

Simplified Measurement of Performance and Liability: The SiMPL Plan

I. Introduction

The Telecommunications Act of 1996 requires Incumbent Local Exchange Carriers (ILECs) to provide interconnection and unbundled elements to Competitive Local Exchange Carriers (CLECs) in a manner that is “just, reasonable, and nondiscriminatory” (§ 251(c)(3)). Because interconnection and unbundling are extremely important to the development of competition in local exchange telecommunications markets, it is imperative that a methodology be established to evaluate whether the ILEC’s provision of interconnection and unbundled elements to the CLECs is of sufficient quality to satisfy the “just, reasonable, and nondiscriminatory” standard of the Act. If the ILEC’s service fails to meet this standard (or standards), then incentive payments should be levied to incent the ILEC to improve its quality of service to the CLECs.

The purpose of this document is to outline a methodology that will promote the “just, reasonable, and nondiscriminatory” provision of interconnection and unbundled elements by the ILEC to the CLECs. This methodology is the *Simplified Measurement of Performance and Liability* (SiMPL) plan. The SiMPL plan promotes “just, reasonable, and nondiscriminatory” service provision through the use of quality of service standards that are both within the capabilities of the ILEC and of sufficient quality to facilitate the evolution of competition in local exchange telecommunications markets.¹ These service standards, based in many cases on observed ILEC performance, provide CLECs with fixed expectations as to what level of service they should receive from the ILECs and provides the ILECs with certainty as to the level of service required to avoid incentive payments. This unique feature of the SiMPL plan is important. Virtually every transaction between a buyer and seller places some bounds on the timing of the transaction, particularly when timing is as an important element of the transaction as in the provision of telecommunications service. If CLECs cannot inform potential customers of expected service provisioning or repair intervals, competition in local exchange markets will be substantially impeded.

The SiMPL plan is based on a few guiding principles. First, the performance plan should ensure that the quality of service provided to the CLECs by the ILEC

¹ The methodology of the SiMPL plan satisfies the “nondiscriminatory” (or parity) standard of the Act because it is based, when feasible, on observed ILEC performance.

is “just, reasonable, and nondiscriminatory” and “... at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection” (§ 251(c)(2)(C)), as required by the Telecommunications Act of 1996. Second, the measurement procedures of the performance plan should be easy to understand, calculate and interpret and should minimize administrative cost.² Third, the plan should be competition- or customer-focused. Reliability is a highly desirable characteristic of telecommunications services and consumers demand expedient repair and provisioning of service, often within specified time intervals. Thus, the formation of reasonable expectations about the quality of service the ILEC will provide CLECs is fundamental to the evolution of competition. Fourth, the measurement procedures should be credible, and based on accurate and reliable data. An ideal measurement procedure allows CLECs to compare (or audit) their own data to that provided by the ILEC.³ Finally, to the extent possible, the plan should be broadly consistent with the plenitude of underlying principles offered by the various participants in the performance plan proceedings, including the ILECs, CLECs, state Public Service Commissions, and the Federal Communications Commission. For example, the plan should ensure that: a) service that meets the parity standard is not penalized; b) remedies and penalties are based on the severity of discrimination; and c) remedies and penalties are large enough and structured properly to induce compliant behavior.

The purpose of this document is to outline the fundamental features of the SiMPL plan. Implementing the plan in a particular state requires far more specificity and will depend on the characteristics of the data for each of the ILECs and CLECs. The document is outlined as follows. First, a description of the *Zone Parity Benchmark* is provided in Section II. The Zone Parity Benchmark is a quality of service standard that is the core measurement tool of the SiMPL plan.⁴ Second, in Section III, the Zone Parity Benchmark is applied using actual ILEC and CLEC performance data. As part of this illustration, a comparison is made between the Zone Parity Benchmark and the LCUG Z-Test, which is a parametric statistical test of the service provided. For the single example used in this document, the two methodologies reach similar conclusions despite their

² Transparency and simplicity are not excuses for a lack of robustness or accuracy in the measurement procedures. Elements of any plan that can be made less complex without a loss of accuracy, or without a substantial loss of accuracy (subject to a cost-benefit analysis), are preferred.

³ The CLECs should be able to compare their own internal data on service provision intervals with the data provided them by the ILEC.

⁴ Unlike other proposals, the Zone Parity Benchmark can be applied uniformly to all performance measures.

fundamental differences in theory and application. Conclusions are provided in the final section.

II. Measuring ILEC Performance

Imagine a situation where the ILEC provides a service to itself at a fixed interval. For example, assume that if dialtone is lost for a residential customer, that dialtone is repaired in exactly 24 hours, every single time it happens. In other words, the mean time to repair is 24 hours and the data has no variation. In this scenario, it is easy to define and measure “parity” service. If the CLEC gets dialtone repair service that is longer than 24 hours, then the service is “out of parity.”

What is actually observed is that repair intervals (or any other service) vary from event to event. The average repair interval may be 24 hours, but many customers will get repair in less than 24 hours and some in more than 24 hours. Consider the scenario where dialtone is restored for 70 percent the customers in less than 24 hours and 30 percent in more than 24 hours. If a CLEC’s customers had repair intervals of the same distribution -- 70 percent less and 30 percent more than 24 hours -- then we might conclude that parity service has been provided. This simple example (loosely) illustrates the nature of the measurement procedure of the SIMPL plan, which is called the *Zone Parity Benchmark*.

An alternative is to test for means or distribution equality using one or more of many potential statistical tests. For example, the Kolmogoroff-Smirnoff test is a powerful, non-parametric test of the equality of two distributions. Similarly, a non-parametric test of stochastic order is ideally suited to the ILEC performance data.⁵ Or, the simple, parametric Z-test can be used to test for means differences between ILEC and CLEC data if both sets of data are normally distributed or characterized by large samples. All of the aforementioned statistical tests (among others) are valid statistical procedures. If a statistical approach is used to measure ILEC performance, then the choice of test is constrained only by the underlying assumptions or realities regarding such matters as the distribution of the data, sample sizes, Type I and II error rates, and so forth. Of course, some problems, such as small sample sizes, can be handled with routine statistical procedures, such as permutation testing.

⁵ For a discussion of stochastic order tests, see Moshe Shaked and J. George Shanthikumar, *Stochastic Orders and Their Applications* (Academic Press, 1994).

Unlike these statistical approaches, but like the vast majority of contractual arrangements between firms that relate to performance levels and remedies, the SiMPL plan employs no statistical testing. This non-statistical approach greatly simplifies the interpretation of performance measurements and its use of a quality standard is consumer (and thus competition) friendly. The SiMPL plan, in other words, is an outcome-based approach to performance measurement. Failure to meet the specified quality standard is interpreted as a failure. Statistical approaches, on the other hand, are process-based measurement schemes. It is possible for a statistical test to be incorrect, indicating discriminatory service where service is in-parity when CLEC and ILEC processes are indeed identical or nondiscriminatory service when discrimination is in fact present when the ILEC process provides performance superior to that of the CLEC process. Furthermore, statistical tests assume that “nondiscriminatory” service is also “just” and “reasonable” service. The SiMPL plan, alternatively, allows regulators to balance the elements of the multidimensional standard of the Act.

The SiMPL plan also recognizes that statistical procedures, while routine and comprehensible to statisticians, are inordinately complex for the statistical layperson. Seemingly trivial assumptions about the properties of a statistical test can have enormous consequences in the measurement of performance. The requirement that every participant in the performance measure proceedings, including the regulatory commissions, retain a skilled statistician is unreasonable. Those CLECs that cannot employ a near full-time statistician, or a panel of statisticians to cover concurrent proceedings across multiple states, must put their fate in the hands of their rivals or potential rivals that can maintain a staff of statisticians. This situation is neither “just” nor “reasonable.”

1. ZONE PARITY BENCHMARKS

When an ILEC provides a service, whether to itself or to a CLEC, each observation of that service provision can be characterized according to a scale of quality. In this previous example, the scale of quality is defined in terms of “time to repair” or “time to completion.” For a given set of performance data the individual observations of the service provision can be grouped into categories of the quality scale. Within the context of the SiMPL plan, these groupings are called Zones and each Zone has a Zone Parity Benchmark that establishes the number or percentage of CLEC observations in each Zone that is consistent with “just, reasonable, and nondiscriminatory” service. The *Zone Parity Benchmark* consists of three categories of service provision: Zone 0, Zone 1, and Zone 2. These percentage benchmarks are *absolute* upper bounds; exceeding the

benchmarks in Zone 1 or 2 by any amount is a failure to provide the established level of acceptable service quality.⁶

Setting the Zone Parity Benchmark

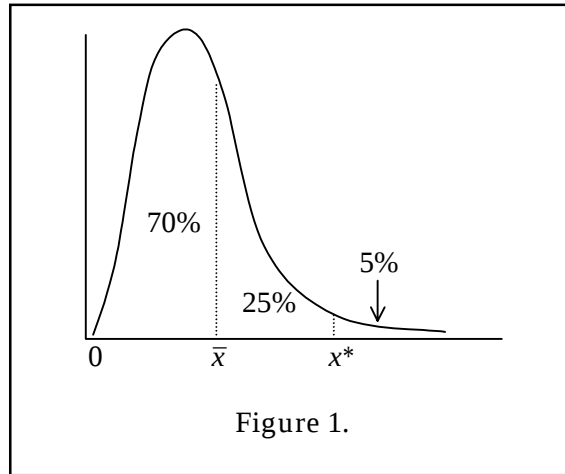
It is perhaps easiest to describe the zone benchmark approach by looking at some *hypothetical* data. Because the Act requires that the ILEC provide the CLEC service that is "... at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection" (§ 251(c)(2)(C)), the Zone Parity Benchmarks can be established using historical ILEC or CLEC performance data. Actual data is evaluated in the next section. In Figure 1, we illustrate graphically a hypothetical set of ILEC data from the provision of "dialtone repair" service to itself (consistent with the earlier example).⁷ The (hypothetical) distribution is not symmetric (it is lognormal), with 70 percent of the observations being smaller than the mean ($\bar{x}$), and 30 percent larger than the mean.⁸ Now, we can split the data points lying above the mean into two parts, the five percent of the largest observations (those above x^*) and the remaining observations lying between the mean and the five percent critical value (x^*).⁹

⁶ When these percentage benchmarks are multiplied by the number of CLEC observations, they become observation benchmarks.

⁷ The distribution of observations illustrated in Figure 1 is purely hypothetical and for illustrative purposes only. When actually setting the Zone Parity Benchmarks, the values of the distribution - including $\bar{x}$, x^* , and the percent of observations in each Zone -- are derived from actual ILEC or CLEC data.

⁸ Lognormal distributions are probably the most common distributional form of the performance measure data.

⁹ Other percentage values could be used to specify the critical value.

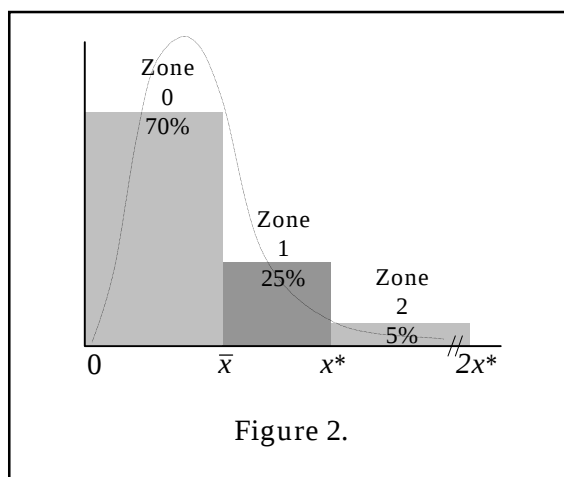


This partitioning of the data produces three Zones. **Zone 0** includes all observations that are less than or equal to the mean of the actual data. **Zone 1** includes all observations that are above the mean but less than the critical value x^* . **Zone 2** includes the largest five percent of the observations. Thus, the value x^* is set such that only five percent of the observations are allocated to Zone 2. Note that Zone 2 is unbounded allowing any level of performance to be acceptable in Zone 2 (as long as it does not exceed five percent of the observations). The SiMPL plan proposes that Zone 2 be bounded on the upper-end by the value $2x^*$.¹⁰

Once the Zones are established (or bounded by $\bar{x}$, x^* , and $2x^*$), benchmarks are set for Zone 1 and Zone 2 that define the acceptable level of ILEC performance. The benchmarks are defined in terms of the “percent of observations” allowable in each Zone. These percentages are then multiplied by the total observations of a given CLEC resulting in an acceptable number of observations in each Zone. For example, assume that the Zone Parity Benchmarks are set based on the hypothetical “time to repair” data previously

¹⁰ An analysis of the actual data may indicate the upper boundary of Zone 2 could be greater or less than $2x^*$. However, the maximum acceptable quality of service should not be set too high. Quality service to consumers should be a priority and long intervals unacceptable, particularly in the case of few CLEC orders.

discussed. As illustrated in Figure 2, for this hypothetical data the Zone 1 and Zone 2 benchmarks are set at 25 percent and five percent, respectively.¹¹



The Zone Parity Benchmarks define the level of performance that meets the “just, reasonable, and nondiscriminatory” standard.¹² If the ILEC provides service within the bounds of the benchmarks, then no incentive payment is due. To reiterate the point made previously, the SiMPL plan is an output-based, rather than a process-based, performance measurement plan. If the ILEC provides worse than benchmark service to the CLEC during the specified measurement interval, the ILEC is “out of parity” and an incentive payment is prescribed. No consideration is given to the process from which the service provision data is generated because below benchmark service is harmful to the CLECs, consumers, and the entire competitive process.¹³ As such, worse than

¹¹ Note in Figure 2 how the Zones mimic the actual distribution, albeit in a discrete fashion. Further, unlike the Z-test, the Parity Benchmarks consider properties of the distribution other than its mean and standard deviation, such as skewness.

¹² Note the similarity between the current form of the benchmark and the Zone Parity Benchmark. In present day parlance, we would call the Zone Parity Benchmark a “stare-and-compare” benchmark approach (in this example) with 25 percent and 5 percent forgiveness. The 95 percent benchmark in the current proposals (e.g., 95 percent of orders are confirmed within 24 hours) is similar to a Zone Parity Benchmark that measures performance using only Zone 2. In other words, if 95 percent of the observations are not better than a predetermined x^* , then discrimination is said to exist.

¹³ This conclusion is implicit in the definition of the benchmark.

benchmark service, for whatever reason it occurs, is defined to be discriminatory and unreasonable.

Because the Zone Parity Benchmark produces “counts” of discriminatory occurrences, a variety of remedy and penalty schemes are possible under this approach. For example, measuring the severity of the service failure by the number of above-benchmark observations makes linking the incentive payments, whether per-occurrence or per-measure, to severity a straightforward process.

The Zone Parity Benchmarks are limits of service provision and no statistical testing is required. Given the “limit” nature of the benchmark, it is reasonable to allow for some “slack” in the benchmarks.¹⁴ It is important to keep in mind that “slack” reduces the quality of service standard and that any reduction in service quality has the potential to harm consumers, CLECs, and impede the development of competition. A careful balancing of the “strictness” of the benchmark and its role of insuring quality service is required.

The SiMPL plan adds slack to the Zone Parity Benchmarks in two ways. First, when the benchmarks are set from actual historical ILEC or CLEC data, a ten-percent slack factor is added to the observed percentages in each Zone. Under a ten-percent rule, the benchmarks for the above illustration would be 27.5 percent ($25 + 2.5$) for Zone 1 and 5.5 percent ($5 + 0.5$) for Zone 2. Additional slack is also added by adopting a “greatest integer” approach when calculating the number of benchmark observations. This greatest integer approach is particularly important for small order counts. For example, consider a CLEC with ten orders in a given month. If the Zone 2 benchmark is five percent, then the acceptable number of CLEC observations in Zone 2 is 0.5 observations. Thus, if any of the CLEC orders are in Zone 2, a remedy is due. By adding slack as the SiMPL plan proposes, this one CLEC observations is within the bounds of benchmark (the next greatest integer of $(0.05)(1+0.10)$ is 1). For this *small* sample, the ILEC is allowed two times (100%) the number of observations in Zone 2 than a “slackless” benchmark requires. Table 1 illustrates the magnitudes of slack for

¹⁴ It is important to note the similarities between the benchmark measures of other performance plans and the Zone Parity Benchmark of the SiMPL plan. The benchmark measures in the other performance plans are typically “stare-and-compare” benchmarks just like those of the SiMPL plan. The basis for the stare-and-compare nature of benchmarks is that the benchmarks contain “fudge factors” or “slack,” allowing for a modicum of variation in performance levels. This slack makes benchmarks limits, not targets. To perform statistical tests on established benchmarks, therefore, is double counting variation. Consistency with the earlier interpretations of benchmarks and the desire to avoid monthly statistical tests, therefore, requires that “slack” be added to the Zone Parity Benchmarks.

the five percent benchmark level across a range of sample sizes. Note that the addition of slack at a five percent benchmark level is very generous, particularly for very small order counts. For order counts between five and one-hundred orders, the average percentage slack is 77 percent. Slack is never less than 10 percent of the benchmark.

Table 1.			
<i>CLEC Observations</i>	<i>Observations at 5% Benchmark</i>	<i>Observations with Slack</i>	<i>Slack in 5% Benchmark</i>
5	0.25	1	300%
10	0.5	1	100%
20	1	2	100%
50	2.5	3	20%
100	5	6	20%
500	25	28	12%
1,000	50	55	10%
10,000	500	550	10%

It is important to keep in mind, however, that all the proposed approaches, whether output-based or process-based, have trouble dealing with small order counts. One possible solution to the small order counts is to pool all small-count CLECs and treat them as a single CLEC (the “CLEC Pool”). Remedies or penalties should be allocated equally or proportionately among the CLECs in the CLEC Pool. For measures with persistently small order counts, such as collocations, an alternative method should be used. For consistency with the Zone Parity Benchmark approach, benchmarks should be set for measures that have persistently small order counts. Failure to meet the benchmark for any observation results in an incentive payment. Performance measures for collocation, and potentially other measures with persistently small order counts, are extremely important to the development of competition. Quality control is essential.

For a few of the performance measures, the Zone Parity Benchmarks will need to be adjusted for seasonality or inclement weather.¹⁵ The required adjustments for systematic changes in performance should be set *ex ante* using historical data. Whether the adjustments require shifting the distribution (i.e., the x 's) or increasing slack should be determined by evaluating actual data. Such adjustments are made during implementation (*ex ante*) and do not complicate

¹⁵ Which measures are subject to seasonal variation can be determined from an analysis of historical data. For continually updated benchmarks, seasonality will be less important.

unnecessarily the monthly administration of the plan. *Ex post* adjustments to the benchmark should be avoided because they create uncertainty.

To illustrate the incentive structure of the SiMPL plan, assume that the CLEC has 100 orders of “repair service.” From our hypothetical data above, 70 percent of the observations were found to be in Zone 0, 25 percent in Zone 1, and 5 percent in Zone 2. Adding slack for 100 orders produces the Zone 1 and Zone 2 benchmarks of 29 and 7 observations, respectively. Assume the observed CLEC data indicates that 35 observations are in Zone 1 and ten observations are in Zone 2. In this hypothetical scenario, we would conclude that there are six observations too many in Zone 1 and three observations too many in Zone 2. When remedies or penalties are levied, the over-population of Zone 2 should be considered more severe than Zone 1 over-population so that the ILEC is discouraged from oversupplying particularly long “repair intervals” (or whatever service the measure captures).¹⁶

In order to ensure that improvements in service are not penalized, any under-population of Zone 2 offsets over-population of Zone 1. For example, say the CLEC data reveals that 30 percent of its observations are in Zone 1 whereas none of its observations are in Zone 2. The ILEC has, in effect, provided better than benchmark service for seven orders; the seven Zone 2 observations received Zone 1 level service. In this scenario, the under-population of Zone 2 offsets the over-population of Zone 1 so that the ILEC satisfies the benchmark.

A few illustrations of the remedy scheme are provided in Table 2. Note that the CLEC should have this same data in its own systems, so this approach allows for CLECs to audit ILEC data. For Measure 1, the Zone 1 benchmark for 100 observations is 29 observations and the Zone 2 benchmark is seven observations. Actual performance is observed to be 32 observations in Zone 1 and 10 observations in Zone 2. Both baskets of observations are out-of-parity by three observations in each Zone. For Measure 4, the benchmarks are met exactly.

¹⁶ Note that a maximum acceptable service level of $2x^*$ is the upper bound of Zone 2. Any CLEC observations exceeding $2x^*$ are above benchmark.

Table 2.					
<i>Measure</i>	<i>CLEC Orders</i>	<i>Benchmark Zone 1 (25%)</i>	<i>Benchmark Zone 2 (5%)</i>	<i>Actual Zone 1</i>	<i>Actual Zone 2</i>
1	100	29 Obs.	7 Obs.	32 Obs.	10 Obs.
2	100	29 Obs.	7 Obs.	32 Obs.	4 Obs.
3	100	29 Obs.	7 Obs.	25 Obs.	6 Obs.
4	100	29 Obs.	7 Obs.	29 Obs.	7 Obs.
Obs. = Observations					

Measure 2 in Table 2 illustrates how the under-population of Zone 2 can credit the over-population of Zone 1. For Measure 2, Zone 1 performance is three observations above the benchmark, but the ILEC satisfies the benchmark because it is below the Zone 2 benchmark by three observations. Because the over-population of Zone 1 is the result of the under-population of Zone 2, credit is given to the ILEC. For those three observations absent from Zone 2, better service was given by the ILEC than required and, as a consequence, no penalty should apply to those observations.¹⁷ Credits cannot be used across months (or whatever period is used to measure performance) or CLECs. The service standards of the plan are for a specified time interval (typically one month) and if the ILEC fails to meet the standard in that time period, then the CLEC has received below benchmark service for that interval.

DS0 Equivalence

Many of the performance measures capture the level of service provided to CLEC for orders relating to individual consumers or households. Some of the measures, alternatively, capture the performance level for services that affect many consumers or households. The interpretation of above-benchmark orders, therefore, should account for differences in consumer impact. The SiMPL plan recommends interpreting above-benchmark observations on a DS0-equivalent (“DS zero”) basis. Remedies for measures that capture performance quality of DS1 and DS3 services are adjusted to DS0-equivalents using the common conversion factors: a) a DS1 is equivalent to 24 DS0s and b) a DS3 is equivalent to 672 DS0s. Such an adjustment would have to be specified for collocations and other multi-consumer impacting measures.

¹⁷ For Measure 3, if Zone 1 were above benchmark (which it is not), then one credit would be available due to the better than benchmark performance in Zone 2.

Absence of Historical ILEC Data

For measures where historical data is not available, or if historical service provision is simply below what is deemed by a State Commission as “reasonable” service, the zone benchmark values must be determined by means similar to the determination of present day benchmarks (e.g., negotiation). Or, historical provision of service to CLECs might be used to set the Parity Benchmarks if that service has been acceptable.¹⁸ Using CLEC data to establish benchmark levels is not prohibited by the Act. Ideally, we could use the observed properties of actual distributions from similar processes or a portfolio of processes to allocate observations to each zone. Certainly, information gathered over time should be used to improve the specification of the Parity Benchmarks.

Updating with Regulatory Lag

The Zone Parity Benchmarks can be updated as frequently as desired to account for improvements in service provision over time. The advantages and disadvantages to more or less frequent updates should be considered when specifying the update intervals. An evaluation of historical data may provide some indication of appropriate update intervals. Monthly monitoring of ILEC service data going forward also may indicate the appropriate update intervals. Further, some measures may warrant more frequent updates while others may warrant less frequent updates. The specification of the update interval primarily is an empirical question and, as such, requires analysis of available data.

Price-Quality Tradeoffs

Under the Zone Parity Benchmark, it also is possible for an individual CLEC to contract (subject to regulatory approval) with the ILEC for lower quality service in return for a discount on service rates (e.g., interconnection, non-recurring charges). This feature is important. Competitive markets typically offer consumers a range of price-quality combinations and strict “parity” service restricts such options. An example of such price-quality tradeoffs is similar to the ability to purchase interruptible power from an electric utility.

¹⁸ For current benchmark measures, the cutoff between Zone 0 and Zone 1 must be determined as well as the benchmark percentage of observations in Zone 1. If too costly to redefine the benchmark measures, then the current levels could remain, implying that only Zone 2 failures are relevant.

III. An Illustration with Real World Data

In this section, the implementation and administration of the Zone Parity Benchmark approach is outlined using actual CLEC and ILEC data on “Order Completion Intervals.” To establish the Zones, we need to know the mean of the ILEC data and the critical value that cuts off 5 percent of the tail. From a sample of 167,533 ILEC observations, the average order completion interval was 1,692 minutes (28 hours or about one day).¹⁹ The completion interval that cuts off the largest 8,376 observations (five percent of the total) is about 5,808 minutes (x^* ; 97 hours or 4 days). About 71 percent of the total observations are below the mean. The remaining 29 percent of observations are split between Zone 1 with 24 percent and Zone 2 with five percent (by definition). The upper bound on Zone 2 is 11,616 ($2x^*$).²⁰ The Zone 1 benchmark (after ten percent slack is added) is 26.4 percent and the Zone 2 benchmark is 5.5 percent. All the Zone Parity Benchmarks are established; all that remains is to compare the CLEC data to these benchmarks.

Table 3 illustrates the performance differences between the ILEC and a number of CLECs. As just described, the Zone Parity Benchmarks are 71 percent for Zone 0, 26.4 percent for Zone 1, and 5.5 percent for Zone 2. These Parity Benchmark percentages are multiplied by the CLEC order count then rounded up to produce the benchmark number of observations for each Zone (**PB** in the table).

Table 3.					
<i>CLEC</i>	<i>CLEC Orders</i>	<i>Zone 1 (26.4%)</i>		<i>Zone 2 (5.5%)</i>	
		PB	<i>Act.</i>	PB	<i>Act.</i>
1	337	89	111	19	17
2	131	35	21	8	1
3	56	15	6	4	1
4	37	10	10	3	0
5	24	7	4	2	0
6	5	2	2	1	0
PB: Parity Benchmark Observations; Act.: Actual Observations					

The examples presented in Table 2 show that the ILEC provides above benchmark service to CLEC 1; the ILEC’s service in Zone 1 was above benchmark by 22 observations (111 – 89). The ILEC does, however, receive two

¹⁹ The standard deviation of the ILEC data is 3,237.

²⁰ Only five of 983 total CLEC observations exceeded this value. Not all CLECs are presented in Table 2.

credits from Zone 2 for a total of 20 observations above benchmark. Overall, the ILEC is a nontrivial 6 percentage points above benchmark for CLEC 1. The ILEC is below benchmark for all the other CLECs in the table.

Table 3.		
CLEC	CLEC Mean	LCUG Z
1	1,927	1.34
2	1,233	-1.62
3	938	-1.34
4	1,132	-1.05
5	1,305	-0.54
6	2,251	0.38
Z Critical Value = 1.28 at $\alpha(0.10)$.		

For comparison, the LCUG Z for each of the six CLECs is supplied in Table 3.²¹ Note that the LCUG-Z indicates discriminatory service (at an α level of 10 percent) only for CLEC 1 – the same overall conclusion regarding discrimination as the Zone Parity Benchmark approach.

IV. Conclusion

The purpose of this document is to outline the major features of Simplified Measurement of Performance and Liability plan (the SiMPL plan). This plan represents an alternative, non-statistical approach to performance measurement. The SiMPL plan promotes “just, reasonable, and nondiscriminatory” service provision through the use of quality of service standards that are both within the capabilities of the ILEC and of sufficient quality to facilitate the evolution of competition in local exchange telecommunications markets. Moreover, these service standards, based in many cases on observed ILEC performance, provide CLECs with certainty as to what level of service to expect from the ILECs and provides the ILECs with certainty as to the level of service required to avoid incentive payments.

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²¹ The LCUG Z values are from the simple LCUG Z formula, regardless of sample size, and are not based on permutation analysis.