

# INTRODUCTION

Sangoma Technologies Corporation develops, manufactures and markets connectivity hardware and software products for Wide Area Networks and the associated infrastructure. These products include extensive diagnostic, monitoring and debugging tools, which provide unrivaled assistance in resolving network problems and supporting the WAN connection. As a natural extension to the general commercial deployment of these products, Sangoma has specifically adapted them for use in educational institutions where it has been traditionally difficult to simulate WAN connectivity within a laboratory environment.

The Sangoma WAN EduKit software allows the user to simultaneously monitor and emulate WAN traffic using an interactive, graphical interface. The monitoring functions include extensive statistics packages as well as a protocol analyzer that performs real-time line traces. Typically, laboratory sessions would accompany theoretical lectures so that the students could see the actual WAN traffic and become familiar with the frame structure and the nature of the protocol at hand. Protocols that may be taught using the Sangoma WAN EduKit include ATM, Frame Relay and X.25. This toolkit includes both software and sample laboratory documentation for the three protocols listed above:

For ATM:

- The Basics of ATM Architecture - Physical Layer
- The Basics of ATM Architecture - ATM Adaption Layer
- Virtual Channels
- Operations, Administration and Maintenance (OAM) functions and the PVC status
- ATM Cell formats

For Frame Relay :

- Sending and receiving Information frames
- Determining the status of a PVC
- Frame Relay configuration
- CIR (Committed Information Rate) usage
- Frame Relay frame formats

For X.25:

- Sending and receiving Data packets
- Virtual call setup and clearing
- X.25 facilities and flow control negotiation
- X.25 and HDLC configuration
- HDLC frame and X.25 packet formats