



**xDSL line qualification
system beats traditional
methods**

The Need for Speed...

The Internet has accelerated demand for broadband services such as access to the world wide web, video on demand, streaming video and audio, voice over IP, instant messaging – the list grows longer almost daily. Market estimates indicate that consumers will expect 10 to 50 Mbits/s delivered to their homes within the next decade vs current modems speeds measured in tens of kbits/s.

xDSL to the Rescue

Digital Subscriber Line technologies such as IDSL, SDSL, ADSL and VDSL have the capability to unleash the bandwidth potential of the existing copper access network and deliver bandwidths of hundreds of Kilo bits/s to many Mega bits/s.

To Provide or Not to Provide ?

A network operator's biggest dilemma is knowing when to accept or decline an order for xDSL services. Uncertainty about physical network characteristics create circumstances where service is incorrectly declined, with associated loss of revenue, or where commitments are made that cannot be fulfilled with ensuing customer dissatisfaction and possible regulatory penalties.

Not all loops are made equal !

So how do we know which lines are DSL compatible and if so what speed they can support ? The simple rule of thumb is to use line length as an indicator, however, this is at best an imprecise technique that leads to many lost sales opportunities or embarrassing mistakes. In the real world lines are composed of mixed gauge cables with widely varying high frequency characteristics (see over).

i.Scan is the answer.

...using automated single ended line qualification to accurately predict line speed allowing you to sell the best available services to your customers **with confidence**.



Features

- **Single Ended Line Qualification (SELQ)**
- **Advanced line model** based insertion loss prediction gives more accurate qualification than traditional methods – minimises false "OK" (GREEN) and "Not OK" (RED)
- **Automated qualification** of individual lines
- **Batch qualification** of network on scheduled or periodic basis
- **Rules engine** supports multiple service templates
- **Qualified results stored** for off line analysis and real time retrieval
- **Web based** user interfaces

Benefits

- Identifies best service that can be offered to each customer - **maximises revenue opportunities, customer satisfaction and retention**
- Minimises errors when predicting line compatibility – **reduces customer dissatisfaction and possible penalties**
- Single ended testing from the serving exchange location eliminates need for two man line up or expensive analysis of drawing office records – **eliminates costly truck rolls, back office expenses and reduces time to deliver new services**
- Provides up to date evaluation of network for customer service representatives, planning and marketing organisations – **on line service qualification of lines supports touch less service provisioning and minimises delays**
- Network analysis can be used to target new services, groom network etc - **valuable information supports effective deployment of services to maximise ROI**
- Future proof - configurable rules engine provides open solution to current and future generation xDSL service qualification – **safeguards investment and simplifies introduction of new services**

porta systems
CORP

...making high speed Internet access a reality

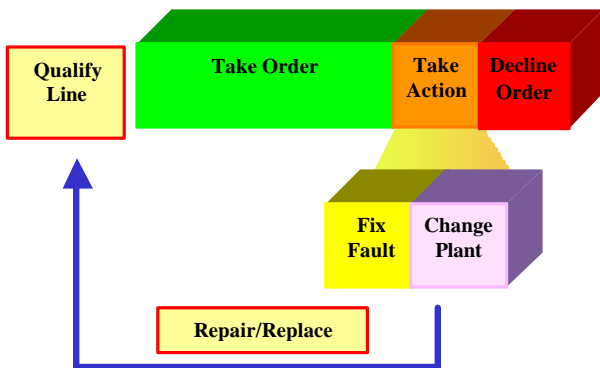


i.Scan uses patented measurement algorithms to determine (pre-qualify) a copper lines capability to transmit digital services. The application is based on Porta Systems field proven LTS2000 Line Test System which is in service with many Network Operators around the World, with the additional capability:

- Enhanced Resistance Tests
- Insertion Loss Measurements
- Detect Load Coils, Bridge Taps
- Noise Spectrum Analysis

i.Scan enables system users to determine if a copper line has the capability to carry digital services (ISDN, ADSL, HDSL, VDSL) without the need to conduct expensive 2 man line-up exercises or costly truck rolls.

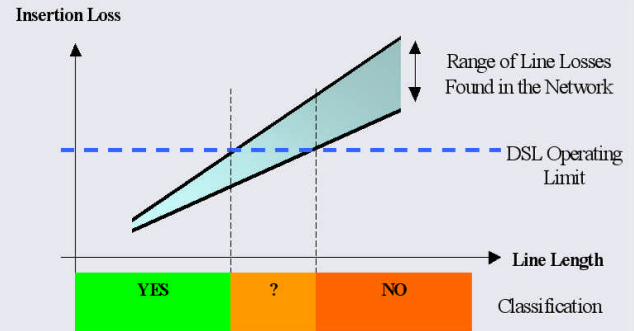
i.Scan answers the question... *what high speed digital services can a network operator offer a new or existing customer ?* This is also an important consideration when unbundling circuits and/or bandwidth to other network operators or ISPs. Knowing the value of network inventory provides a basis for reselling according to service carrying potential. Each line is typically qualified for multiple services and colour coded according to capability: Green for “OK”, “RED” for not suitable and “Amber” where further action is required, for example, to fix a line fault. Given the information available from **i.Scan**, if the requested service is not feasible, the customer can be offered the next best alternative. On the other hand a circuit in the “Amber” category for a particular service may be useable subject to further fault investigation or by substitution of alternate network plant.



(*) Statements are based on field trial results. Actual results may vary dependant on network characteristics.

Predicting Line Performance

Local lines are typically composed of cables of different gauges. A typical line may have multiple sections of several different gauges making it difficult to predict the high frequency characteristics based on line length – a high loss will result in lower speeds or worst case, failure to operate reliably. The following figure illustrates the significant variation in loss of lines in typical network:



For any particular line length we can see a wide range of high frequency losses. Any qualification system that simply uses line length to determine service capabilities will leave a significant percentage of lines in the amber or “?” category. These lines will require time consuming and expensive testing or further investigation to determine if they will support DSL services.

i.Scan uses sophisticated modelling techniques to accurately predict transmission performance – controlled trials comparing line length based qualification with **i.Scan** show that an additional 12% of lines can be accurately automatically classified without field intervention.* This significantly reduces the cost of deploying DSL services.

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