

# APPLICATION NOTE

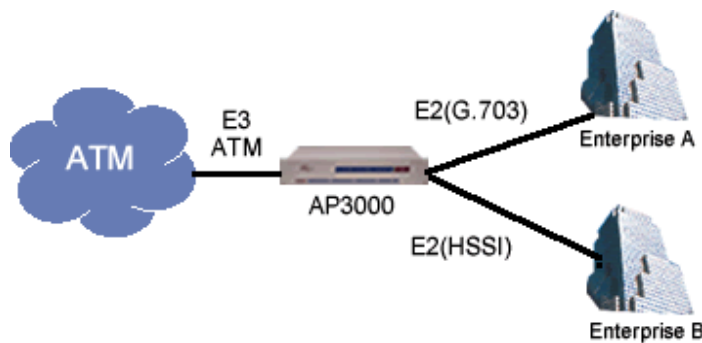
## APX Application E2 Service Delivery

Carrier Division



## E2 Service Delivery

For a network operator, leased line service delivery is still a requirement. However, with technology convergence and efficiency goals, running separate networks for voice and data has become a thing of the past. In many cases, the core networks are ATM based, utilising the quality of service guarantees and low latency for multiple service delivery. With the wide range of available ATM interface modules, and low cost the APX provides the service provider with the ideal tool for delivery of services over an ATM backbone.



The most basic application is that of an E2 service at 8.448Mbps. Here the service is presented to the customer as either G.703 or HSSI, utilising the Dual E2 or HSSI CBR interface modules respectively. In both cases, allowing for overheads, the link to the customer site must be a higher speed, either E3 as above or with the rapid growth of fibre deployment STM-1. Since this link utilises ATM, there is no reason that it could not supply further services to the same customer, or other customers in the building or business park thereby enabling the operator to make greater savings. For example, a single E3-3 connection into a business park could, using an AP3000, be fanned out to offer 4 E2 leased line services, or maybe 2 E2's and 2 E1's. Utilising the HSSI CBR interface in place of the G.703 modules, removes the requirement for routers to be fitted with WAN ports or the use of an external DSU.

Carrier Division

A key benefit of service delivery using the HSSI is future growth. Once the infrastructure is put in place, the link to the customer, and the E2 HSSI Module, it is a simple task to upgrade the customer interface to a higher speed as and when the need for bandwidth increases.

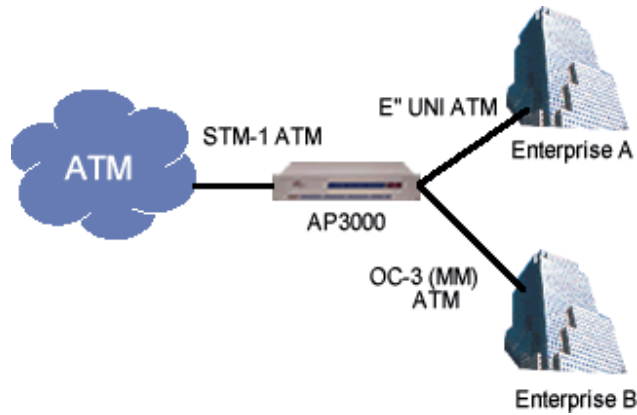


Figure 2. E2 ATM Service Delivery

Alternatively, an ATM service may be supplied as shown in figure 2, however whilst the physical interface to the customer site, may be E3 or STM-1 the customer only requires an E2 service. This could be delivered directly using an E2 UNI module, or alternatively, and more usefully as an OC-3 MM interface for direct connection to the enterprise ATM switch. By fitting the APX Policing Module to the ATM downlink the operator can ensure that no more than 8M of bandwidth is made available for customer use.

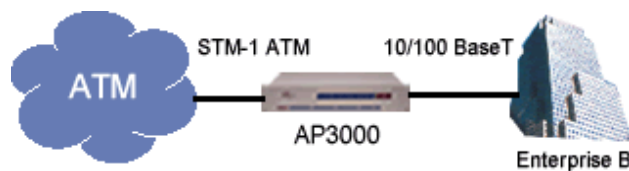


Figure 3. E2 LAN Extension Service Delivery

As a final option, a LAN extension service may be offered as a direct 10/100BaseT service. Here, the integral LAN port of the AP3000 is used to provide the customer facing port, with a single ATM UNI interface. Through the traffic shaping abilities of the APX Packet interfaces, the APX may be limited to transmitting a maximum of 8M into the network.

Carrier Division