSouth's territory. MCI and AT&T are silent.

5. MCI and AT&T did not state the basis upon which their experts developed their estimates for the default values used in applying HAI R5.0a, and did not provide workpapers and sources associated therewith, where the basis for the default values was claimed to be "expert opinion."

(3)

ALTERNATIVE VALUES BASED UPON COST AND OTHER DATA SPECIFIC TO BELLSOUTH

The following BellSouth-specific values were obtained for the user-adjustable inputs that make up Sensitive Input Group 8:

1. Distribution cable fills (B-18) obtained from the BST network department for each state is as follows:

Alabama	46.1%
Florida	38.8%
Georgia	42.7%
Kentucky	46.7%
Louisiana	37.9%
Mississippi	46.8%
N. Carolina	41.2%
S. Carolina	40.5%
Tennessee	50.2%

The HAI Model was run iteratively with different values for the input distribution cable fill, and then the outputs were examined to determine the resulting output fills produced by the model. The inputs reflected on Exhibit 2, lines 147 - 155 produce the output fills reflected above.

2. The BST-specific data for copper feeder utilization for each state is shown below and continues to reflect reasonable engineering guidelines looking forward.

	Copper Pairs Available	Copper Pairs Assigned	Copper Feeder Fill
Alabama	2,386,074	1,577,583	0.6612
Florida	6,349,457	4,169,515	0.6567
Georgia	3,870,924	2,496,049	0.6448
Kentucky	1,656,633	1,079,281	0.6515
Louisiana	3,501,335	2,161,114	0.6172
Mississippi	1,564,960	1,045,656	0.6682
N. Carolina	2,472,557	1,631,627	0.6599
S. Carolina	1,593,157	1,012,044	0.6352
Tennessee	3,146,269	2,048,735	0.6512

The HAI Model was run iteratively with different values for the input copper feeder cable fill, and then the outputs were examined to determine the resulting output fills produced by the model. The inputs reflected on Exhibit 2, lines 309 - 317 produce the output fills reflected above.

3. The BST-specific fiber feeder data for each state indicates that approximately 74% of DLC channels available are assigned and continue to reflect reasonable engineering guidelines looking forward. The HAI Model was run, and the workfile associated with the default results from the model was examined to determine the relationship between input and output fills for fiber feeder. The inputs reflected on Exhibit 2, lines 318 - 326 produce output fiber feeder fills of 74% or more for each of the jurisdictions served by BellSouth.

Exhibit 11

Sensitive Input Group 9: DLC

Exhibit 11

SENSITIVE INPUT GROUP 9: DLC

This Exhibit analyzes and evaluates HAI R5.0a default values, and identifies alternative values, for the following HAI R5.0a Appendix B user-adjustable inputs:

- B-58 DLC Site and Power per Remote Terminal
- B-59 Maximum Line Size per Remote Terminal
- B-60 Remote Terminal Fill Factor
- B-61 DLC Initial Common Equipment Investment
- B-62 DLC Channel Unit Investment
- B-63 DLC Lines per Channel Unit
- B-64 Low Density DLC to TR-303 DLC Cutover
- B-65 Fibers per Remote Terminal
- B-66 Optical Patch Panel
- B-68 Common Equipment Investment per Additional Line Increment
- B-69 Maximum Number of Additional Line Modules per Remote

A description of each of these UAIs can be found in the HAI Model Release 5.0a Inputs Portfolio.

This Exhibit is structured in 3 parts: Part (1) identifies the UAIs in this Sensitive Input Group for which we have obtained forward-looking cost and other forward-looking data that is specific to BellSouth, Part (2) identifies the basis upon which MCI and AT&T state they have developed their default values for the UAIs in this Sensitive Input Group and contains some of our observations about these default values, and Part (3) identifies the alternative values to replace the default values in order to reflect forward-looking costs and other conditions, based on BellSouth data.

(1)
AVAILABILITY OF COST AND OTHER FORWARD-LOOKING DATA SPECIFIC TO BELLSOUTH

Forward-looking cost (*i.e.*, no embedded cost characteristics) and other forward-looking data specific to BellSouth have been obtained for the following user-adjustable inputs:

1. Input B-58 - DLC Site and Power per Remote Terminal

2. Input B-59 - Maximum Line Size per Remote Terminal

3. Input B-60 - Remote Terminal Fill Factor

4. Input B-61 - DLC Initial Common Equipment Investment

5. Input B-62 - DLC Channel Unit Investment

6. Input B-63 - DLC Lines per Channel Unit

7. Input B-64 - Low Density DLC to TR-303 DLC Cutover

8. Input B-65 - Fibers per Remote Terminal

9. Input B-66 - Optical Patch Panel

10. Input B-68 - Common Equipment Investment per Additional Line Increment

11. Input B-69 - Maximum Number of Additional Line Modules per Remote

(2)
MCI'S AND AT&T'S STATED BASIS
FOR THEIR DEFAULT VALUES

MCI and AT&T claim the following basis for deriving the default values:

1. For the investment in site preparation and power for the remote terminal of a Digital Loop Carrier (DLC) system (B-58), the incremental per site cost was estimated by a team of experienced outside plant experts who are alleged to have contracted for hundreds of remote terminal site installations. The decrease in the input for low density DLC is because it is claimed that low density DLC requires less space. No backup workpapers or data was provided to support the default values.

2. The maximum number of lines supported by the initial line module of a remote terminal (B-59) is based on what is claimed to be Next Generation Digital Loop Carrier, compliant with Bellcore Generic Requirements GR-303. HAI R5.0a does not possess the flexibility to permit multiple types of integrated digital loop carrier systems with varying maximum line sizes per remote terminal.

   For low density digital loop carrier, HAI R5.0a utilizes an integrated configuration based upon a 120-line unit which is stated to be GR-303 compliant.

3. The ratio of lines served by a DLC remote terminal to the number of line units

equipped in the remote terminal (B-60) is based on the assumption and reasoning that line cards represent the most expensive part of integrated digital loop carrier provisioning, and that facility relief can be provided by dispatching a technician with line cards rather than engaging in a several month long copper cable feeder addition. It is, therefore, asserted that high fill rates should be the norm for an efficient provider using forward-looking technology. No data or backup was provided to support this input.

4. The cost of an initial increment of integrated digital loop electronics (B-61) was based on an estimate made by a team of experienced outside plant experts who are alleged to have contracted for hundreds of remote terminal site installations. No backup, data or workpapers was provided to support this input.

   HAI R5.0a asserts that low density DLC requires less initial investment than high density DLC and are allegedly based upon vendor list prices. The default input for low density DLC is approximately 20% of the value of the input for high density DLC. No workpapers or backup was provided to support any of these inputs.

5. The investment in channel units required in the remote terminal of the DLC system (B-62) is based upon the cost of individual POTS channel unit cards that was estimated by a team of experienced outside plant experts who are alleged to have purchased thousands of these cards from suppliers. No backup or workpapers were provided to support any of these input values.

6. The number of lines that can be supported on a single DLC channel unit (B-63) is based upon what is alleged to be vendor documentation. No data or workpapers were provided to support these inputs.

7. The threshold number of lines that are assumed to be served by low density DLC, above which high density DLC will be used (B-64), is based on an analysis that reveals that two low density DLC units, at 240 lines each, are more cost effective than a single DLC unit with a capacity of 672 lines. Although no workpapers or data were provided to support this analysis, our independent analysis shows that the assumptions appear to be correct for the default inputs.

8. The number of fibers connected to each DLC remote terminal (B-65) is based upon including one fiber for upstream transmission, one fiber for downstream transmission and two for redundancy. The number of fibers is allegedly based on vendor documentation. No backup or workpapers were provided to support this input value.

9. The investment required for each optical patch panel associated with a DLC remote terminal (B-66) was estimated by a team of experienced outside plant experts who are

alleged to have contracted for hundreds of such installations. No backup or workpapers were provided to support any of these inputs.

10. The cost of the common equipment required to add a line module in a remote terminal (B-68) was based upon an estimate made by a team of experienced outside plant experts who are alleged to have contracted for hundreds of remote terminal site installations. No data or workpapers were provided to support any of these inputs.

    For low density DLC, HAI R5.0a states that the required investment is lower than for high density DLC. For this input, low density DLC common equipment investment per additional line is about 50% of the value for the high density DLC common equipment investment per additional line. No data or workpapers was provided to support this input.

11. The number of line modules (in multiples of the initial maximum line size per remote terminal) that can be added to a remote terminal (B-69) allows for adding two additional common equipment investment modules to an initial high density DLC 672 line system, and one additional common equipment investment module to an initial 120 line system.

12. MCI and AT&T did not state the specific steps they took to ensure that the default values for each of the UAIs for this Sensitive Input Group reflected the conditions of the territory of BST or any other company, and did not state the results of the steps they undertook to make that assurance. Thus, there is no demonstration that the default values they have chosen (which presumably MCI and AT&T believe are forward-looking) are reflective of the conditions in BellSouth's territory.

13. MCI and AT&T did not state the basis upon which their experts developed their estimates for the default values used in applying HAI R5.0a, and did not provide workpapers and sources associated therewith, where the basis for the default values was claimed to be "expert opinion."

(3)
ALTERNATIVE VALUES BASED UPON COST AND OTHER DATA SPECIFIC TO BELLSOUTH

The following BellSouth-specific values were obtained for the user-adjustable inputs that make up Sensitive Input Group 9:

1. The investment in site preparation and power for the remote terminal of a DLC system (B-58) is not isolated in the BST accounting system. Rather, these costs are grouped together with the installation costs of the appropriate high density or low density DLC system that is installed. Therefore, the BST-specific value for this input will be set to zero and the installed cost of the appropriate high density or low density DLC system will include the site and power per remote terminal.

2. The maximum number of lines supported by the initial line module of a remote terminal (B-59) is determined as follows:

   - For high density DLC, the current forward-looking applications are of two types. The first is DISC*S, which is equipped with 672 initial lines per remote terminal and the second is Litespan, which is equipped with 224 lines per remote terminal. Since HAI R5.0a does not provide the flexibility of using a combination of these remote terminals and their respective line increments, the data in this proceeding has been modeled using the DISC*S DLC system and the Litespan system separately. Since each system is about equally used, an average of the loop, switching costs and Universal Service Fund requirements determined for each system separately is appropriate.

   - For low density DLC, BST employs the SLC 5 system. This system permits 192 initial lines per remote terminal.

3. The Remote Terminal Sizing factor in a DLC remote terminal (B-60) is the ratio of lines served by a DLC remote terminal to the number of lines equipped in the remote terminal. The actual BST values, which vary by state, are appropriate on a forward-looking basis. This value is the output fill that should be produced by the model. The relevant values for the input in the model that produces this result range from .7620 to 1.000 when running DISC*S and from .6900 to .9680 when running Litespan. See Exhibit 2, lines 152 - 156.

4. The cost of all common equipment and housing in the remote terminal, as well as the fiber optics multiplexer required at the CO end for the initial line module of the DLC (DISC*S) system (B-61) is determined as follows:

- For high density DLC (DISC*S), the following material costs[13] have been obtained:

  - Depending on the size and manufacturer, DLC cabinets are limited in the number of additional common equipment modules that can be placed in particular cabinets, with larger, more expensive cabinets able to accept a greater number of additional modules. In computing DLC investment, the HAI model performs computations to determine the number of basic and additional common equipment modules that are required in each serving area. Since the number of modules varies from as few as 1 [basic common equipment only, thereby requiring a small cabinet] to 9 [one basic module and 8 additional modules, requiring a large cabinet], a one-size-fits-all cabinet cost cannot be consistent with actual engineering requirements and is therefore inappropriate. Stated plainly, *some DLC implementations require larger, more expensive cabinets, which is a requirement that HAI R5.0a does not permit.*

    To compute the appropriate component of the cost of DLC basic common equipment associated with cabinets, we have analyzed the outputs of HAI R5.0a based on the particular low/high density cutover [see below] and types of DLC employed by BellSouth. We have then determined the number of instances that each type of cabinet [by size] is implemented by the model, by state, and then developed the cabinet cost based on the weighted average cost of cabinets actually utilized by the model.

    The weighted average material cost of high density DLC cabinets, as implemented by HAI R5.0a for the jurisdictions served by BellSouth, vary from $21,641 to $32,156. The lower cost reflects the model's implementation of smaller cabinets in one state, whereas the higher cost reflects the model's implementation of larger cabinets in another state.

  - The material cost of the DISC*S hard wire and the common equipment at the remote terminal is $25,195.

[13] Material costs exclude hardwire and other installation factors, which are included in our recommended inputs. These vary by state. In addition, material costs are derived from "configurator" sheets reflecting BellSouth's actual contract prices, including all discounts, for purchasing equipment necessary to produce operating integrated DLC systems.

- - The material cost of the multiplexer at the remote terminal and central office is $16,881, based on a probability of occurrence of 30% for the more expensive FLM-150 multiplexer and 70% of the less expensive DDM-2000 units. The material cost includes hardwire, common and multiplexer components.

  - The cost of the digital cross connect system at the central office is $5,622, based on an assumed CLEC penetration of 20%. This is also based on the DISC*S module size of 672 lines per module, which translates into a requirement for 56 DACs ports per DISC*S DLC module.

- For high density DLC (Litespan), the following material costs have been obtained:

  - The material cost of the cabinet varies by installation, for the same reasons reflected in the DISC*S discussion of cabinet costs, above. Litespan DLC cabinets vary in weighted average material cost from $19,179 to $23,752, depending on the HAI R5.0a's implementation of DLC in the various states served by BellSouth.

  - The material cost of the hard wire and the common equipment at the remote terminal is $6,318.

  - The material cost of the multiplexer at the remote terminal and central office is $24,258. This includes costs for common optics, common equipment and other equipment associated with the multiplexer.

  - The material cost of the digital cross connect system at the central office is $1,874. This is based on an assumed CLEC penetration of 20%. It also is based on the Litespan module size of 224 lines per module, which translates into a requirement for 19 DACs ports per Litespan DLC module.

  As above, appropriate in-plant factors are applied for each state.

- For low density (SLC 5) DLC, the following values apply:

  - The weighted average material cost of cabinets varies from $9,257 to $13,157, for the reasons discussed above.

  - The material cost of the hardwire and common equipment at both the remote terminal and central office is $10,279.

- •• The material cost of the multiplexer at the remote terminal and the central office is $14,476. This reflects a 70/30 mix between the less-expensive DDM-2000 and the more expensive FLM-150 multiplexers, and includes a credit [reduction] to the basic common equipment cost associated with deferring additional SLC cards to the material cost associated with additional common equipment modules. These deferrable costs are then added back in an appropriate manner in the cost of additional SLC modules [B-68].

- •• The material cost of the digital cross connect at the central office is $1,606. This is based on an assumed CLEC penetration of 20%. It also is based on the SLC module size of 192 lines per module, which translates into a requirement for 16 DACs ports per SLC DLC module.

As above, appropriate in-plant factors are applied.

5. The investment in channel units required in the remote terminal of the DLC system (B-62) is determined as follows:

   - For high density (DISC*S) DLC, the channel unit investment at the remote terminal is $**. Similarly, for the coin channel unit in the same system, the cost is $**. Appropriate in-plant factors for each state are applied in determining the recommended inputs at Exhibit 2, lines 354 and 356. It should be noted that the capacity of these cards differs from the default HAI R5.0a inputs.

   - For high density (Litespan) DLC, the channel unit investment at the remote terminal is $** installed. Similarly, for the coin channel unit in the same system, the cost is $**. Appropriate in-plant factors for each state are applied in determining the recommended inputs at Exhibit 2, lines 368 and 370. The capacity of the coin channel unit cards differs from the capacity of the cards reflected in the default HAI R5.0a inputs.

   - For low density (SLC 5) DLC, the channel unit investment at the remote terminal is $** installed. Similarly, the coin channel unit investment is $**. Appropriate in-plant factors for each state are applied in determining the recommended inputs at Exhibit 2, lines 382 and 384. The capacity of the coin channel unit cards differs from the capacity of the cards reflected in the default HAI R5.0a inputs.

** Amounts are confidential, pursuant to vendor agreements.

6. The number of lines that can be supported on a single DLC channel unit (B-63) is:

- For high density DLC (DISC*S), there are two circuits per card for POTS and one circuit per card for coin.
- For high density DLC (Litespan), there are four circuits per card for POTS and four circuits per card for coin.
- For low density DLC, there are two circuits per card for POTS and one circuit per card for coin.

7. The threshold number of lines served by low density DLC, above which high density DLC will be used (B-64) depends on the relative costs of implementing high [DISC*S and Litespan] and low [SLC] density DLC. This requires a state-specific computation of the cutover based on each state's DLC costs, which has been done off-line. Our computations indicate that the appropriate cutover between DISC*S and SLC systems is 576 lines. See Exhibit 2, line 358. The appropriate cutover between Litespan and SLC systems is 384 lines. See Exhibit 2, line 372.

8. The number of fibers connected to each DLC remote terminal (B-65) is 6 for both high and low density for BST. Although this practice is employed to produce a high degree of reliability, we have modeled 4 fibers per remote terminal to produce a more conservative result.

9. The material cost required for each optical patch panel associated with a DLC remote terminal (B-66), based upon a splicing terminal that can handle 24 fiber pigtails, is $2,433. This cost is then allocated [divided by 6] to reflect the cost of an optical patch panel appropriate for four fibers, which is the HAI R5.0a recommended input for the number of fibers connected to each DLC remote terminal. The appropriate input, reflected on Exhibit 2, lines 360, 374 and 387 [for each type of DLC system], also includes in-plant factors specific to each state served by BellSouth.

10. The cost of common equipment required to add a line module in a remote terminal (B-68) is determined for BST as follows:

- For high density (DISC*S) DLC, the cost of hard wire, common equipment and DACS is $30,817. Appropriate in-plant factors for each state are applied in determining the recommended input.

- For high density (Litespan) DLC, the cost of hard wire, common equipment and DACS is $4,768. Appropriate in-plant factors for each state are applied.

- For low density (SLC 5) DLC, the cost of the hard wire, common equipment and DACS per additional line module is $2,809. This includes the additional cost for deferrable modules, removed from the initial modules in developing input B-61. Appropriate in-plant factors for each state are applied.

11. The number of additional modules that can be added to a remote terminal (B-69), for each high density DLC and the SLC 5 system for the low density DLC is as follows:

- 2 additional line modules for the DISC*S system.
- 8 additional line modules for the Litespan system.
- 9 additional line modules for a SLC 5 remote terminal.

Exhibit 12

Sensitive Input Group 10: Interoffice Investment

Exhibit 12

SENSITIVE INPUT GROUP 10: INTEROFFICE INVESTMENT

This Exhibit analyzes and evaluates HAI R5.0a default values, and identifies alternative values, for the following HAI R5.0a Appendix B user-adjustable inputs:

- B-107 Transmission Terminal Investment
- B-108 Number of Fibers
- B-109 Pigtails, per Strand
- B-110 Optical Distribution Panel
- B-111 E, F & I, per Hour
- B-115 Channel Bank Investment, per 24 Lines
- B-117 Digital Cross Connect System, Installed, per DS-3
- B-118 Transmission Terminal Fill
- B-119 Interoffice Fiber Cable Investment per Foot, Installed
- B-122 Transport Placement
- B-124 Interoffice Conduit, Cost and Number of Tubes

A description of each of these UAIs can be found in the HAI Model Release 5.0a Inputs Portfolio.

This Exhibit is structured in 3 parts: Part (1) identifies the UAIs in this Sensitive Input Group for which we have obtained forward-looking cost and other forward-looking data that is specific to BellSouth, Part (2) identifies the basis upon which MCI and AT&T state they have developed their default values for the UAIs in this Sensitive Input Group and contains some of our observations about these default values, and Part (3) identifies the alternative values to replace the default values in order to reflect forward-looking costs and other conditions, based on BellSouth data.

(1)
AVAILABILITY OF COST AND OTHER FORWARD-LOOKING DATA SPECIFIC TO BELLSOUTH

Forward-looking cost (*i.e.*, no embedded cost characteristics) and other forward-looking data specific to BellSouth have been obtained for the following user-adjustable inputs:

1. Input B-107 - Transmission Terminal Investment

2. Input B-108 - Number of Fibers