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**Gain Valuable Insight into the DSL Network**

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**Proper Neighborhood Definition Is Key to Success**

ASSIA DSL Expresse 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

**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.
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 Kbps and 1472 Kbps (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.

Contact ASSIA today
+1.650.654.3400
or email sales@assia-inc.com

333 Twin Dolphin Drive
Redwood City, CA 94065
Tel: +1-650-654-3400
Fax: +1-650-654-3404
www.assia-inc.com

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