



ASSIA®

Neighborhood Analysis

Highlights

- Expand visibility to an entire community of DSL customers
- Identify neighborhood patterns for plant-level diagnostics
- Predict DSL performance to support targeted local marketing campaigns
- Improve dispatch productivity and reduce truck rolls

Gain Valuable Insight into the DSL Network

Despite an abundance of DSL hardware test sets and diagnostic tools, many telecommunication companies still struggle with two key operational challenges: improve dispatch productivity and reduce truck roll costs.

One of the fundamental issues with a traditional customer support approach is that it is designed to react to specific individual complaints. As a result, the entire system is set into action with the sole objective of addressing just one broadband customer's issue, and ignoring any potential savings or productivity improvements that could be gleaned by considering the bigger picture.

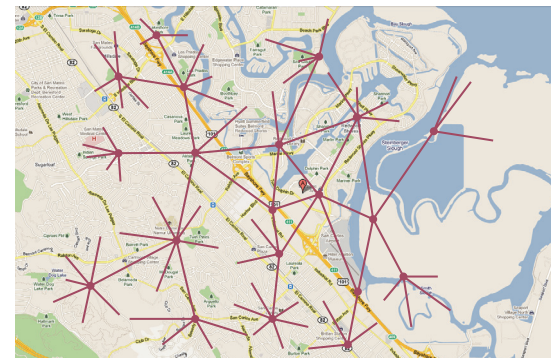
The ASSIA® DSL Express® Neighborhood Analysis software module expands the service provider's visibility from the one, lone DSL customer to the entire community or neighborhood of DSL customers. Patterns can then be identified and leveraged for advanced diagnostics at the plant level, rather than at the subscriber level, and can accurately help predict potential DSL performance for future highly localized and efficient marketing campaigns.

A Revolutionary Concept in DSL Operation

The fundamental concept behind the idea of a DSL neighborhood is that a DSL group closely located, likely delivers similar performance. In the absence of impairment, DSL performance is limited by electrical loop length, so similar loop length within a similar noise environment typically delivers similar performance.

With such a concept, the poor performance of one DSL in a neighborhood where all other lines are synchronized at twice the speed proves the need for a dispatch, enabling the first-level support team to make more productive and effective decisions on how to proceed. ASSIA Neighborhood Analysis also carries information for the network maintenance team on how the binder is performing and whether

the fault is isolated to that one line. For the local sales team, the knowledge that prospects within this community now can be offered the higher speed comfortably means greater opportunities to target sales successfully.



Proper Neighborhood Definition Is Key to Success

ASSIA DSL Express® includes more than 40 fields to allow flexibility around the definition of a neighborhood. This offers the service provider multiple options to target sales. For instance, a narrow definition that includes all the lines routed through the same cable would be more appropriate for diagnostics than for prequalification, which may simply require a loose definition that allows the call center agent to select how to route the service for optimum performance.

As an example, the following parameters may be used to define the neighborhood, when available:

- Serving Terminal
- Address
- Cable
- Address + Cable
- Crossbox
- Geo-data Capable

Simplify the comparisons of local line performance to identify how best to fix an issue, or target sales.

High Value Diagnostics

Neighborhood analysis simplifies the comparisons of local line performance to quickly identify if a truck roll at the physical address can help fix the problem, or if the issue is in the binder. In the example below (Figure 1), two lines are clean and are shown to achieve a MABR of approximately 4.5 Mbps (in green). Two other lines are showing 768 Kpbs and 1472 Kpbs (in red) and are perfect candidates for a dispatch.

In the event that the neighborhood report shows a high AM noise across an entire set of lines, the system helps the network repair team identify the binder carrying all these lines as improperly grounded. An intervention on this cable likely will result in improved performance for all the DSLs in the binder, as well as help increase dispatch productivity.

Resolve Your Prequalification Challenges

One of the big challenges for service providers promoting advanced broadband services is to ensure that the service promoted can actually be delivered at an acceptable cost. This is a very subtle tradeoff between revenue opportunity and operating costs with a certain tendency to err on minimizing the OPEX. The ultimate solution to

such a problem is to send a DSL modem to every household and test every single line to understand the real performance the line could deliver using Dual-Ended Loop Testing (DELT) diagnostics. However, this is not something which can easily and economically be applied in a standardized manner for service provider operations.

Existing prequalification tools only deliver very basic approximation based on pure electrical propagation methodology, in this case Single-Ended Loop Testing (SELT), and ignore the characteristics of the DSL signal.

The Neighborhood Analysis software module helps resolve prequalification challenges by delivering reliable and accurate DSL information for a community or vicinity, identifying the best rates in the group, and allowing the service provider to properly select the maximum speed to promote, with the appropriate margin of safety (e.g., 50th, 75th, or 90th percentile).

In the highlighted section of Figure 1, surrounded by dotted lines, results indicate that 2 to 2.5 Mbps can safely be sold in this environment, while speeds in the range of 3.5 to 4.5 Mbps can be sold but may require a truck roll.

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Address of the Line

Line ID	Street Number	Street Name	Street Type	City	State	Zip Code	CLLI	F1 Cable Name	F2 Cable Name
000-153-5007	385	STREET-250053	RD	CITY-10	CA	99405	BRFRCT00	990	248

Lines in the Neighborhood

Line ID	Street Number	F1 Cable Pair Number	F2 Cable Pair Number	Loop Length (meter)	UpstreamMABR (Kbps)	Downstream MABR (Kbps) (Estimated)
000-078-9717	325	180	280	5607	608	768
000-078-9879	327	180	280	5016	768	4768
000-193-2766	333	180	280	5902	608	1472
000-193-2948	353	180	280	5459	704	2496
000-193-7998	359	180	280	5312	704	2464
000-195-5121	369	180	280	5164	704	2944
000-195-7520	373	180	280	5164	768	2144
000-193-5007	385	180	280	4775	800	4416

FIGURE 1. An example of how the Neighborhood module can be used to make better dispatch decisions