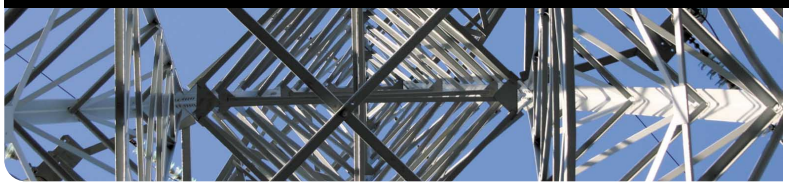

eLAN™ *Front-End Processor*

Bow Networks' eLAN product family addresses a wide range of communications and data integration issues from the substation to the control center, and into the enterprise. Each product is focused on a specific application within the utility's communication infrastructure. The eLAN Front-End Processor is packaged to address the utility's need to manage communications from remote sites, over a range of communications media.

Benefits

- **Offload EMS communication processor**
- **Economical port expansion**
- **DNP Poll Accelerator**
- **Management of complex communication infrastructure**
- **Wide range of security options**
- **Supports redundant masters and control centers**
- **Optional enterprise access**

eLAN Front-End Processor Overview

The eLAN FEP is based on our field-proven TIE (Telemetry Integration Environment) module, which was originally developed as the telemetry front end for a major EMS vendor and is currently installed in over 50 utilities worldwide.

The eLAN FEP provides protocol mediation capability in a vendor-neutral configuration, allowing users of a wide range of EMS systems to offload many of the tasks of managing communications with their field devices. eLAN FEPs are frequently deployed to provide capabilities not available in native front ends, such as IP network support, security, or simply as a cost effective way to add additional ports.

The eLAN FEP may be easily upgraded to provide full enterprise application integration through the addition of open interfaces such as OLE for Process Control (OPC) and ODBC. These interfaces allow other applications, such as historians or enterprise databases, to access data from field devices without requiring an interface directly to the EMS.

Poll Acceleration

Although RTU response latency is rarely a significant issue in the serial world, it is a substantial factor in a networked environment. It has been found to be a key factor in determining how many devices can connect on a LAN or WAN based on desired update rates. The issue is not the volume of data but device latencies. Network based RTUs and IEDs often take hundreds of milliseconds to respond to a DNP poll. This is largely due to the extra processing required for the Ethernet, IP, and TCP or UDP layers. An eLAN FEP will poll the high-latency RTUs or IEDs and have the data available for the master in low latency VRTUs, resulting in lower overall latency and better network utilization.

Front-End Processor Features

- **Supports over 40 protocols, including:**

DNP 3.0	IEC 870-5-101/103	Modbus	Harris 5000/6000	Siemens Sinaut
Telegyr 8979	Conitel 2020/2025	ABB Indactic	CDC types 1 & 2	

- **Throughput > 50,000 events/second**
- **Multi-host support**
- **Supports both serial & network connections**
- **"Eavesdrop mode", allows FEP to extract data by passively listening on a communications circuit**
- **Up to 64 ports in 4U chassis**
- **Web based user interface**
- **Robust, secure, Linux operating system**
- **Non-proprietary hardware platform**
- **Hot-swap redundant power supply**
- **Field upgradeable software architecture**

Front-End Processor Options

- **IED Interfaces:** Gathers current, historical, and file data from a very wide selection of IEDs
- **Automated File Manager:** Extracts, archives, and notifies users of persistent and fleeting IED fault alarms.
- **OPC Server:** Provides real-time substation data directly to OSIsoft's PI system.
- **ODBC Server:** ODBC Server is an open database for access by any ODBC compliant application.
- **Redundancy:** Full, hot-standby implementation for mission critical applications
- **SNMP Agent:** The SNMP agent provides a standards-based administrative interface to *e*LAN.
- ***e*LAN Security Modules:** The *e*LAN family contains a variety of additional authentication and encryption components which may be selected and deployed based on the utility's own security philosophy and operating practices.

About *e*LAN

Bow Networks' *e*LAN family includes a broad range of software applications to facilitate the connection of enterprise information systems to any device, anywhere, at any time. *e*LAN products may be deployed in the substation, at the control center, or elsewhere, to assist in accessing substation data. *e*LAN applications include protocol conversion, security, open data access (OPC, ODBC), and automation. Please visit www.bownetworks.com for more information.

About Bow Networks

Bow Networks was founded in 1986 to provide real-time computing expertise to utilities and electric industry vendors. Throughout these years of successful operations, the Company has established its reputation as a leader in applying to sophisticated network-based solutions and user applications, expert knowledge of protocol translation, security, enterprise networks, LAN/WAN technology, and communications media. Bow Networks is fully committed to the electric utility industry and has invested significantly in what is now the most advanced platform for substation communications and data management – *e*LAN.

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