

## Cable & Wireless PXS Application

In November 2003 Technical Direct, Towcester UK, contacted us being interested in our XOT (X.25 over TCP/IP) and Nortel's AFT (Automatic File Transfer) solutions. TD provides mediation solutions to telecom companies, that relies on underlying 3<sup>rd</sup> party communication software. For their customer Cable & Wireless (Continental Europe) TD planned to replace the current AFT/XOT/X.25 software.



We are very familiar with XOT. In 1999, we developed XOT client/server software for Pacific Bell (SBC, now at&t) used to connect to more than 400 switches, a mix of Nortel DMS-100 and Lucent 5ESS, through front-end XOT Cisco routers ([see PacBell XOT application story](#)).

Advanced Relay advised TD using our newly developed PXS to exchange the AFT/XOT/X.25 directly at the DMS/100E for a simple Remote File Service (RFS) to the CDR-file collector. This is paramount in providing the DMS-100E with an FTP/Ethernet interface, much simpler than the AFT/XOT/X.25 solution. For that reason and anticipated cost savings C&W agreed employing such a solution, if feasible.

All parties agreed to meet at C&W Paris to  $\alpha$ -test the PXS, lasting 2 ½ days. We were able to establish connections on all protocol levels: physical, link (LAPB), network (X.25) and AFT. As expected, the DMS-100E AFT differed from the DMS-250 version we supported; files were sometimes truncated. With C&W help we monitored and captured a complete AFT session and made the necessary corrections to the AFT protocol.

In cooperation with TD we refined the RFS to simultaneously support multiple switches, and added the following remotely accessible services through different TCP/IP ports:

- Update or reconfigure the PXS software through the [web server](#)
- Take [control of the application](#) running on the PXS
- Obtain [logging information](#) during the communication session
- Monitor PXS data lines at the [physical, link, network and AFT application layer](#)
- Receive e-mail (SMS) from the SMTP about potential communication problems

After successfully testing PXS on one DMS-100E switch in Paris for several weeks, C&W gave the go-ahead for all other European DMS-100E switches. On April 7<sup>th</sup>, 2004 TD informed us that all switches have been successfully upgraded using the PXS. On April 17<sup>th</sup>, 2004 C&W confirmed that everything works fine.

*4/7/2004 Terry Powel, TechnicalDirect: "The good news is that the fix David/Hernando sent worked perfectly and the Zürich box has been working fine ever since. Even better news is that the 4 boxes you sent over the weekend arrived Monday morning and I had them configured and on their way around Europe by that afternoon... and after a very hectic day yesterday, all 9 GSP switches are now using the PXS boxes and our old X25 capture software is turned off and ready to be decommissioned. So a big thank you for getting the last batch of boxes here so quickly and for all the help you've given me in setting them up."*

*4/17/2004 C&W Paris: "I worked with Terry to implement the last PXS boxes in Barcelona, Milan, Düsseldorf and Frankfurt a week before Terry took his vacation. We were happy to implement the PXS very quickly and we are currently downloading files using PXS boxes without any issue".*

*6/29/2004 C&W Paris: "PXS boxes are running quiet well on all European location, that is very good product in my point of view. The new feature with VPN connectivity should be very useful, maybe some European site will be connected via VPN solution, but still on project perspective".*

*12/6/2004 C&W Paris: "Since the installation I don't get issue with PSX. Each time we experienced issue downloading files from CDs it was due to Router issue behind the files collect."*

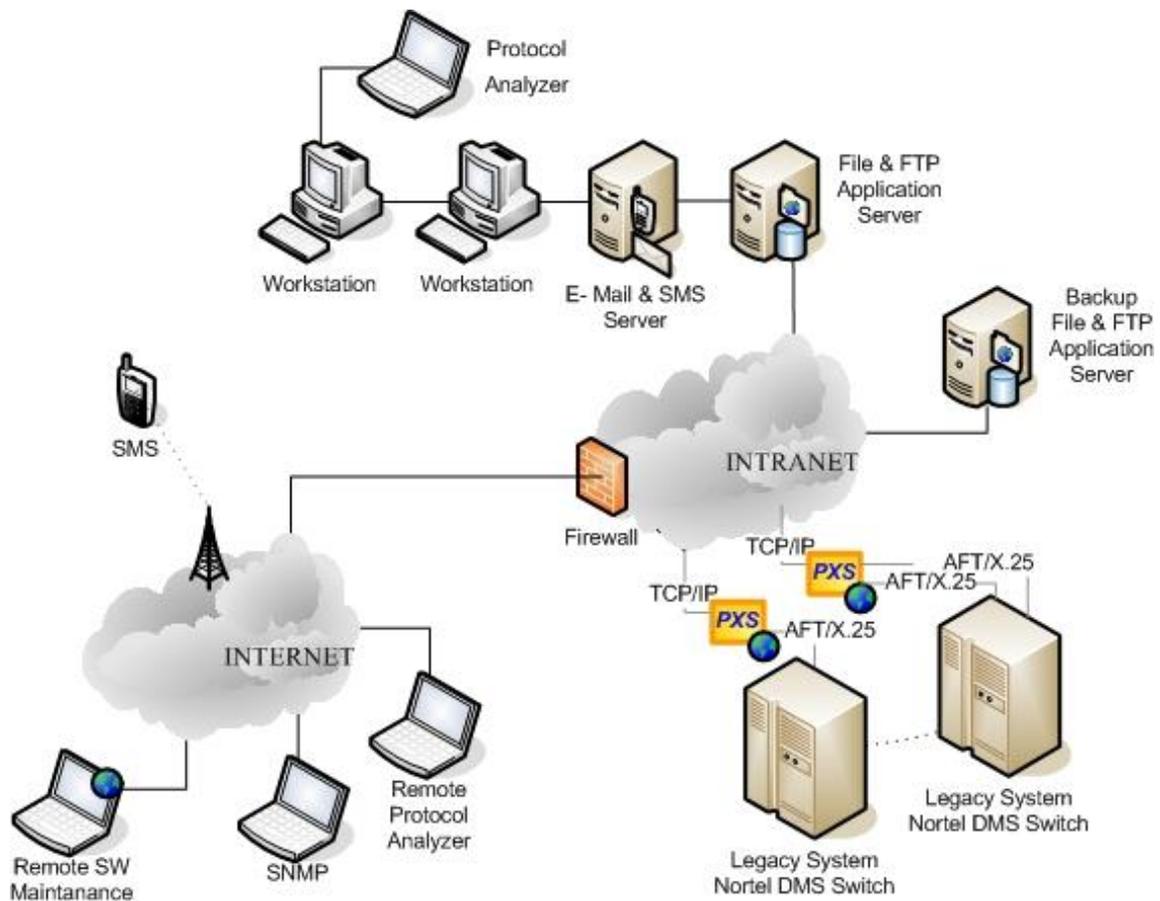
*9/30/2005 C&W Paris: "Remarkable, the PXS never failed! Since the installation in April 2004 all PXS units worked without any problems. Because of increased traffic we are now considering adding multilink support, using the PXS' second synchronous port."*

**Conclusion:** The PXS is working since April 7<sup>th</sup>, 2004 without any problem. There is no better reward for the team effort of C&W, TD and ARC. By terminating the AFT/X.25 at the switch, the CDR-File collection is simpler and saves C&W money. The PXS not only replaces the Cisco Routers running XOT, but also 9 CDR-file collectors with XOT and AFT client software. In addition the PXS provides additional remotely accessible services as listed above.

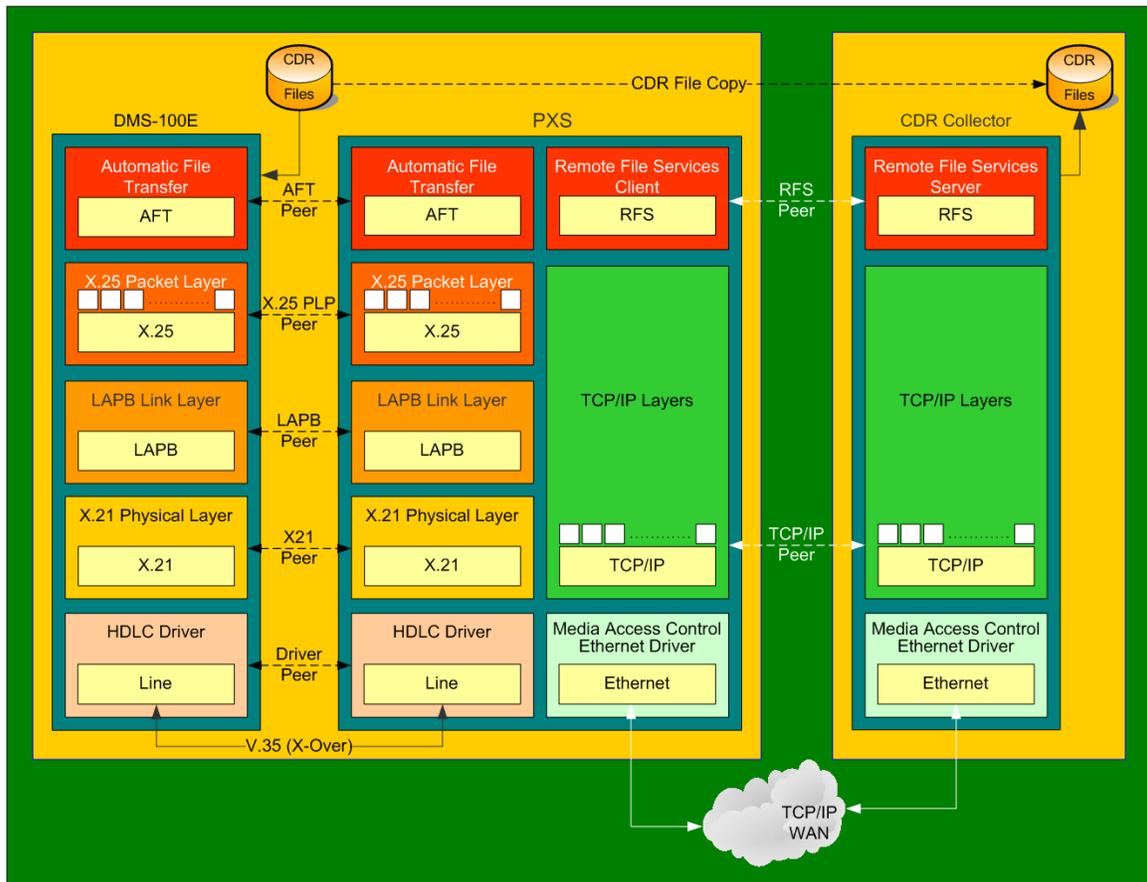
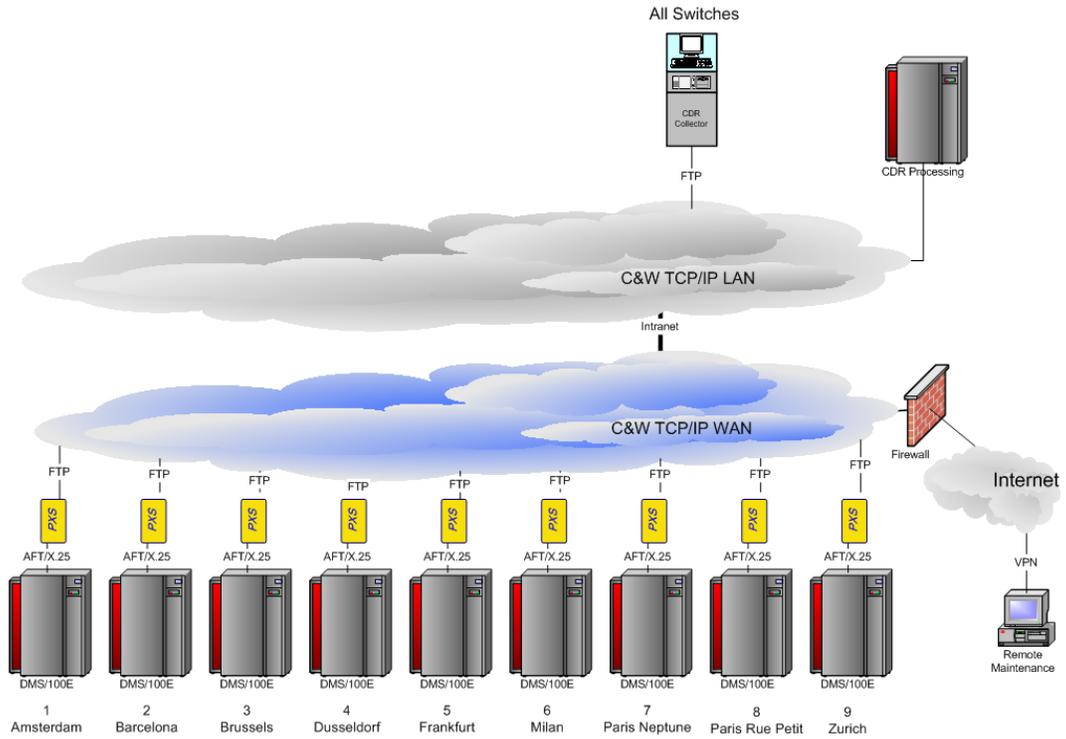
**Recommendation:** ARC strongly recommends housing the PXS inside the DMS-100E rack and connecting the PXS directly to the switch's synchronous port. The switch interface will now be TCP/IP/Ethernet. A CAT5 cable replaces the bulky V.35 cable with

all the adaptors, gender changer, SME (Synchronous Modem Eliminator), always (!) potential sources of communication failures.

**Possible additional features:** (1) The PXS can connect to both synchronous ports of the DMS-100E and support the AFT Multilink Protocol. That would double the number of downloadable CDR-files. (2) The DMS-100E maintenance port remotely accessible either through an asynchronous modem or through a special Virtual Circuit could be supported through a Telnet TCP/IP port. (3) For security and redundancy, a Backup CDR-file collector could be installed.



Cable & Wireless (Paris) new CDR Collection using ARC's PXS AFT/X.25-to-FTP Exchange



Cable & Wireless (Paris) previous CDR Collection using Cisco XOT Routers

