Exhibit A

Overview of Statistical Process on Overearnings

AT&T conducted three analyses of the relationship between LEC projected rates of return and LEC actual rates of return. These analyses, outlined below, indicate that NECA, Virgin Islands Telephone Corporation, ALLTEL of Arkansas, Florida, Missouri, New York and Oklahoma, John Staurulakis Incorporated, and Concord Telephone Company consistently produced rates of return that exceeded the targeted rate of return.

AT&T first graphed the differences between the projected annual rates of return and the actual rate of return reported by the LEC. A simple visual look at the data clearly indicates that certain LECs, including NECA (and others, see Exhibit A) consistently generated rates of return that exceed 11.25%. The visual test is also used to determine whether additional statistical tests are necessary. The additional tests outlined below, test whether it is likely that the projected revenue requirement would consistently achieve returns greater than 11.25%.

The first test is intended to evaluate whether a LEC's rate of return projections are unbiased. An unbiased process would be expected to produce returns that are both above and below the target return, which is 11.25%. The initial test evaluates the likelihood that a set of forecasts would be expected to consistently exceed or under estimate an actual level. Of the LECs analyzed four under forecast their switched rate of return over all periods for which data was available and six under forecast their special rate of return

over all periods.[1] This data indicates that some LECs produced returns that exceeded the target rate of return in more years than chance would reasonably allow. The probability that a LEC would set its rates to exceed the target rate 10 periods in a row is (1/2)^10. For example, NECA exceeded its traffic sensitive target rate of return in all 10 years that AT&T studied. The probability that an unbiased process, that is, one that would project rates of return on the average at the 11.25% target is only $(½)^{10}$, or 0.03%.

To better understand whether the forecasts are biased and to derive an estimate of the expected bias AT&T also tested the difference of the means. Specifically, AT&T looked at the differences between the actual rates of return and the targeted rate. In the absence of bias these differences should not statistically differ from zero. The test hypothesis is that the average difference between two means is zero.[2] The t-statistic calculated from

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[1] AT&T used the final data from FCC Form 492 where available to obtain the returns for each period when the LEC provided each year's return. Where the data was not provided by year AT&T derived the annual data. Specifically, the returns for the odd years were taken from the 492 reports filed on or about March 31st of each even year, e.g., 1999 returns were taken from the report filed in 2000. The even year return data was calculated based on the difference between the operating revenues, expenses and average net investment on the final form 492 (which includes two years' data) and the report that contains only the annual data.

[2] The t-test is performed on the differences between the observed rates of return and the target return, d_i. The average of the differences, D, and then the average's standard deviation, s_D, are found. The standard deviation of the average differences is found by first calculating the standard deviation of the differences,

$$s_d = \sqrt{\sum(di - D) / (n-1)},$$

and then calculating the corresponding standard deviation of the average of the differences, s_D,

$$s_D = s_d/\sqrt{n},$$

The t-statistic is calculated using the formula,

$$t = D / s_D.$$

the sample data can then be compared to the critical values of the one-tailed t-distribution at the 90% and 95% confidence levels. If the calculated t-statistic exceeds a critical value, then bias is likely with probability of the confidence level. As shown in Exhibit A, AT&T has calculated t-statistics that exceed these critical values for several LECs. This indicates that these LECs have a systematic upward bias in their projection process.

The t-tests provide a formal statistical confirmation of the visual view that some LECs consistently develop projected returns that exceed the authorized level Further the t-test strengthens the evidence resulting from the simple test on the direction (over or under) of the projected rates of return.

This statistic is compared to the statistical t-distribution with degrees of freedom equal to the number of observation minus 1.

Demonstration of Projection Bias
Rate of Return Companies
Switched Access

	Test 1			Test 2				
A Company	B # of Observations	C # of Observations < 11.25%	D Probability of (# Observed in Column C) or Less < 0	E Average Rate of Return	F Standard Deviation of the Average Rate of Return	G Calculated t-statistic	H Critical t-statistic at 95% Confidence Level	I Significant Outlier
NECA	10	0	0.10%	12.85%	0.002961	5.397034	1.833	Yes
Alltel-Missouri	9	0	0.20%	13.66%	0.007315	3.291634	1.860	Yes
Alltel-New York	9	2	1.95%	14.38%	0.013505	2.314403	1.860	Yes
JSI - Concord	9	1	1.95%	17.85%	0.015948	4.139718	1.860	Yes

NOTES: Column D is the probability that the number of actual observations less than 0, or less than that number, are all less than 0.
For example, for Alltel-New York, the number of observations less than 0 is 2. The probability that 2 or less observations are less than 0, for an unbiased process, is given by the equation:

$$\Pr(2 \text{ or less observations} < 0) = \sum_{i=0}^{2} \binom{9}{i} (0.5)^9 = (\tfrac{1}{2})^9 \{ 1 + 9 + 36) = 46 / 512 = 0.0898.$$

Column E is the simple average of a LECs rate of return. The average is derived by simply summing the Switched Access return identified for each observartion and dividing by the number of observations.