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July 9, 2010

Ann Cole, Commission Clerk
Office of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: **Docket No. 000121A-TP**

In Re: Investigation into the establishment of operations support systems permanent performance measures for incumbent local exchange Telecommunications companies (BellSouth Track)

Dear Ms. Cole:

Enclosed for filing are First Revised Attachment A (SQM Plan) and First Revised Attachment B (SEEM Plan) to the Settlement Agreement between the Competitive Carriers of the South ("CompSouth") and BellSouth Telecommunications, Inc. d/b/a AT&T Florida ("AT&T Florida") filed March 22, 2010 in the instant docket. The revised attachments reflect the agreement reached with CompSouth and incorporate all administrative changes as well as the provisions of the Settlement Agreement entered into between Saturn Telecommunications Service, Inc. ("STS"). The First Revised Attachments A and B replace the previously filed attachments in their entirety and are incorporated into the Settlement Agreement between CompSouth and AT&T Florida.

Copies have been served to the parties shown on the attached Certificate of Service.

- COM _____
- APA 5
- ECR _____
- GCL 2
- RAD _____
- SSC _____
- ADM _____
- OPC _____
- CLK _____

Enclosures

cc: All parties of record
Jerry D. Hendrix
Gregory R. Follensbee
E. Earl Edenfield, Jr.

Sincerely,

Tracy W. Hatch

DOCUMENT NUMBER-DATE

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Docket No. 000121A-TP

FLORIDA SEEM ADMINISTRATIVE PLAN

Florida Plan
Version 5.066.00

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Effective Date: ~~July 3, 2010~~ TBD

Note: This SEEM Administrative Plan version is issued to reflect the OSS architecture changes implemented on July 3, 2010.

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05661 JUL-9 9

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Contents	Page
Administrative Plan	1
1 - Scope.....	1
2 - Reporting.....	1
3 - Review of Measurements and Enforcement Mechanisms.....	21
4 - Enforcement Mechanisms.....	2
4.1 - Definitions.....	2
4.2 - Application.....	3
4.3 - Methodology.....	43
4.4 - Payment of Tier-1 and Tier-2.....	6
Amounts.....	
4.5 - Limitations of Liability.....	87
4.6 - Change of Law.....	99
4.7 - Affiliate Reporting.....	10
4.8 - Enforcement Mechanism.....	109
Cap.....	
4.9 - 8 -.....	10
Audits.....	
4.10 - 9 - Dispute.....	110
Resolution.....	
4.11 - 10 - Regional and State.....	11
Coefficients.....	
Appendix A: Fee Schedule	12
Table 1: Fee Schedule for Tier-1 Per Transaction Fee.....	12
Determination.....	
Table 2: Tier 2 Per Transaction Fee Determination.....	43
Appendix B: SEEM Submetrics	1413
B.1 - Tier-1 Submetrics.....	1413
B.2 - Tier 2 Submetrics.....	18
Appendix C: Statistical Properties and Definitions	2217
C.1 - Necessary Properties for a Test Methodology.....	2217
C.2 - Testing Methodology - The Truncated Z.....	2319
Appendix D: Statistical Formulas and Technical Descriptions	2722
D.1 - Notation and Exact Testing Distributions.....	2722
D.2 - Calculating the Truncated Z.....	3025
Appendix E: BSTAT&T SEEM Remedy Calculation	4036

Procedures.....	
E.1 – BSTAT&T SEEM Remedy	4036
Procedure.....	
E.2 – Tier-2 Calculation for Retail Analogs.....	42
E.3 – Tier -1 Calculation For	4639
Benchmarks.....	
E.4 – Tier-1 Calculation For Benchmarks (In The Form Of A	4840
Target).....	
E.5 – Tier 2 Calculations For Benchmarks.....	49
E.6 – Regional and State	4941
Coefficients.....	
Appendix F: BellSouth's AT&T's Policy on Reposting of Performance Data	
and Recalculation of SEEM	5243
Payments.....	

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Administrative Plan

1 Scope

1.1 This Administrative Plan (Plan) includes Service Quality Measurements (SQM) with corresponding Self Effectuating Enforcement Mechanisms (SEEM) to be implemented by BellSouthAT&T pursuant to Order No. PSC-07-0286-PAA-TP TBD issued on April 3, 2007TBD by the Florida Public Service Commission (the "Commission") in Docket No. 000121A-TP, and as confirmed by Consummating Order No. PSC-07-0395-CO-TPTBD, issued by the Commission on May 7, 2007TBD.

1.2 Upon the Effective Date of this Plan, all appendices referred to in this Plan will be located on the BellSouth Performance Measurements and Analysis PlatformAT&T performance measurement website at: <https://pmap.bellsouth.com> at <http://pmap.wholesale.att.com>.

2 Reporting

2.1 In providing services pursuant to the Interconnection Agreements between BellSouthAT&T and each CLEC, BellSouthAT&T will report its performance to each CLEC in accordance with BellSouth'sAT&T's SQMs and pay remedies in accordance with the applicable SEEM, which are posted on the AT&T Performance performance Measurement measurement Reports website.

2.2 BellSouth will make performance reports available to each CLEC on a monthly basis. The reports will contain information collected in each performance category and will be available to each CLEC via the Performance Measurements and Analysis Platform website. BellSouth will also provide electronic access to the raw data underlying the SQMs.

2.3 Final validated SQM reports will be posted no later than the last day of the month following the data month in which the activity is incurred, or the first business day thereafter. Final validated SQM reports not posted by this time will be considered late.

2.4 Final validated SEEM reports will be posted on the Performance Measurements and Analysis PlatformAT&T performance measurement website on the 15th of the month, following the posting of final validated SQM reports for that data month or the first business day thereafter.

2.5 BellSouth shall pay fines to the Commission, in the aggregate, for all late SQM and SEEM reports in the amount of \$2000 per day. Such payment shall be made to the Commission for deposit into the state General Revenue Fund within fifteen (15) calendar days of the end of the reporting month in which the late publication of the report occurs.

2.6 BellSouth shall pay fines to the Commission, in the aggregate, for all re-posted SQM reports in the amount of \$400 per day. If such re-posting is associated with any Data

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Florida SEEM Administrative Plan

Notification, a maximum of ninety (90) days may be deducted from the fine. The circumstances which may necessitate a reposting of SQM reports are detailed in Appendix F, Reposting of Performance Data and Recalculation of SEEM Payments. Such payments shall be made to the Commission for deposit into the state General Revenue Fund within fifteen (15) calendar days of the final publication date of the report or the report revision date.

2.7 Tier II SEEMS payments and Administrative fines for late and reposted reports will be sent to the Commission. Checks and the accompanying transmittal letter will be postmarked on or before the 15th of the month or the first business day thereafter, when the 15th falls on a non-business day.

2.83 BellSouthAT&T shall retain the performance measurement raw data files for a period of 18 months and further retain the monthly reports produced in PMAP for a period of three years.

2.94 BellSouthAT&T will provide documentation of late and reposted SQM and SEEM Reports during the reporting month that the data is posted to the website. These notations may be viewed on the Performance Measurements website from the PMAP home page on the Current Month Updates link.

3 Review of Measurements and Enforcement Mechanisms

3.1 BellSouth will participate in annual review cycles. A collaborative work group, which will include BellSouth, interested CLECs and the Commission will review the Performance Assessment Plan for additions, deletions or other modifications. After the first six months of data are available under this version of SEEM, the Florida PSC Staff will have a special one-time workshop to review the operation of the Plan. Thereafter, reviews will be on an annual basis. Review of Measurements

A workshop and/or conference shall be organized and held periodically or at the request of either party for the purpose of evaluating the existing remedies and determining whether any remedies should be deleted, modified or any new remedies added. Provided however, no new remedies shall be added which are already governed by existing remedies. A CLEC may actively participate in this periodic workshop with AT&T, other CLECs, and state regulatory authority representatives.

3.1.1 Administrative Changes

AT&T may make administrative changes that do not substantively change the SEEM Plan. Such changes are excluded from the periodic review process noted above. AT&T will provide written notice to the Commission regarding all administrative changes. An administrative change is one that corrects typographical, spelling, grammatical, or computational errors, updates website addresses and incorporates modifications to architecture implemented in an OSS release following the approved Change Management process. Administrative changes will not change the intent or the plan language of the

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document.

3.2 In the event a dispute arises regarding the ordered modification or amendment to the SQMs or SEEMs, the parties will refer the dispute to the Florida Public Service Commission.

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4 Enforcement Mechanisms

4.1 Definitions

4.1.1 Enforcement Measurement Elements – performance measurements identified as SEEM measurements within the SEEM Plan.

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4.1.2 Enforcement Measurement Benchmark compliance – level of performance established by the Commission used to evaluate the performance of BellSouthAT&T for CLECs where no analogous retail process, product or service is feasible.

4.1.3 Enforcement Measurement Retail Analog compliance – comparing performance levels provided to BellSouthAT&T retail customers with performance levels provided by BellSouthAT&T to the CLEC customer for measures where retail analogs apply.

4.1.4 Test Statistic and Balancing Critical Value – means by which enforcement will be determined using statistically valid equations/methods. The Test Statistic and Balancing Critical Value are set forth in Appendices C, D, and E of this Plan.

4.1.5 Cell – grouping of transactions at which like-to-like comparisons are made. For example, all BellSouthAT&T retail (POTS) services, for residential customers, requiring a dispatch in a particular wire center, at a particular point in time will be compared directly to CLEC resold services for residential customers, requiring a dispatch, in the same wire center, at a similar point in time. When determining compliance, these cells can have a positive or negative Test Statistic. See Appendices C, D and E of this Plan.

4.1.6 Delta, Psi and Epsilon, and Lambda – measures of the meaningful difference between BellSouthAT&T performance and CLEC performance. For individual CLECs or, the Delta (δ) value shall be 0.5 and for the CLEC aggregate the Delta value shall be 0.35. The value for Psi (ψ) shall be 3 for individual CLECs and 2 for the CLEC aggregate. The value for Epsilon (ϵ) will be 2.5 for the CLEC aggregate. The value of Lambda (λ) shall be 1 for both individual CLECs and the CLEC aggregate.

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Florida SEEM Administrative Plan

- 4.1.7 *Tier-1 Enforcement Mechanisms* – self-executing fees paid directly to each CLEC when BellSouthAT&T delivers non-compliant performance of any one of the Tier-1 Enforcement Measurement Elements for any month as calculated by BellSouthAT&T.
- 4.1.8 *Tier-2 Enforcement Mechanisms* – fees paid directly to the Florida Public Service Commission or its designee. Tier-2 Enforcement Mechanisms are triggered by three consecutive monthly failures at the submetric level in which BellSouth performance is out of compliance or does not meet the benchmarks for the aggregate of all CLEC data.
- 4.1.98 *Affiliate* – person that (directly or indirectly) owns or controls, is owned or controlled by, or is under common ownership or control with, another person. For purposes of this paragraph, the term “own” means to own an equity interest (or the equivalent thereof) of more than 10 Percent.
- 4.1.109 *Affected Volume* – that quantity of the total impacted CLEC volume or CLEC Aggregate volume for which remedies will be paid.
- 4.1.1410 *Cell Ranking* – placing cells in rank order from highest to lowest, where the cell with the most negative z-scoreZ-Score is ranked highest and the cell with the least negative z-scoreZ-Score is ranked lowest.
- 4.1.14211 *Cell Correction* – method for determining the quantity of transactions to be remedied, referred to as “affected volume,” wherein the cell-level modified z-scoreZ-Score for the highest ranked cell is first changed to zero (“corrected”) and then the next highest, progressively, until the overall level truncated z-scoreZ-Score is equal to the Balancing Critical Value as required by the Fee Schedule Remedy Calculation Procedures. Either all of the transactions in a corrected cells are remedied or a prorated share (determined through interpolation) are is remedied.

4.2 Application

- 4.2.1 The application of the Tier-1 and Tier-2 Enforcement Mechanisms does not foreclose other legal and regulatory claims and remedies available to each CLEC.
- 4.2.2 Payment of any Tier-1 or Tier-2 Enforcement Mechanisms shall not be considered as an admission against interest or an admission of liability or culpability in any legal, regulatory or other proceeding relating to BellSouth'sAT&T's performance and the payment of any Tier-1 or Tier-2 Enforcement Mechanisms shall not be used as evidence that BellSouthAT&T has not complied with or has violated any state or federal law or regulation.

4.3 Methodology

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Florida SEEM Administrative Plan

4.3.1 Tier-1 Enforcement Mechanisms will be triggered by BellSouth's AT&T's failure to achieve applicable Enforcement Measurement Compliance or Enforcement Measurement Benchmarks for each CLEC for the State of Florida for a given Enforcement Measurement Element in a given month. Enforcement Measurement Compliance is based upon a Test Statistic and Balancing Critical Value calculated by BellSouth AT&T utilizing BellSouth AT&T generated data. The method of calculation is set forth in Appendices C, D, and E of this Plan.

4.3.1.1 All OCNs and ACNAs for individual CLECs will be consolidated for purposes of calculating transaction-based failures.

4.3.1.2 When a measurement has five or more transactions for the CLEC, calculations will be performed to determine remedies according to the methodology described in the remainder of this document.

4.3.1.3 Tier-1 Enforcement Mechanisms apply on a per transaction basis and will escalate based upon the number of consecutive months that fail for each Enforcement Mechanism Element for which BellSouth AT&T has reported non-compliance. Failures beyond Month 6 will be subject to Month 6 fees. All transactions for an individual CLEC will be consolidated for purposes of calculating Tier-1 Enforcement Mechanisms.

4.3.1.4 For submetrics that are assessed based on Enforcement Measurement Retail Analog compliance criteria, the fee paid for a particular submetric that failed at the Tier-1 level will be differentiated based on two criteria. First, the Tier-1 fee paid will be based on whether the same submetric that failed at the Tier-1 level (CLEC-specific) also failed at the CLEC aggregate level in the same month. Second, the Tier-1 fee paid will be based on whether the transactions in the cells to be remedied correct the overall truncated z-score z-score from the region below the Balancing Critical Value ("BCV") to the BCV or from the BCV to zero. Depending on which of these criteria apply, a different multiplier will be applied to the Fee Schedule (shown in Appendix A, Table 1: Fee Schedule for Tier-1 Per Transaction Fee Determination) to determine the amount of the Tier-1 payments. The chart below shows the applicable multipliers:

CLEC Aggregate Performance	Per Transaction Fee Below BCV	Per Transaction Fee Between BCV and 0
Passes	(Fee)*(3/2)	(Fee)*(1/3)
Fails	(Fee)*(3)	(Fee)*(2/3)

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No multiplier applies for the Billing Invoice Accuracy measure.

4.3.1.5 For submetrics that are assessed based on Enforcement Measurement Benchmark compliance criteria the fee paid for a particular submetric that failed at the Tier-1 level will be differentiated based on whether the same submetric that failed at the Tier-1 level (CLEC-specific) also failed at the CLEC aggregate level in the same month. A different multiplier will be applied to the Fee Schedule (shown in Appendix A, Table 1: Fee Schedule for Tier-1 Per Transaction Fee Determination) to determine the amount of the Tier-1 payments. The chart below shows the applicable multipliers:

CLEC Aggregate Performance	Per Transaction Fee
Passes	(Fee)*(3/2)
Fails	(Fee)*(5/2) for Ordering and Flow Through (Fee)*(3) for all other benchmark measures

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4.3.2 Tier-2 Enforcement Mechanisms will be triggered by BellSouth's failure to achieve applicable Enforcement Measurement Compliance or Enforcement Measurement Benchmarks for the State of Florida for given Enforcement Measurement Elements for three consecutive months. The method of calculation is set forth in Appendices C, D, and E of this Plan.

4.3.2.1 Tier-2 Enforcement Mechanisms apply, for an aggregate of all CLEC data generated by BellSouth, on a per transaction basis for each Enforcement Mechanism Element for which BellSouth has reported non-compliance.

4.3.2.2 The fee paid for a particular submetric that failed at the Tier-2 level will be as shown in Appendix A, Table 2.

4.3.3.2 The Market Penetration Adjustments will be applied based on the following provisions to enhance competition for nascent products. In order to ensure parity and benchmark performance where CLECs order low volumes of advanced and nascent services, BellSouth-AT&T will make additional Tier-1 and Tier-2 payments where performance standards for the following measures are not met, if the measurement applies to the nascent service.

- Percent Missed Installation Appointments
- Average Completion Interval
- Missed Repair Appointments
- Maintenance Average Duration
- Average Response Time for Loop Make-up-Response Time-Electronic

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Florida SEEM Administrative Plan

Information

- 4.3.32.1 These additional payments will only apply when there are more than 10 and less than 100 average units in service statewide for the preceding three-month period. The additional payments in the form of a market penetration adjustment will be made if BellSouthAT&T fails to provide parity for the above measurements as determined by the use of the Truncated Z- test and the balancing critical value or fails to meet the established benchmark.
- 4.3.32.2 BellSouthAT&T shall calculate the new Tier-1Tier-1 and Tier-2 payments, which include the market penetration adjustment by applying the normal method of calculating affected volumes as ordered by the Commission and trebling the normal Tier-1 and Tier-2-remedy.
- 4.3.32.3 If, for the three months of data, there were 100 observations or more on average for the sub-metric, then no additional payments under this market penetration adjustment provision will be made. Further, market penetration adjustments shall no longer apply if 24 months have elapsed since the first unit of the nascent service was installed.
- 4.3.32.4 CLECs may file a petition with the Commission in order to add a service to the list of services for which the market penetration adjustment may apply.
- 4.3.32.5 Any payments made under this market penetration adjustment provision are subject to the Absolute Cap set by the Commission.

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4.3.4.3 For Tier 1Tier-1 and Tier 2 evaluations, the retail analog or benchmark areis the same as for the SQM. See the SQM for SEEM retail analogs and benchmarks.

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4.4 Payment of Tier-1 and Tier-2 Amounts

- 4.4.1 If BellSouthAT&T performance triggers an obligation to pay Tier-1 Enforcement Mechanisms to a CLEC or an obligation to remit Tier-2 Enforcement Mechanisms to the Commission or its designee, BellSouth, AT&T shall make payment in the required amount on the day upon which the final validated SEEM reports are posted on the Performance Measurements and Analysis PlatformAT&T website as set forth in Section 2.4 above.
- 4.4.2 For each day after the due date that BellSouthAT&T pays a CLEC less than the required Tier-1Tier-1 remedy, BellSouthAT&T will pay the CLEC 6%

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Florida SEEM Administrative Plan

simple interest per annum on the difference between the required amount and the amount previously paid. The underpayment and interest will be paid to the CLEC in the next month's payment cycle.

- 4.4.3 ~~For each day after the due date that BellSouth fails to pay the required Tier-2 Enforcement Mechanisms, BellSouth will pay the Commission an additional \$1,000 per day. If BellSouth pays less than the required amount, BellSouth will pay the Commission 12% simple interest per annum on the difference between the required amount and the amount previously paid. The underpayment and interest will be paid to the Commission in the next month's payment cycle.~~
- 4.4.43 If a CLEC disputes the amount paid for Tier-1 Enforcement Mechanisms, the CLEC shall submit a written claim to BellSouthAT&T within sixty (60) days after the payment date. BellSouthAT&T shall investigate all claims and provide the CLEC written findings within thirty (30) days after receipt of the claim. If BellSouthAT&T determines the CLEC is owed additional amounts, BellSouthAT&T shall pay the CLEC such additional amounts within thirty (30) days after its findings along with 6% simple interest per annum.
- 4.4.5 ~~For Tier-2 Enforcement Mechanisms, if the Commission requests clarification of an amount paid, a written claim shall be submitted to BellSouth within sixty (60) days after the payment date. BellSouth shall investigate all claims and provide the Commission written findings within thirty (30) days after receipt of the claim. If BellSouth determines the Commission is owed additional amounts, BellSouth shall pay such additional amounts within thirty (30) days after its findings along with 12% simple interest per annum.~~
- 4.4.64 Any adjustments for underpayment or overpayment of calculated Tier-1Tier-1 and Tier-2 remedies will be made consistent with the terms of BellSouth'sAT&T's Policy On Reposting Of Performance Data and Recalculation of SEEM Payments, as set forth in Appendix F of this document. If any circumstance necessitating remedy adjustments should occur that is not specifically addressed in the Reposting Policy, such adjustments will be made consistent with the terms defined in Paragraph 6-7 of the Reposting Policy. ~~(payments will be subject to recalculations for a maximum of three months in arrears unless the Florida Commission orders otherwise...)~~
- 4.4.75 Any adjustments for underpayment or overpayment will be made in the next month's payment cycle after the recalculation is made. The final current month PARIS reports will reflect the final paid dollars, including adjustments for prior months where applicable. Questions regarding the adjustments should be made in accordance with the normal process used to address CLEC questions related to SEEM payments.

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Florida SEEM Administrative Plan

4.4.75. If a SEEM overpayment is made to a CLEC, and ~~BellSouth's AT&T's~~ SEEM liability calculated and payable to that CLEC in the next month's payment cycle is insufficient to offset the amount of overpayment, then within 30 days of ~~BellSouth's AT&T's~~ request, the CLEC shall repay the amount necessary to satisfy the remaining SEEM overpayment balance. If the CLEC is unable to repay the overpayment at that time, the CLEC may contact ~~BellSouth AT&T~~ for payment arrangements.

4.4.86 Where there is a SEEM adjustment, in addition to the submetric, data month(s), and adjustment amount, ~~BellSouth AT&T~~ will include an adjustment code on the CLEC specific ~~Tier-1/Tier-1 or Tier-2~~ PARIS-reports on the ~~PMAP AT&T performance measurement website~~. Then, on a separate document under the ~~Exhibits link on the BellSouth PMAP AT&T performance measurement website~~, this code will be cross-referenced with a brief narrative description of the adjustment. These codes and descriptions will be applicable to all ~~States-states~~ where an adjustment was applied. If there are multiple adjustment codes, the code explanation document can be accessed under the Exhibits link on the AT&T performance measurement website that will contain all of the codes and the narrative descriptions for each code. An explanation of the cause of the adjustment and the data months impacted by the adjustment will be included in the narrative.

4.5 Limitations of Liability

4.5.1 ~~BellSouth AT&T~~ will not be obligated to pay ~~Tier-1 or Tier-2~~ Enforcement Mechanisms for non-compliance with a performance measure if such non-compliance results from a CLEC's acts or omissions that cause failed or missed performance measures. These acts or omissions include but are not limited to, accumulation and submission of orders at unreasonable quantities or times, failure to follow publicly available procedures, or failure to submit accurate orders or inquiries. ~~BellSouth AT&T~~ shall provide each CLEC and the Commission with reasonable notice of, and supporting documentation for, such acts or omissions. Each CLEC shall have 10 business days from the filing of such Notice to advise ~~BellSouth AT&T~~ and the Commission in writing of its intent to challenge, through the dispute resolution provisions of this plan, the claims made by ~~BellSouth BellSouth AT&T AT&T~~. ~~AT&T~~ shall not be obligated to pay any amounts subject to such disputes until the dispute is resolved.

4.5.2 ~~BellSouth AT&T~~ shall not be obligated to pay ~~Tier-1 or Tier-2~~ Enforcement Mechanisms (SEEM payments) for non-compliance with a performance measurement if such non-compliance was the result of any Force Majeure Event that either directly or indirectly prevented, restricted, or interfered with performance as measured by the SQM/SEEM Plan. Such Force Majeure

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Florida SEEM Administrative Plan

Events include non-compliance caused by reason of fire, flood, earthquake or like acts of God, wars, revolution, civil commotion, explosion, acts of public enemy, embargo, acts of the government in its sovereign capacity, labor difficulties, including without limitation, strikes, slowdowns, picketing, or boycotts, or any other circumstances beyond the reasonable control and without the fault or negligence of BellSouthAT&T. BellSouthAT&T, upon giving prompt notice to the Commission and CLECs as provided below, shall be excused from such performance on a day-to-day basis to the extent of such prevention, restriction, or interference; provided, however, that BellSouthAT&T shall use diligent efforts to avoid or remove such causes of non-performance.

- 4.5.2.1 To invoke the application of Section 4.5.2 (Force Majeure Event), BellSouthAT&T will provide written notice to the Commission and post notification of such filing on BellSouth'sAT&T's website wherein BellSouthAT&T will identify the Force Majeure Event, the affected measures, and, if applicable, the impacted wire centers, including affected NPAs and NXXs.
- 4.5.2.2 No later than ten (10) business days after BellSouthAT&T provides written notice in accordance with Section 4.5.2.1 affected CLECs must file written comments with the Commission to the extent such CLECs have objections or concerns regarding the application of Section 4.5.2. CLECs will be required to show that the relief is not reasonable under the circumstances.
- 4.5.2.3 BellSouth'sAT&T's written notice of the applicability of Section 4.5.2 shall be presumptively valid and deemed approved by the Commission effective thirty (30) calendar days after BellSouthAT&T provides notice in accordance with Section 4.5.2.1. The Commission may require BellSouthAT&T to provide a true-up of SEEM fees to affected CLECs if a Force Majeure Event declaration (or some portion thereof) is found to be invalid by the Commission after it has taken effect.
- 4.5.2.4 During the pendency of a Force Majeure Event, BellSouthAT&T shall file with the Commission periodic updates of its restoration/recovery progress and efforts as agreed upon between the Commission Staff and BellSouth-AT&T. The Commission Staff will consider reasonable requests from affected carriers on such updates' contents and frequency, including the need for weekly progress update reports. Additionally, BellSouthfor Force Majeure events directly impacting a geographic area of the network infrastructure, AT&T will post to the Emergency Preparedness and RestorationAT&T website

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Florida SEEM Administrative Plan

~~(<https://clec.att.com/clec/shell.cfm?section=2535>) periodic updates of its restoration/recovery progress and efforts. BellSouthAT&T will post at a minimum for the area where Force Majeure has been declared where applicable; the identity of each wire center and associated NPA/NXXs; and the wire centers' color coded Area Dispatch Status report; status of wire centers based on the Emergency Preparedness and Restoration guidelines; the total number of BellSouth-AT&T pending service orders; the total number of CLEC pending service orders; the total number of BellSouth-AT&T pending trouble reports; and the total number of CLEC pending trouble reports.~~

4.5.2.5 The Force Majeure claim will be presumptively valid for a period of sixty (60) calendar days. After sixty (60) calendar days have elapsed, BellSouthAT&T shall resume compliance with the Enforcement Mechanisms or file for an extension of the relief period. To the extent CLECs have objections or concerns regarding the extension, CLECs must file written comments with the Commission within ten (10) business days from the request of the extension. CLECs will be required to show that the extended period was not reasonable under the circumstances. BellSouth'sAT&T's request for extension shall be presumptively valid and deemed approved by the Commission effective thirty (30) calendar days after BellSouthAT&T provides notice in accordance with Section 4.5.2.1 The Commission may require BellSouthAT&T to provide a true-up of SEEM payments to affected CLECs if a Force Majeure Event (or some portion thereof) is found to be invalid by the Commission after it has taken effect.

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4.5.3 In addition to these specific limitations of liability, BellSouthAT&T may petition the Commission to consider relief based upon other circumstances.

4.6 Change of Law

4.6.1 Upon a particular Commission's issuance of an Order pertaining to Performance Measurements or Remedy Plans in a proceeding expressly applicable to all CLECs, BellSouthAT&T shall implement such performance measures and remedy plans covering its performance for the CLECs, as well as any changes to those plans ordered by the Commission, on the date specified by the Commission. If a change of law occurs which may change BellSouth'sAT&T's obligations, parties may petition the Commission within 30 days to seek changes to the SQM and SEEM plans in accordance with such change of law. Performance Measurements and remedy plans that have been ordered by the Commission can currently be accessed via the Internet

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Florida SEEM Administrative Plan

at AT&T performance measurement website ~~http://pmap.bellsouth.com~~. Should there be any difference between the performance measure and remedy plans on BellSouth's AT&T's website and the plans the Commission has approved as filed in compliance with its orders, the Commission-approved compliance plan will supersede as of its effective date.

Field Code Changed

4.7 Affiliate Reporting

4.7.1 BellSouth shall provide monthly results for each metric for each BellSouth CLEC affiliate. Upon request, the Florida Public Service Commission shall be provided the number of transactions or observations for BellSouth CLEC affiliates. Further, BellSouth shall inform the Commission of any changes regarding non-CLEC affiliates' use of its OSS databases, systems, and interfaces.

4.87 Enforcement Mechanism Cap

4.87.1 BellSouth's AT&T's total liability for the payment of Tier-1 and Tier-2 Enforcement Mechanisms shall be collectively and absolutely capped at 36% of net revenues in Florida, based upon the most recently reported ARMIS data.

4.87.2 If projected payments exceed the state cap, a proportional payment will be made to the respective parties.

4.87.3 If BellSouth's AT&T's payment of Tier-1 and Tier-2 Enforcement Mechanisms would have exceeded the cap referenced in this plan, a CLEC may commence a proceeding with the Commission to demonstrate why BellSouth AT&T should pay any amount in excess of the cap. The CLEC shall have the burden of proof to demonstrate why, under the circumstances, BellSouth AT&T should have additional liability.

4.98 Audits

4.98.1 BellSouth AT&T currently provides CLECs with certain audit rights as a part of their individual interconnection agreements. If requested ordered by a the Public Service Commission, BellSouth AT&T will agree to undergo a SEEM audit. Unless otherwise agreed between AT&T and the Public Service Commission, the audit should be conducted by an independent third party auditor. The results of audits will be made available to all the parties subject to proper safeguards to protect proprietary information. Audits will be conducted under the following specifications:

4.98.1.1 The cost of one audit per version of the SEEM plan shall be borne by BellSouth AT&T.

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Florida SEEM Administrative Plan

4.98.1.2 Should an independent third party auditor be required, it shall be selected by BellSouthAT&T and the PSC.

4.98.1.3 BellSouthAT&T and the PSC shall jointly determine the scope of the audit.

4.8.1.4 Per Plan version, there will not be redundant audits of one or more of the same AT&T system(s) or of Plan results or data for the same reported months, absent a showing of prior audit error or changed circumstances.

4.98.1.45 The PSC may request input regarding selection of the auditor from interested parties.

4.98.2 These audits are intended to provide the basis for the PSCs and CLECs to determine that SEEM produces accurate data that reflects each State's Order for performance measurements.

4.409 Dispute Resolution

4.409.1 Notwithstanding any other provision of the Interconnection Agreement between BellSouthAT&T and each CLEC, if a any-dispute arises regarding BellSouth'sAT&T's performance or obligations pursuant to this Plan, BellSouthAT&T and the CLEC shall negotiate in good faith for a period of thirty (30) days to resolve the dispute. If at the conclusion of the 30 day period, BellSouthAT&T and the CLEC are unable to reach a resolution, then the dispute shall be resolved by the Commission.

4.411 Regional and State Coefficients

Some metrics are calculated for the entire BellSouth-AT&T Southeast region, rather than by state. Where these metrics are a Tier-1 SEEM submetric, a regional coefficient is calculated to determine the amount of the remedy for the CLEC in each state. For example, the Acknowledgement Completeness Measurement can be measured for an individual CLEC, but only at the regional level. In several states it is also a Tier-1 SEEM submetric. Thus, if there is a failure in this measurement for a CLEC, it is necessary to determine the amount of remedy for the CLEC in each state. A Regional Coefficient is used to do this. (Appendix E, Section E.6-4 describes the method of calculating the Regional Coefficients.) The amount of Tier-1 remedy for the CLEC in a state is determined by multiplying the regional affected volume by the Coefficient for the state and by the state fee.

A state coefficient is calculated to split Tier-2 payments for regional metrics among states by submetric.

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Appendix A: Fee Schedule

Table 1: Fee Schedule for Tier-1 Per Transaction Fee Determination

Performance Measure	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
OSS/Pre-Ordering	\$10	\$15	\$24	\$30	\$36	\$42
Ordering	\$20	\$25	\$36	\$42	\$48	\$54
Service Order Accuracy	\$20	\$20	\$24	\$24	\$24	\$24
Flow Through	\$40	\$45	\$60	\$66	\$72	\$78
Provisioning – Resale	\$40	\$50	\$84	\$120	\$156	\$240
Provisioning – UNE	\$115	\$130	\$174	\$192	\$228	\$276
Maintenance and Repair – Resale	\$40	\$50	\$84	\$120	\$156	\$240
Maintenance and Repair – UNE	\$115	\$130	\$174	\$192	\$228	\$276
LNP	\$115	\$190	\$462	\$552	\$642	\$738
Billing – BIA (see Note 1)	2%	2%	2%	2%	2%	2%
Billing – BIT	\$7	\$7	\$7	\$7	\$7	\$7
Billing – BUDT (see Note 2)	\$0.046	\$0.046	\$0.046	\$0.046	\$0.046	\$0.046
Billing – BEC (see note Note 3)	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.07
IC Trunks (Trunk Group Performance)	\$25	\$30	\$54	\$78	\$96	\$150
Collocation	\$3,165	\$3,165	\$3,165	\$3,165	\$3,165	\$3,165

Note 1: Reflects percent interest to be paid on adjusted amounts.
 Note 2: Amount paid per 1000 usage records.
 Note 3: Amount paid per dispute.

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Appendix B: SEEM Submetrics

B.1 Tier-1 Submetrics

Item No.	SQM Ref	Tier-1 Submetric	
1	LMT	PO-2 Loop Makeup – Response Time – Electronic - Loop	
2	AKC	O-2 Acknowledgement Message Completeness - Acknowledgments	Formatted Table Formatted: Indent: Left: 0", Hanging: 0.25"
3	FT	O-3 Percent Flow-Through Service Requests – Business	
4	FT	O-3 Percent Flow-Through Service Requests – LNP	
5	FT	O-3 Percent Flow-Through Service Requests – Residence	Formatted Table Formatted: Left, Indent: Left: 0.25"
6	FT	O-3 Percent Flow-Through Service Requests – UNE-L (includes UNE-L with LNP)	Formatted: Indent: Left: 0", Hanging: 0.25"
7	RI	O-8 Reject Interval – Fully Mechanized	Formatted: Left, Indent: Left: 0.25"
8	RI	O-8 Reject Interval – Partially Mechanized	Formatted: Indent: Left: 0", Hanging: 0.25"
9	RI	O-8 Reject Interval – Non-Mechanized <u>Email</u>	
10	FOCT	O-9 Firm Order Confirmation Timeliness - Fully Mechanized	
11	FOCT	O-9 Firm Order Confirmation Timeliness - Partially Mechanized	
12	FOCT	O-9 Firm Order Confirmation Timeliness - Non-Mechanized <u>Email</u>	
13	FOCT	O-9 Firm Order Confirmation Timeliness – Local Interconnection Trunks	
14	FOCC	O-11 FOC & Reject Response Completeness – Fully Mechanized	Formatted Table Formatted: Indent: Left: 0", Hanging: 0.25"
15	FOCC	O-11 FOC & Reject Response Completeness – Partially Mechanized	Formatted: Indent: Left: 0", Hanging: 0.25"
16	FOCC	O-11 FOC & Reject Response Completeness – Non-Mechanized <u>Email</u>	Formatted: Indent: Left: 0", Hanging: 0.25"
17	MIA	P-3 Percent Missed Installation Appointments – Resale POTS	
18	MIA	P-3 Percent Missed Installation Appointments – Resale Design	
19	MIA	P-3 Percent Missed Installation Appointments – UNE Loops – Design	Formatted: Normal, Right: 0", No widow/orphan control, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers, Tab stops: 5.75", Left
20	MIA	P-3 Percent Missed Installation Appointments – UNE EELS	
2021	MIA	P-3 Percent Missed Installation Appointments – UNE Loops – Non-Design	Formatted: Font: Times New Roman, 8 pt, Font color: Black



Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier-1 Submetric	
21	MIA	P-3 Percent Missed Installation Appointments – UNE xDSL and Line Splitting	
22	MIA	P-3 Percent Missed Installation Appointments – UNE Line Splitting	Formatted: Indent: Left: 0.25", No bullets or numbering
23	MIA	P-3 Percent Missed Installation Appointments – LNP Standalone	Formatted: Indent: Left: 0.25"
24	MIA	P-3 Percent Missed Installation Appointments – Local Interconnection Trunks	Formatted Table
25	OCI	P-4 Order Completion Interval (OCI) – Resale POTS	Formatted: Indent: Left: 0", Hanging: 0.25"
26	OCI	P-4 Order Completion Interval (OCI) – Resale Design	
27	OCI	P-4 Order Completion Interval (OCI) – UNE Loop Design	
28	OCI	P-4 Order Completion Interval (OCI) – UNE Loop Non-Design	
29	OCI	P-4 Order Completion Interval (OCI) – UNE xDSL and Line Splitting – without conditioning	
30	OCI	P-4 Order Completion Interval (OCI) – UNE xDSL and Line Splitting – with conditioning	Formatted: Indent: Left: 0", Hanging: 0.25"
31	OCI	P-4 Order Completion Interval (OCI) – UNE Line Splitting Dispatch	Formatted Table
32	OCI	P-4 Order Completion Interval (OCI) – UNE Line Splitting Non-Dispatch	
33	OCI	P-4 Order Completion Interval (OCI) – Local interconnection Trunks	
34	OCI	P-4 Order Completion Interval (OCI) – UNE EELS	
35	CCI	P-7 Coordinated Customer Conversions – Hot Cut Durations	
36	CCT	P-7A Coordinated Customer Conversions – Hot Cut Timeliness Percent within Interval	
37	NCDD	P-7D Non-Coordinated Customer Conversions – Percent Completed and Notified on Due Date	
38	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – Resale POTS	
39	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – Resale Design	
40	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE Loops - Design	Formatted: Indent: Left: 0.25", No bullets or numbering
41	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE Loops – Non-Design	Formatted Table
42	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE xDSL and Line Splitting	Formatted: Indent: Left: 0", Hanging: 0.25"
43	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE xDSL and Line Splitting	Formatted: Indent: Left: 0.25"
44	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE xDSL and Line Splitting	Formatted: Normal, Right: 0", No widow/orphan control, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers, Tab stops: 5.75", Left
45	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate – UNE xDSL and Line Splitting	Formatted: Font: Times New Roman, 8 pt, Font color: Black



Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier-1 Submetric	
		Line Splitting - Dispatch	
44	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion - UNE Line Splitting - Non-Dispatch	Formatted: Indent: Left: 0.25", No bullets or numbering
45	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion Provisioning Trouble Rate - Local Interconnection Trunks	Formatted: Indent: Left: 0", Hanging: 0.25" Formatted: Indent: Left: 0.25"
46	SOA	P-11 Service Order Accuracy - Resale	
47	SOA	P-11 Service Order Accuracy - UNE	Formatted: Indent: Left: 0.25", No bullets or numbering
48	LOOS	P-13B LNP - Percent Out of Service < 60 Minutes - LNP	Formatted: Indent: Left: 0.05", Hanging: 0.2"
49	LAT	P-13C LNP Percent of Time BellSouth-AT&T Applies the 10-Digit Trigger Prior to the LNP Order Due Date - LNP - (Standalone)	Formatted: Indent: Left: 0", Hanging: 0.25" Formatted Table
50	LDT	P-13D LNP - Disconnect Timeliness (Non-Trigger)	Formatted Table
51	MRA	MR-1 Percent Missed Repair Appointment - Resale POTS	Formatted: Indent: Left: 0", Hanging: 0.25"
52	MRA	MR-1 Percent Missed Repair Appointment - Resale Design	
53	MRA	MR-1 Percent Missed Repair Appointment - UNE Loops Design	
54	MRA	MR-1 Percent Missed Repair Appointment - UNE EELS	
55	MRA	MR-1 Percent Missed Repair Appointment - UNE Loops Non-Design	
56	MRA	MR-1 Percent Missed Repair Appointment - UNE xDSL and Line Splitting	
57	MRA	MR-1 Percent Missed Repair Appointment - UNE Line Splitting	Formatted: Indent: Left: 0.25", No bullets or numbering
58	MRA	MR-1 Percent Missed Repair Appointment - Local Interconnection Trunks	Formatted Table
59	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - Resale POTS	Formatted: Indent: Left: -0.01", Hanging: 0.26" Formatted: Indent: Left: 0", Hanging: 0.25"
60	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - Resale Design	
61	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - UNE Loops Design	Formatted: Indent: Left: 0.25", No bullets or numbering
62	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - UNE Loops Non-Design	Formatted Table
63	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - UNE xDSL and Line Splitting	Formatted: Indent: Left: 0", Hanging: 0.25" Formatted: Indent: Left: 0", Hanging: 0.25"
64	CTRR	MR-2 Customer Trouble Report Rate - UNE Line Splitting	Formatted: Normal, Right: 0", No widow/orphan control, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers, Tab stops: 5.75", Left Formatted: Font: Times New Roman, 8 pt, Font color: Black



Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier-1 Submetric	
6458	CTRR-NPRR	MR-2A Customer Trouble Report Rate Net of Provisioning Troubles and Repeat Reports MR-2 Customer Trouble Report Rate - Local Interconnection Trunks	
6559	MAD	MR-3 Maintenance Average Duration - Resale POTS	Formatted: English (U.S.)
6660	MAD	MR-3 Maintenance Average Duration - Resale Design	Formatted: English (U.S.)
6761	MAD	MR-3 Maintenance Average Duration - UNE Loops Design	Formatted: English (U.S.)
6862	MAD	MR-3 Maintenance Average Duration - UNE EELS	Formatted: English (U.S.)
6863	MAD	MR-3 Maintenance Average Duration - UNE Loops Non-Design	Formatted: English (U.S.)
6964	MAD	MR-3 Maintenance Average Duration - UNE xDSL and Line Splitting	Formatted: English (U.S.)
70	MAD	MR-3 Maintenance Average Duration - UNE Line Splitting	Formatted: Indent: Left: 0.25", No bullets or numbering
7165	MAD	MR-3 Maintenance Average Duration - Local Interconnection Trunks	Formatted Table
7266	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - Resale POTS	Formatted: Indent: Left: 0.05", Hanging: 0.2"
7367	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - Resale Design	Formatted: Indent: Left: 0", Hanging: 0.25"
7468	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - UNE Loops Design	Formatted: Indent: Left: 0.25", No bullets or numbering
7569	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - UNE Loops Non-Design	Formatted: Indent: Left: 0", Hanging: 0.25"
7670	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - UNE xDSL and Line Splitting	Formatted Table
77	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - UNE Line Splitting	Formatted: Indent: Left: 0.25", No bullets or numbering
7871	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days - Local Interconnection Trunks	Formatted Table
7972	OOS	MR-5 Out of Service (OOS) > 24 hours - Resale POTS	Formatted: Indent: Left: -0.01", Hanging: 0.26"
8073	OOS	MR-5 Out of Service (OOS) > 24 hours - Resale Design	Formatted: Indent: Left: 0", Hanging: 0.25"
8174	OOS	MR-5 Out of Service (OOS) > 24 hours - UNE Loops Design	Formatted Table
8275	OOS	MR-5 Out of Service (OOS) > 24 hours - UNE Loops Non-Design	Formatted: Left, Indent: Left: 0.24", Hanging: 0.01"
8376	OOS	MR-5 Out of Service (OOS) > 24 hours - UNE xDSL and Line Splitting	Formatted: Indent: Left: 0", Hanging: 0.25"
84	OOS	MR-5 Out of Service (OOS) > 24 hours - UNE Line Splitting	Formatted: Left, Indent: Left: 0.25"
8577	OOS	MR-5 Out of Service (OOS) > 24 hours - Local Interconnection Trunks	Formatted: Indent: Left: 0", Hanging: 0.25"
8678	BIA	B-1 Invoice Accuracy	Formatted: Normal, Right: 0", No widow/orphan control, Don't adjust space between Latin and Asian text, Don't adjust space between Asian text and numbers, Tab stops: 5.75", Left
8779	BIT	B-2 Mean Time to Deliver Invoices - CRIS	
8880	BIT	B-2 Mean Time to Deliver Invoices - CABS	Formatted: Font: Times New Roman, 8 pt, Font color: Black



Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier-1 Submetric
8981	BUDT	B-5 Usage Data Delivery Timeliness
9082	BEC	B-10 Percent Billing Adjustment Requests (BAR) Responded to within 45 Business Days - State
9183	TGP	TGP Trunk Group Performance
9284	MDD	C-3 Collocation Percent of Due Dates Missed

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B.2 Tier-2 Submetrics

Item No.	SQM Ref	Tier-2 Submetric
1	ARI	OSS-1 OSS Response Interval (Pre-Ordering/Ordering) - Enhanced Verigate
2	ARI	OSS-1 OSS Response Interval (Pre-Ordering/Ordering) - LEX
3	ARI	OSS-1 OSS Response Interval (Pre-Ordering/Ordering) - XML Gateway
4	ARI	OSS-1 OSS Response Interval (Maintenance & Repair)
5	IA	OSS-2 OSS Interface Availability (Pre-Ordering/Ordering) - Regional per OSS Interface
6	IA	OSS-2 OSS Interface Availability (Maintenance & Repair) - Regional per OSS Interface
7	LMT	PO-2 Loop Makeup - Response Time - Electronic - Loop
8	AKC	O-2 Acknowledgement Message Completeness - Acknowledgments
9	FT	O-3 Percent Flow Through Service Requests - Business
10	FT	O-3 Percent Flow Through Service Requests - LNP
11	FT	O-3 Percent Flow Through Service Requests - Residence
12	FT	O-3 Percent Flow Through Service Requests - UNE-L (includes UNE-L with LNP)
13	RI	O-8 Reject Interval - Fully Mechanized
14	RI	O-8 Reject Interval - Partially Mechanized
15	RI	O-8 Reject Interval - Non Mechanized
16	FOCT	O-9 Firm Order Confirmation Timeliness - Fully Mechanized
17	FOCT	O-9 Firm Order Confirmation Timeliness - Partially Mechanized
18	FOCT	O-9 Firm Order Confirmation Timeliness - Non Mechanized
19	FOCT	O-9 Firm Order Confirmation Timeliness - Local Interconnection Trunks
20	FOCC	O-11 FOC & Reject Response Completeness - Fully Mechanized
21	FOCC	O-11 FOC & Reject Response Completeness - Partially Mechanized
22	FOCC	O-11 FOC & Reject Response Completeness - Non Mechanized
23	GAAT	O-12 Average Answer Time - Ordering Centers - GLEC Local Carrier Service Center
24	MIA	P-3 Percent Missed Installation Appointments - Resale POTS

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Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier-2 Submetric
26	MIA	P-3 Percent Missed Installation Appointments — Resale Design
26	MIA	P-3 Percent Missed Installation Appointments — UNE Loops — Design
27	MIA	P-3 Percent Missed Installation Appointments — UNE Loops — Non-Design
28	MIA	P-3 Percent Missed Installation Appointments — UNE xDSL
29	MIA	P-3 Percent Missed Installation Appointments — UNE Line Splitting
30	MIA	P-3 Percent Missed Installation Appointments — LNP Standalone
31	MIA	P-3 Percent Missed Installation Appointments — Local Interconnection Trunks
32	OCI	P-4 Order Completion Interval (OCI) — Resale POTS
33	OCI	P-4 Order Completion Interval (OCI) — Resale Design
34	OCI	P-4 Order Completion Interval (OCI) — UNE Loop Design
35	OCI	P-4 Order Completion Interval (OCI) — UNE Loop Non-Design
36	OCI	P-4 Order Completion Interval (OCI) — UNE xDSL — without conditioning
37	OCI	P-4 Order Completion Interval (OCI) — UNE xDSL — with conditioning
38	OCI	P-4 Order Completion Interval (OCI) — UNE Line Splitting Dispatch
39	OCI	P-4 Order Completion Interval (OCI) — UNE Line Splitting — Non-Dispatch
40	OCI	P-4 Order Completion Interval (OCI) — Local Interconnection Trunks
41	OCI	P-4 Order Completion Interval (OCI) — UNE EELS
42	GCI	P-7 Coordinated Customer Conversions — Hot-Cut Durations
43	CCT	P-7A Coordinated Customer Conversions — Hot-Cut Timeliness Percent within Interval
44	NGDD	P-7D Non-Coordinated Customer Conversions — Percent Completed and Notified on Due Date
45	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — Resale POTS
46	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — Resale Design
47	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — UNE Loops Design
48	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — UNE Loops Non-Design

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Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier 2 Submetric
49	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — UNE xDSL
50	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — UNE Line Splitting — Dispatch
51	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — UNE Line Splitting — Non-Dispatch
52	PPT	P-9 Percent Provisioning Troubles within X days of Service Order Completion — Local Interconnection Trunks
53	SGA	P-11 Service Order Accuracy — Resale
54	SGA	P-11 Service Order Accuracy — UNE
55	LOOS	P-13B LNP — Percent Out of Service < 60 Minutes — LNP
56	LAT	P-13C LNP Percent of Time BellSouth Applies the 10-Digit Trigger Prior to the LNP Order Due Date — LNP (Standalone)
57	LDT	P-13D LNP — Disconnect Timeliness (Non-Trigger)
58	MRA	MR-1 Percent Missed Repair Appointment — Resale POTS
59	MRA	MR-1 Percent Missed Repair Appointment — Resale Design
60	MRA	MR-1 Percent Missed Repair Appointment — UNE Loops Design
61	MRA	MR-1 Percent Missed Repair Appointment — UNE Loops Non-Design
62	MRA	MR-1 Percent Missed Repair Appointment — UNE xDSL
63	MRA	MR-1 Percent Missed Repair Appointment — UNE Line Splitting
64	MRA	MR-1 Percent Missed Repair Appointment — Local Interconnection Trunks
65	GTRR	MR-2 Customer Trouble Report Rate — Resale POTS
66	GTRR	MR-2 Customer Trouble Report Rate — Resale Design
67	GTRR	MR-2 Customer Trouble Report Rate — UNE Loops Design
68	GTRR	MR-2 Customer Trouble Report Rate — UNE Loops Non-Design
69	GTRR	MR-2 Customer Trouble Report Rate — UNE xDSL
70	GTRR	MR-2 Customer Trouble Report Rate — UNE Line Splitting
71	GTRR	MR-2 Customer Trouble Report Rate — Local Interconnection Trunks
72	MAD	MR-3 Maintenance Average Duration — Resale POTS

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Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier 2 Submetric
73	MAD	MR-3 Maintenance Average Duration — Resale Design
74	MAD	MR-3 Maintenance Average Duration — UNE Loops Design
75	MAD	MR-3 Maintenance Average Duration — UNE Loops Non-Design
76	MAD	MR-3 Maintenance Average Duration — UNE xDSL
77	MAD	MR-3 Maintenance Average Duration — UNE Line Splitting
78	MAD	MR-3 Maintenance Average Duration — Local Interconnection Trunks
79	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — Resale POTS
80	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — Resale Design
81	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — UNE Loops Design
82	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — UNE Loops Non-Design
83	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — UNE xDSL
84	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — UNE Line Splitting
85	PRT	MR-4 Percent Repeat Customer Troubles within 30 Days — Local Interconnection Trunks
86	OOS	MR-5 Out of Service (OOS) > 24 hours — Resale POTS
87	OOS	MR-5 Out of Service (OOS) > 24 hours — Resale Design
88	OOS	MR-5 Out of Service (OOS) > 24 hours — UNE Loops Design
89	OOS	MR-5 Out of Service (OOS) > 24 hours — UNE Loops Non-Design
90	OOS	MR-5 Out of Service (OOS) > 24 hours — UNE xDSL
91	OOS	MR-5 Out of Service (OOS) > 24 hours — UNE Line Splitting
92	OOS	MR-5 Out of Service (OOS) > 24 hours — Local Interconnection Trunks
93	BIA	B-1 Invoice Accuracy
94	BIT	B-2 Mean Time to Deliver Invoices — CRIS
95	BIT	B-2 Mean Time to Deliver Invoices — CABS
96	BUDT	B-5 Usage Data Delivery Timeliness
97	BEC	B-10 Percent Billing Adjustment Requests (BAR) Responded to within 45 Business Days State
98	TGP	TGP Trunk Group Performance

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Appendix B: SEEM Submetrics

Item No.	SQM Ref	Tier 2 Submetric
99	MDD	G-3 Collocation Percent of Due Dates Missed
100	NT	GM-1 Timeliness of Change Management Notices—Region
101	DT	GM-3 Timeliness of Documentation Associated with Change—Region
102	SEC	GM-6 Percentage of Software Errors Corrected in "X" Business Days—Region
103	CRA	GM-7 Percentage of Change Requests Accepted or Rejected Within 10 Days—Region
104	SCRI	GM-11 Percentage of Software Change Requests Implemented Within 60 Weeks of Prioritization—Region

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Appendix C: Statistical Properties and Definitions

The statistical process for testing whether BellSouth's (BST) AT&T's wholesale customers (alternative-Competitive Local eExchange eCarriers or CLECs) are being treated equally with BST's AT&T's retail customers involves more than a simple mathematical formula. Three key elements need to be considered before an appropriate decision process can be developed. These are the type of:

- Data
- Comparison
- Performance

This section describes the properties of a test methodology and the truncated Z statistic for three types of measures that compare CLEC's performance to AT&T's retail analog.

C.1 Necessary Properties for a Test Methodology

Once the key elements are determined, a test methodology should be developed that complies with the following properties:

- Like-to-Like Comparisons
- Overall Level Test Statistic
- Production Mode Process
- Balancing

C.1.1 Like-to-Like Comparisons

When possible, data should be compared at appropriate levels, e.g. wire center, time of month, dispatched residential, new orders. The testing process should:

- Identify variables that may affect the performance measure
- Record these important confounding covariates
- Adjust for the observed covariates in order to remove potential biases and to make the CLEC and the ILEC units as comparable as possible

C.1.2 Overall Level Test Statistic

Each performance measure of interest should be summarized by one overall test statistic giving the decision maker a rule that determines whether a statistically significant difference exists. The test statistic should have the following properties:

- The method should provide a single overall index on a standard scale.
- If entries in comparison cells are exactly proportional over a covariate, the aggregated index should be very nearly the same as if comparisons on the covariate had not been done.
- The contribution of each comparison cell should depend on the number of

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Appendix C: Statistical Properties and Definitions

- observations in the cell.
- Cancellation between comparison cells should be limited.
- The index should be a continuous function of the observations.

C.1.3 Production Mode Process

The decision system must be developed so that it does not require intermediate manual intervention, i.e., the process must be mechanized to the extent possible.

- Calculations are well defined for possible eventualities.
- The decision process is an algorithm that needs no manual intervention.
- Results should be arrived at in a timely manner.
- The system must recognize that resources are needed for other performance measure-related processes that also must be run in a timely manner.
- The system should be auditable and adjustable over time.

C.1.4 Balancing

The testing methodology should balance Type I and Type II Error probabilities.

- $P(\text{Type I Error}) = P(\text{Type II Error})$ for well-defined null and alternative hypotheses.
- The formula for a test's balancing critical value should be simple enough to calculate using standard mathematical functions, i.e., one should avoid methods that require computationally intensive techniques.
- Little to no information beyond the null hypothesis, the alternative hypothesis, and the number of observations should be required for calculating the balancing critical value.

C.1.5 Measurement Types

The performance measurements that will undergo testing are of three types: mean, proportion, and rate. All three have similar characteristics. Different types of data are used to calculate them. Table C-1 shows the type of data that is used to derive each measurement type.

Table C-1: Measurement Types and Data

Measurement Type	Data Used to Derive Measure
Mean	Interval Measurements
Proportion	Counts
Rate	

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C.2 Testing Methodology – The Truncated Z

In summary, many covariates are chosen in order to provide meaningful comparison levels below the submetric level chosen for the parity comparison. This includes such factors as wire center and time of month, as well as order type for provisioning measures. In each comparison cell, a Z statistic is calculated. The form of the Z statistic may vary depending on the performance measure, but it should be distributed approximately as a standard normal, with mean zero and variance equal to one. Assuming that the test statistic is derived so that it is negative when the performance for the CLEC is worse than for the ILEC, a positive truncation is done – i.e. if the result is negative it is left alone, if the result is positive it is changed to zero. A weighted average of the truncated statistics is calculated where a cell's weight depends on the volume of BSAT&T and CLEC orders in the cell. The weighted average is standardized by subtracting the weighted theoretical mean of the truncated distribution, and this is divided by the standard error of the weighted average. Summaries based on measurement type are given for the calculation of the cell Z statistic.

Additionally, there are measures that are compared to a retail analog at least in part where cell definitions do not exist that permit assignment of data for these measures to cells so the truncated Z statistic cannot be calculated. These measures are:

- ~~Average Response Interval~~ Answer Time (M&R)
- Billing Invoice Accuracy
- ~~Billing Invoice Timeliness~~ Mean Time to Deliver Invoices
- ~~Speed of Answer in the Ordering Center~~

In addition, there is one ~~are two~~ measurements that uses retail results 'plus' (2 seconds for OSS response time); ~~0.5% for Trunk Blocking~~; resulting in a benchmark standard. ~~These measurements are: This measurement is OSS Response Interval (Pre-Ordering/Ordering/Maintenance & Repair, Average Response Time & Response Interval (Pre-Ordering) and Trunk Group Performance.~~

As an example of one approach taken for a parity measure that does not use the truncated Z methodology, consider the measure Billing Invoice Accuracy. In Florida, ~~BellSouth~~ AT&T calculates results for this measure by subtracting the Absolute Value of Total Adjustments during the current month from the Absolute Value of Total Billed Revenues during the current month then dividing these results by the Absolute Value of Total Billed Revenues during the current month and multiplying these results by 100. The formula is as follows:

$$\text{Invoice Accuracy} = [(a - b)/a] \times 100$$

a = Absolute Value of Total Billed Revenues during current month

b = Absolute Value of Total Billing Related Adjustments during current month

A numerical example of the remedy calculation is given below.

Example:

CLEC DATA

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Appendix C: Statistical Properties and Definitions

Bill Adjustments	\$14,660.00
Total Billed Revenue	\$336,529.00

<u>BellSouthAT&T DATA</u>	
Bill Adjustments	\$6,018,969.26
Total Billed Revenue	\$484,691,922.40

CLEC Invoice Accuracy Ratio = $\frac{((336,529.00 - 14,660.00) / 336,529.00) \times 100}{1} = 95.64$

BSTAT&T Invoice Accuracy Ratio = $\frac{((484,691,922.40 - 6,018,969.26) / 484,691,922.40) \times 100}{1} = 98.75$

Thus, the calculated values are:

CLEC Result = 96%

BellSouthAT&T Result = 98.75%

In Florida once it is determined that the BSTAT&T percent is higher, BellSouthAT&T pays the CLEC according to the Florida Fee Schedule.

The calculation would be the difference in the CLEC Invoice Accuracy Ratio and the BSTAT&T Invoice Accuracy Ratio multiplied by the total CLEC Bill Adjustments. Then multiply the result by 2% (Appendix A: Fee Schedule)

- $98.75\% - 95.64\% = 3.11\%$
- $3.11\% \times \$14,660 = \455.92
- $\$455.92 \times 2\% = \9.12

C.2.1 Mean Measures

For mean measures, an adjusted, asymmetric-modified t statistic is calculated for each like-to-like cell that has at least seven BSTAT&T and seven CLEC transactions. A permutation test is used when one or both of the BSTAT&T and CLEC sample sizes is less than seven. The adjusted, asymmetric-modified t statistic and the permutation calculation are described in Appendix D, Statistical Formulas and Technical Description.

C.2.2 Proportion Measures

For performance measures that are calculated as a proportion, in each adjustment cell, the cell Z and the moments for the truncated cell Z can be calculated in a direct manner. In adjustment cells where proportions are not essentially equal to zero or one, and where the sample sizes are reasonably large ($n_i p_i(1-p_i) > 9$), a normal approximation can be used. In this case, the moments for the truncated Z come directly from properties of the standard

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Appendix C: Statistical Properties and Definitions

normal distribution. If the normal approximation is not appropriate, then the Z statistic is calculated from the hypergeometric distribution. In this case, the moments of the truncated Z are calculated exactly using the hypergeometric probabilities.

C.2.3 Rate Measures

The truncated Z methodology for rate measures has the same general structure for calculating the Z in each cell as proportion measures. For the rate measure Customer Trouble Report Rate there are is a fixed number of access lines in service for the CLEC, b_{2j} , and a fixed number for BSTAT&T, b_{1j} . The modeling assumption is that the occurrence of a trouble is independent between access lines, and the number of troubles in b access lines follows a Poisson distribution with mean $\lambda \cdot b$ where λ is the probability of a trouble per 1 access line and $b (= b_{1j} + b_{2j})$ is the total number of access lines in service. The exact permutation distribution for this situation is approximated by the binomial distribution (the limit for the hypergeometric distribution) that is based on the total number of BSTAT&T and CLEC troubles, n , and the proportion of BSTAT&T access lines in service, $q_j = b_{1j}/b$.

In an adjustment cell, if the number of CLEC troubles is greater than 15 and the number of BSTAT&T troubles is greater than 15, and $n_j q_j (1 - q_j) > 9$, then a normal approximation can be used. In this case, the moments of the truncated Z come directly from properties of the standard normal distribution. Otherwise, if there are very few troubles, the number of CLEC troubles can be modeled using a binomial distribution with n equal to the total number of troubles (CLEC plus BSTAT&T troubles.). In this case, the moments for the truncated Z are calculated explicitly using the binomial distribution.

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Appendix D: Statistical Formulas and Technical Descriptions

We start by assuming that the data are disaggregated so that comparisons of CLEC's performance to AT&T's retail analog are made within appropriate classes or adjustment cells that define "like" observations.

D.1 Notation and Exact Testing Distributions

Below, we have detailed the basic notation for the construction of the truncated Z statistic. In what follows the word "cell" should be taken to mean a like-to-like comparison cell that has both at least one (of more) ILEC observation and at least one (of more) CLEC observation.

- L = the total number of occupied cells
- j = 1, ..., L; an index for the cells
- n_{1j} = the number of ILEC transactions in cell j
- n_{2j} = the number of CLEC transactions in cell j
- n_j = the total number transactions in cell j; $n_{1j} + n_{2j}$
- X_{1jk} = Individual ILEC transactions in cell j; $k = 1, \dots, n_{1j}$
- X_{2jk} = Individual CLEC transactions in cell j; $k = 1, \dots, n_{2j}$
- Y_{jk} = individual transaction (both ILEC and CLEC) in cell j

$$= \begin{cases} X_{1jk} & k = 1, \dots, n_{1j} \\ X_{2jk} & k = n_{1j} + 1, \dots, n_j \end{cases}$$
- $\Phi^{-1}(\cdot)$ = the inverse of the cumulative standard normal distribution function

For Mean Performance Measures the following additional notation is needed.

\bar{X}_{1j} = The ILEC sample mean of cell j

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Appendix D: Statistical Formulas and Technical Descriptions

\bar{X}_{2j} = The CLEC sample mean of cell j

S_{1j}^2 = The ILEC sample variance in cell j

S_{2j}^2 = The CLEC sample variance in cell j

$\{y_{jk}\}$ = a random sample of size n_{2j} from the set of Y_{j1}, \dots, Y_{jn_j} ; $k = 1, \dots, n_{2j}$

M_j = The total number of distinct pairs of samples of size n_{1j} and n_{2j} ;

$$= \binom{n_j}{n_{1j}}$$

The exact parity test is the permutation test based on the "modified Z" statistic. For large samples, we one can avoid permutation calculations since this statistic will be normal (or Student's t) to a good approximation. For small samples, where we one cannot avoid permutation calculations, we ~~have found~~ it has been determined that the difference between "modified Z" and the textbook "pooled Z" is negligible. We ~~therefore propose to use the~~ permutation test based on pooled Z for small samples will be used. This decision speeds up the permutation computations considerably, because for each permutation we need only compute the sum of the CLEC sample values, and not the pooled statistic itself.

A permutation probability mass function distribution for cell j, based on the "pooled Z" can be written as

$$PM(t) = P(\sum_k y_{jk} = t) = \frac{\text{the number of samples that sum to } t}{M_j}$$

and the corresponding cumulative permutation distribution is

$$CPM(t) = P(\sum_k y_{jk} \leq t) = \frac{\text{the number of samples with sum } \leq t}{M_j}$$

For Proportion Performance Measures the following notation is defined:

a_{ij} = The number of ILEC cases possessing an attribute of interest in

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Appendix D: Statistical Formulas and Technical Descriptions

cell j

 a_{2j} = The number of CLEC cases possessing an attribute of interest in cell j a_j = The number of cases possessing an attribute of interest in cell j;
 $a_{1j} + a_{2j}$

The exact distribution for a parity test is the hypergeometric distribution. The hypergeometric probability mass function distribution for cell j is

$$HG(h) = P(H = h) = \begin{cases} \frac{\binom{n_{1j}}{h} \binom{n_{2j}}{a_j - h}}{\binom{n_j}{a_j}}, & \max(0, a_j - n_{2j}) \leq h \leq \min(a_j, n_{1j}) \\ 0 & \text{otherwise} \end{cases}$$

and the cumulative hypergeometric distribution is

$$CHG(x) = P(H \leq x) = \begin{cases} 0 & x < \max(0, a_j - n_{2j}) \\ \sum_{h=\max(0, a_j - n_{2j})}^x HG(h), & \max(0, a_j - n_{2j}) \leq x \leq \min(a_j, n_{1j}) \\ 1 & x > \min(a_j, n_{1j}) \end{cases}$$

For Rate Performance Measures, the notation needed is defined as:

 b_{1j} = the number of ILEC base elements in cell j b_{2j} = the number of CLEC base elements in cell j b_j = the total number of base elements in cell j; $b_{1j} + b_{2j}$ r_{1j} = the ILEC sample rate of cell j; n_{1j} / b_{1j} r_{2j} = the ILEC sample rate of cell j; n_{2j} / b_{2j} q_j = the relative proportion of ILEC elements for cell j; b_{1j} / b_j

The exact distribution for a parity test is the binomial distribution. The binomial probability mass function distribution for cell j is:

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Appendix D: Statistical Formulas and Technical Descriptions

$$BN(k) = P(B = k) = \begin{cases} \binom{n_j}{k} q_j^k (1 - q_j)^{n_j - k}, & 0 \leq k \leq n_j \\ 0 & \text{otherwise} \end{cases}$$

and the cumulative binomial distribution is

$$CBN(x) = P(B \leq x) = \begin{cases} 0 & x < 0 \\ \sum_{k=0}^x BN(k), & 0 \leq x \leq n_j \\ 1 & x > n_j \end{cases}$$

D.2 Calculating the Truncated Z

The general methodology for calculating an overall level test statistic is outlined below.

D.2.1 Calculate Cell Weights (W_j)

A weight based on the number of transactions is used so that a cell, which has a larger number of transactions, has a larger weight. The actual weight formula will depend on the type of measure.

Mean Measure

$$W_j = \sqrt{\frac{n_{1j} n_{2j}}{n_j}}$$

Proportion Measure

$$W_j = \sqrt{\frac{n_{2j} n_{1j}}{n_j} \cdot \frac{a_j}{n_j} \cdot \left(1 - \frac{a_j}{n_j}\right)}$$

Rate Measures

$$W_j = \sqrt{\frac{b_{1j} b_{2j}}{b_j} \cdot \frac{n_j}{b_j}}$$

D.2.2 Calculate a Z-Value-Score (Z_j) for each Cell

A Z statistic with mean 0 and variance 1 is needed for each cell.

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Appendix D: Statistical Formulas and Technical Descriptions

- if $W_j = 0$, set $Z_j = 0$.
- Otherwise, the actual Z statistic calculation depends on the type of performance measure.

Mean Measure

$$Z_j = \Phi^{-1}(\alpha)$$

where α is determined by the following algorithm.

If the two means are equal and the two variances are zero, set the cell Z-score to zero.

If $\min(n_{1j}, n_{2j}) > 6$, then determine α as

$$\alpha = P(t_{n_{1j}-1} \leq T_j)$$

that is, α is the probability that a Student's t random variable with $n_{1j} - 1$ degrees of freedom, is less than

$$T_j = \begin{cases} t_j + \frac{g}{6} \left(\frac{n_{1j} + 2n_{2j}}{\sqrt{n_{1j} n_{2j} (n_{1j} + n_{2j})}} \right) \left(t_j^2 + \frac{n_{2j} - n_{1j}}{n_{1j} + 2n_{2j}} \right) & t_j \geq t_{\min j} \\ t_j + \frac{g}{6} \left(\frac{n_{1j} + 2n_{2j}}{\sqrt{n_{1j} n_{2j} (n_{1j} + n_{2j})}} \right) \left(t_{\min j}^2 + \frac{n_{2j} - n_{1j}}{n_{1j} + 2n_{2j}} \right) & \text{otherwise} \end{cases}$$

where

$$t_j = \frac{\bar{X}_{1j} - \bar{X}_{2j}}{s_{1j} \sqrt{\frac{1}{n_{1j}} + \frac{1}{n_{2j}}}}$$

$$t_{\min j} = \frac{-3\sqrt{n_{1j} n_{2j} n_j}}{g(n_{1j} + 2n_{2j})}$$

and g is the median value of all values of

$$\gamma_{1j} = \frac{n_{1j}}{(n_{1j} - 1)(n_{1j} - 2)} \sum_k \left(\frac{X_{1jk} - \bar{X}_{1j}}{s_{1j}} \right)^3$$

over all cells within the submeasure being tested such that all three conditions stated below are true. If no submeasure cells exist that satisfy these conditions, then $g = 0$.

$$\gamma_{1j} > 0$$

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Appendix D: Statistical Formulas and Technical Descriptions

$$n_{1j} > 6$$

$n_{1j} \geq n_{3q}$ for all values of j , where n_{3q} is the 3rd quartile of all values of n_{1j} in cells where the first two conditions are true.

If no submeasure cells exist that satisfy these conditions, then $g = 0$.

Note, that t_j is the "modified Z" statistic. The statistic T_j is a "modified Z" corrected adjusted for the skewness of the ILEC data.

If $\min(n_{1j}, n_{2j}) \leq 6$, and

- $M_j \leq 1,000$ (the total number of distinct pairs of samples of size n_{1j} and n_{2j} is 1,000 or less)
- Calculate the sample sum for all possible samples of size n_{2j} .
- Rank the sample sums from smallest to largest. Ties are dealt by using average ranks.
- Let R_0 be the rank of the observed sample sum with respect to all the sample sums.

$$\alpha = 1 - \frac{R_0 - 0.5}{M_j}$$

- $M_j > 1,000$
- Draw a random sample of 1,000 sample sums from the permutation distribution.
- Add the observed sample sum to the list. There are a total of 1001 sample sums. Rank the sample sums from smallest to largest. Ties are dealt by using average ranks.
- Let R_0 be the rank of the observed sample sum with respect all the sample sums.

$$\alpha = 1 - \frac{R_0 - 0.5}{1001}$$

Proportion Measure

$$Z_j = \frac{n_j a_{1j} - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}}$$

Rate Measure

$$Z_j = \frac{n_{1j} - n_j q_j}{\sqrt{n_j q_j (1 - q_j)}}$$

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Appendix D: Statistical Formulas and Technical Descriptions

D.2.3 Obtain a Truncated Z-Value-Score for each Cell (Z_j^{*})

To limit the amount of cancellation that takes place between cell results during aggregation, cells whose results suggest possible favoritism are left alone. Otherwise the cell statistic is set to zero. This means that positive equivalent Z-value-Scores are set to 0, and negative values are left alone. Mathematically, this is written as

Z_j^{*} = min(0, Z_j)

D.2.4 Calculate the Theoretical Mean and Variance

Calculate the theoretical mean and variance of the truncated statistic under the null hypothesis of parity, E(Z_j^{*}|H₀) and Var(Z_j^{*}|H₀). To compensate for the truncation in step 3, an overall, weighted sum of the Z_j^{*} will need to be centered and scaled properly so that the final overall statistic follows a standard normal distribution.

- If W_j = 0, then no evidence of favoritism is contained in the cell. The formulas for calculating E(Z_j^{*}|H₀) and Var(Z_j^{*}|H₀) cannot be used. Set both equal to 0.
If min(n_{1j}, n_{2j}) > 6 for a mean measure, or min(a_{1j}(1 - a_{1j}), a_{2j}(1 - a_{2j})) > 9 for a proportion measure, or min(n_{1j}, n_{2j}) > 15 and n_{1j}(1 - a_{1j}) > 9 for a rate measure, then

E(Z_j^{*}|H₀) = -1/sqrt(2pi)

and

Var(Z_j^{*}|H₀) = 1/2 - 1/(2pi)

- Otherwise, determine the total number of values for Z_j^{*}. Let z_{ji} and theta_{ji} denote the values of Z_j^{*} and the probabilities of observing each value, respectively.

E(Z_j^{*}|H₀) = sum(theta_{ji}z_{ji})

and

Var(Z_j^{*}|H₀) = sum(theta_{ji}z_{ji}²) - [E(Z_j^{*}|H₀)]²

The actual values of the z's and theta's depends on the type of measure.

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Appendix D: Statistical Formulas and Technical Descriptions

Mean Measure

$$N_j = \min(M_j, 1,000), \quad i = 1, \dots, N_j$$

$$z_{ji} = \min \left\{ 0, \Phi^{-1} \left(1 - \frac{R_i - 0.5}{N_j} \right) \right\} \quad \text{where } R_i \text{ is the rank of sample sum } i$$

$$\theta_j = \frac{1}{N_j}$$

Proportion Measure

$$z_{ji} = \min \left\{ 0, \frac{n_j i - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}} \right\}, \quad i = \max(0, a_j - n_{2j}), \dots, \min(a_j, n_{1j})$$

$$\theta_{ji} = \text{HG}(i)$$

Rate Measure

$$z_{ji} = \min \left\{ 0, \frac{i - n_j q_j}{\sqrt{n_j q_j (1 - q_j)}} \right\}, \quad i = 0, \dots, n_j$$

$$\theta_{ji} = \text{BN}(i)$$

D.2.5 Calculate the Overall Test Statistic (Z^T)

$$Z^T = \frac{\sum_j W_j Z_j^* - \sum_j W_j E(Z_j^* | H_0)}{\sqrt{\sum_j W_j^2 \text{Var}(Z_j^* | H_0)}}$$

Field Code Changed

The Balancing Critical Value

There are four key elements of the statistical testing process:

- the null hypothesis, H_0 , that parity exists between ILEC and CLEC services
- the alternative hypothesis, H_a , that the ILEC is giving better service to its own customers
- the Truncated Z test statistic, Z^T , and
- a critical value, c

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Appendix D: Statistical Formulas and Technical Descriptions

The decision rule¹ is

- If $Z^T < c$ then accept H_a .
- If $Z^T \geq c$ then accept H_0 .

There are two types of errors possible when using such a decision rule:

- **Type I Error:** (α) Deciding favoritism exists when there is, in fact, no favoritism.
- **Type II Error:** (β) Deciding parity exists when there is, in fact, favoritism.

The probabilities of each type of error are:

• **Type I Error:** $\alpha = P(Z^T < c | H_0)$

• **Type II Error:** $\beta = P(Z^T \geq c | H_a)$

• **Type I Error:** $\alpha = P(Z^T < c | H_0)$

• **Type II Error:** $\beta = P(Z^T \geq c | H_a)$

We want a balancing critical value, c_B , so that $\alpha = \beta$.

It can be shown that,

$$c_B = \frac{\sum_j W_j M(\mu_j, \sigma_j) - \sum_j W_j \frac{-1}{\sqrt{2\pi}}}{\sqrt{\sum_j W_j^2 V(\mu_j, \sigma_j) + \sum_j W_j^2 \left(\frac{1}{2} - \frac{1}{2\pi}\right)}}$$

where

$$M(\mu, \sigma) = \mu \Phi\left(\frac{-\mu}{\sigma}\right) - \sigma \phi\left(\frac{-\mu}{\sigma}\right)$$

$$V(\mu, \sigma) = (\mu^2 + \sigma^2) \Phi\left(\frac{-\mu}{\sigma}\right) - \mu \sigma \phi\left(\frac{-\mu}{\sigma}\right) - M(\mu, \sigma)^2$$

$\Phi(\cdot)$ is the cumulative standard normal distribution function, and $\phi(\cdot)$ is the standard normal density function, and μ and σ are the formal arguments of functions $M(\cdot, \cdot)$ and $V(\cdot, \cdot)$.

This formula assumes that Z_j is approximately normally distributed within cell j . When the cell sample sizes, n_{1j} and n_{2j} , are small this may not be true. It is possible to determine the cell mean and variance under the null hypothesis when the cell sample sizes are small. It is much more difficult to determine these values under the alternative

¹ This decision rule assumes that a negative test statistic indicates poor service for the CLEC customer. If the opposite is true, then reverse the decision rule.

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Appendix D: Statistical Formulas and Technical Descriptions

hypothesis. Since the cell weight, W_j will also be small (see calculate weights section above) for a cell with small volume, the cell mean and variance will not contribute much to the weighted sum. Therefore, the above formula provides a reasonable approximation to the balancing critical value.

The values of m_j and se_j will depend on the type of performance measure.

Mean Measure

For mean measures, one is concerned with two parameters in each cell, namely, the mean and variance. A possible lack of parity may be due to a difference in cell means, and/or a difference in cell variances. One possible set of hypotheses that capture this notion, and take into account the assumption that transactions are identically distributed within cells is:

H0: $\mu_{1j} = \mu_{2j}, \sigma_{1j}^2 = \sigma_{2j}^2$
Ha: $\mu_{2j} = \mu_{1j} + \delta_j \sigma_{1j}, \sigma_{2j}^2 = \lambda_j \sigma_{1j}^2$

Where $\delta_j > 0, \lambda_j \geq 1$, and $j = 1, \dots, L_2$ (where δ_j and λ_j corresponds to the Δ and Λ values defined in section 4.1.6 of the Administrative Plan)

Under this form of alternative hypothesis, the cell test statistic Z_j has mean and standard error given by

$m_j = \frac{-\delta_j}{\sqrt{\frac{1}{n_{1j}} + \frac{1}{n_{2j}}}}$

and

$se_j = \sqrt{\frac{\lambda_j n_{1j} + n_{2j}}{n_{1j} + n_{2j}}}$

Proportion Measure

For a proportion measure there is only one parameter of interest in each cell, the proportion of transaction possessing an attribute of interest. A possible lack of parity may be due to a difference in cell proportions. A set of hypotheses that take into account the assumption that transactions are identically distributed within cells while allowing for an analytically tractable solution is:

H0: $\frac{p_{2j}(1-p_{1j})}{(1-p_{2j})p_{1j}} = 1$

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Appendix D: Statistical Formulas and Technical Descriptions

$$H_a: \frac{p_{2j}(1-p_{1j})}{(1-p_{2j})p_{1j}} = \psi_j \quad \psi_j > 1 \text{ and } j = 1, \dots, L.$$

(Where parameters ψ_j corresponds to the ψ_{ij} values defined in section 4.1.6 of the Administrative Plan).

These hypotheses are based on the "odds ratio." If the transaction attribute of interest is a missed trouble repair, then an interpretation of the alternative hypothesis is that a CLEC trouble repair appointment is ψ_j times more likely to be missed than an ILEC trouble.

Under this form of alternative hypothesis, the within cell asymptotic mean and variance of a_{ij} are given by¹

$$E(a_{ij}) = n_j \pi_j^{(1)}$$

$$\text{var}(a_{ij}) = \frac{n_j}{\frac{1}{a_j^{(1)}} + \frac{1}{a_j^{(2)}} + \frac{1}{a_j^{(3)}} + \frac{1}{a_j^{(4)}}}$$

where

$$\pi_j^{(1)} = f_j^{(1)} (n_j^2 + f_j^{(2)} + f_j^{(3)} - f_j^{(4)})$$

$$\pi_j^{(2)} = f_j^{(1)} (-n_j^2 - f_j^{(2)} + f_j^{(3)} + f_j^{(4)})$$

$$\pi_j^{(3)} = f_j^{(1)} (-n_j^2 + f_j^{(2)} - f_j^{(3)} + f_j^{(4)})$$

$$\pi_j^{(4)} = f_j^{(1)} (n_j^2 (\frac{1}{v_j} - 1) - f_j^{(2)} - f_j^{(3)} - f_j^{(4)})$$

$$f_j^{(1)} = \frac{1}{2n_j^2 (\frac{1}{v_j} - 1)}$$

$$f_j^{(2)} = n_j n_{1j} (\frac{1}{v_j} - 1)$$

$$f_j^{(3)} = n_j a_j (\frac{1}{v_j} - 1)$$

$$f_j^{(4)} = \sqrt{n_j^2 [4n_{1j} (n_j - a_j) (\frac{1}{v_j} - 1) + (n_j + (a_j - n_{1j}) (\frac{1}{v_j} - 1))^2]}$$

Recall that the cell test statistic is given by

¹ Stevens, W. L. (1951) Mean and Variance of an entry in a Contingency Table. *Biometrika*, 38, 468-470.

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Appendix D: Statistical Formulas and Technical Descriptions

$$Z_j = \frac{n_j a_{1j} - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}}$$

Using the equations above, we see it can be shown that Z_j has mean and standard error given by

$$m_j = \frac{n_j^2 \pi_j^{(1)} - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}}$$

and

$$sc_j = \sqrt{\frac{n_j^3 (n_j - 1)}{n_{1j} n_{2j} a_j (n_j - a_j) \left(\frac{1}{\pi_j^{(1)}} + \frac{1}{\pi_j^{(2)}} + \frac{1}{\pi_j^{(3)}} + \frac{1}{\pi_j^{(4)}} \right)}}$$

Rate Measure

A rate measure also has only one parameter of interest in each cell, the rate at which a phenomenon is observed relative to a base unit, e.g. the number of troubles per available line. A possible lack of parity may be due to a difference in cell rates. A set of hypotheses that take into account the assumption that transactions are identically distributed within cells is:

$$H_0: r_{1j} = r_{2j}$$

$$H_a: r_{2j} = \varepsilon_j r_{1j} \quad \varepsilon_j > 1 \text{ and } j = 1, \dots, L.$$

(where parameters ε_j corresponds to the epsilon-Epsilon values defined in section 4.1.6 of the Administrative Plan).

Given the total number of ILEC and CLEC transactions in a cell, n_j , and the number of base elements, b_{1j} and b_{2j} , the number of ILEC transaction, n_{1j} , has a binomial distribution from n_j trials and a probability of

$$q_j = \frac{r_{1j} b_{1j}}{r_{1j} b_{1j} + r_{2j} b_{2j}}$$

Therefore, the mean and variance of n_{1j} , are given by

$$E(n_{1j}) = n_j q_j$$

$$\text{var}(n_{1j}) = n_j q_j (1 - q_j)$$

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Under the null hypothesis

$$q_j^* = q_j = \frac{b_{1j}}{b_j}$$

but under the alternative hypothesis

$$q_j^* = q_j^* = \frac{b_{1j}}{b_{1j} + \varepsilon_j b_{2j}}$$

Recall that the cell test statistic is given by

$$Z_j = \frac{n_{1j} - n_j q_j}{\sqrt{n_j q_j (1 - q_j)}}$$

Using the relationships above, we see it can be shown that Z_j has mean and standard error given by

$$m_j = \frac{n_j (q_j^* - q_j)}{\sqrt{n_j q_j (1 - q_j)}} = (1 - \varepsilon_j) \frac{\sqrt{n_j b_{1j} b_{2j}}}{b_{1j} + \varepsilon_j b_{2j}}$$

and

$$se_j = \sqrt{\frac{q_j^* (1 - q_j^*)}{n_j q_j (1 - q_j)}} = \sqrt{\varepsilon_j} \frac{b_j}{b_{1j} + \varepsilon_j b_{2j}}$$

D.2.6 Determining the Parameters of the Alternative Hypothesis

In this section we have indexed the alternative hypothesis of mean measures by two sets of parameters, λ_j and δ_j (where λ_j and δ_j corresponds to the Lambda and Delta values defined in section 4.1.6 of the Administrative Plan section). Proportion measures are indexed by parameter ψ_j and rate measures by ε_j (these parameters correspond to the Psi and Epsilon of section 4.1.6). A major difficulty with this approach is that more than one alternative will be of interest; for example we may consider one alternative in which all the δ_j are set to a common non-zero value, and another set of alternatives in each of which just one δ_j is non-zero, while all the rest are zero. There are very many other possibilities. Each possibility leads to a single value for the balancing critical value; and each possible critical value corresponds to many sets of alternative hypotheses, for each of which it constitutes the correct balancing value.

The formulas we have presented can be used to evaluate the impact of different choices of the overall critical value. For each putative choice, we can evaluate the set of alternatives

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Appendix D: Statistical Formulas and Technical Descriptions

for which this is the correct balancing value. While statistical science can be used to evaluate the impact of different choices of these parameters, there is not much that an appeal to statistical principles can offer in directing specific choices. Specific choices are best left to telephony experts. Still, it is possible to comment on some aspects of these choices:

Parameter Choices for λ_j – The set of parameters λ_j index alternatives to the null hypothesis that arise because there might be greater unpredictability or variability in the delivery of service to a CLEC customer over that which would be achieved for an otherwise comparable ILEC customer. While concerns about differences in the variability of service are important, it turns out that the truncated Z testing which is being recommended here is relatively insensitive to all but very large values of the λ_j . Put another way, reasonable differences in the values chosen here could make very little difference in the balancing points chosen. Therefore, λ_j parameters have been set to 1.

Parameter Choices for δ_j – The set of parameters δ_j are much more important in the choice of the balancing point than was true for the λ_j . The reason for this is that they directly index differences in average service. The truncated Z test is very sensitive to any such differences; hence, even small disagreements among experts in the choice of the δ_j could be very important. Sample size matters here too. For example, setting all the δ_j to a single value $\delta_j = \delta$ might be fine for tests across individual CLECs where the CLEC customer bases are not too different. Using the same value of δ for the overall state testing does not seem sensible. At the state level we are aggregating over CLECs, so using the same δ as for an individual CLEC would be saying that a "meaningful" degree of disparity is one where the violation is the same (δ) for each CLEC. But the detection of disparity for any component CLEC is important, so the relevant "overall" δ should be smaller.

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Parameter Choices for ψ_j or ϵ_j – The set of parameters ψ_j or ϵ_j are also important in the choice of the balancing point for tests of their respective measures. The reason for this is that they directly index increases in the proportion of service performance. The truncated Z test is sensitive to such increases; but not as sensitive as the case of δ for mean measures. Sample size matters here too. As with mean measures, using the same value of ψ or ϵ for the overall state testing does not seem sensible.

The bottom line here is that beyond a few general considerations, like those given above, a principled approach to the choice of the alternative hypotheses to guard against must come from elsewhere.

D.2.7 Decision Process

Once Z^T has been calculated, it is compared to the balancing critical value to determine if the ILEC is favoring its own customers over a CLEC's customers.

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