Supporting SCADA Protocols over IP Networks

The Challenge

Over many years, utility companies have standardized on a system of intelligent control devices to assist in the delivery and monitoring of services to their customers. These systems typically communicate using Supervisory Control And Data Acquisition (SCADA) protocols, and have historically depended on direct point-to-point connections using leased lines. With the growth of packet based network services and the Internet, there are major cost benefits to be realized by replacing these point-to-point leased lines with more modern communications technology. However SCADA is rarely used outside the utility industry and the protocols are not supported by conventional packet based switches or router networks. Additionally, there are a variety of SCADA standards using different physical interfaces, different polled multi-drop line formats, and unique message and response sequences.

Utility companies need a way to reduce the cost of expensive leased lines while still maintaining a high level of control over the communications. The ability to add new levels of network management, backup links and allow the gradual migration to modern IP based monitoring and control equipment is also important. The solution needs to be flexible to allow for the continued growth of traffic in the network, and with the critical nature of the data being transferred, the solution must be extremely reliable and secure. Transparent systems that simply encapsulate the SCADA data do not work because they introduce extra delays which can lead to host timeouts. Most conventional IP networks drop packets from time to time - also undesirable in the SCADA environment.

The Solution

The NSGDatacom TURBO product line provides an ideal solution for reliably and securely transitioning SCADA equipment onto modern packet based networks. TURBO products directly support SCADA multi-drop circuits and various versions of the SCADA protocol in native mode. Polling delays caused by the network are prevented from occurring and thus potential time-out problems between the RTU's, IED's and the SCADA host management system are eliminated. The store and forward mechanisms of the TURBO products guarantee error free delivery of every message.

The TURBO product line can replace existing leased line connections of a SCADA with frame relay or IP based connections across private or public networks. Communications from multiple SCADA multi-drop segments can be aggregated onto a single network connection with automated backup for increased reliability and security. The PicoTURBO and PacIII TURBO products can provide both Host Management and Remote Terminal Unit (RTU)/Intelligent Electronic Device (IED) emulation modes for completely transparent operation with existing SCADA networks. The TURBO products can also provide IP encapsulation with error protection and guaranteed delivery between SCADA end points. Automatic backup links may be via dial, wireless or secondary network connections.

The TURBO family of products support the use of satellite and/or wireless connections, which may further reduce costs or provide services in remote areas not serviced by terrestrial facilities. Network Management via SNMP allows easy installation operation and maintenance. Sophisticated network management tools allow configuration, diagnostics, reporting, and alarms to be centrally managed.

Multiple Native Mode SCADA Versions Supported

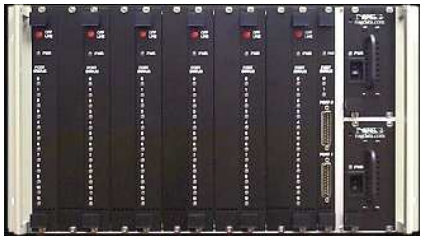
Smooth Migration to IP Without Replacing Existing Equipment

Secure VPN with Guaranteed Message Delivery

SNMP Management Easy Installation

Wide Range of Network Protocols

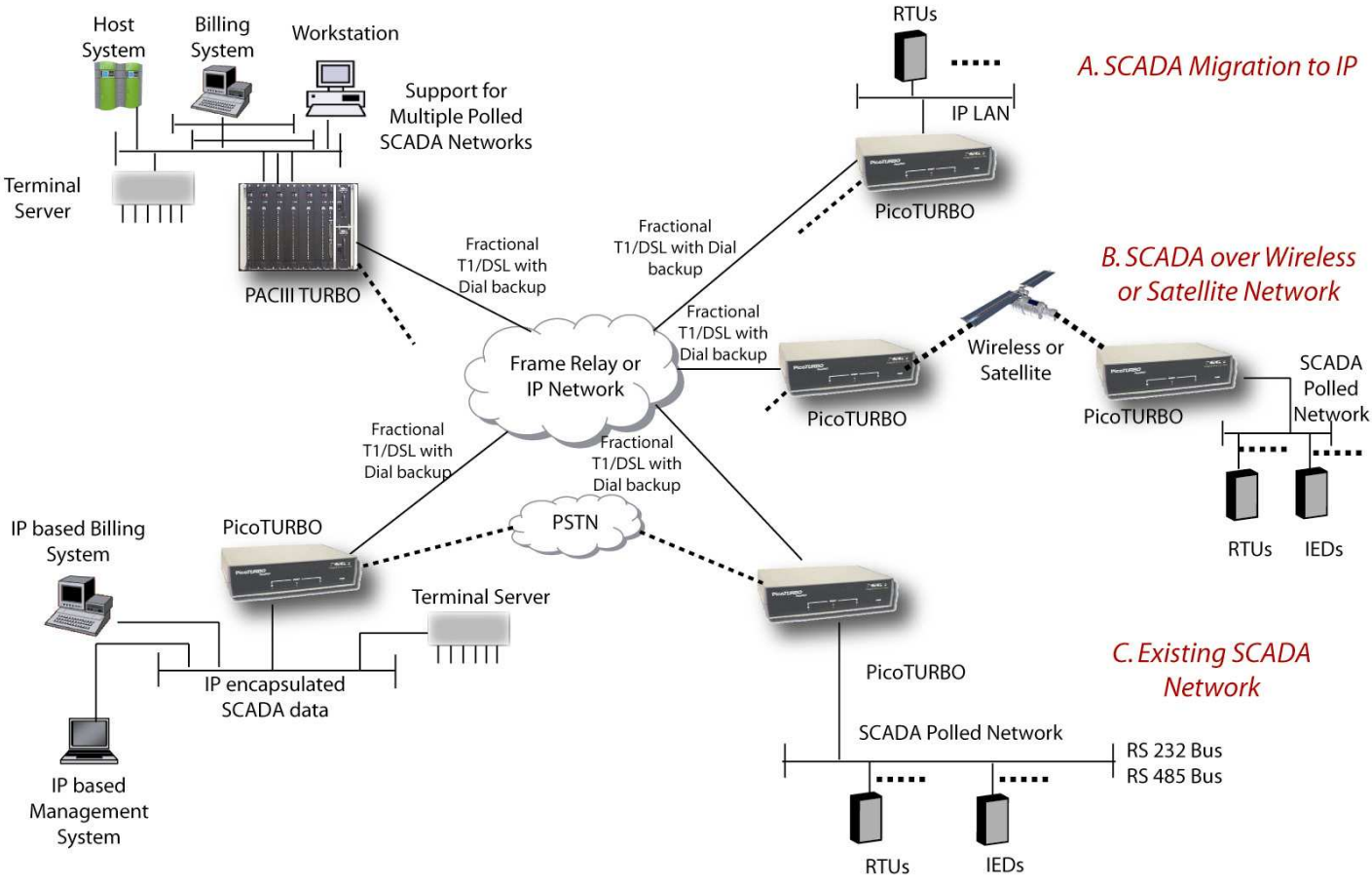
Automated Back-up Links



PAC III TURBO

PicoTURBO

SCADA Network Application



SCADA Host Systems **SCADA Power Utility Sites**

About NSGDatacom

NSGDatacom designs, manufactures, sells and supports a wide range of voice and data products focused on real world
business communication needs.

Combining key strategic acquisitions with its own core development team, NSGDatacom utilizes a wide range of proven,
stable technologies. NSGDatacom create solutions with these technologies to maintain and preserve organizations' network investments and mission-critical applications while enabling a smooth migration to newer technologies.

NSGDatacom products are deployed worldwide in corporate, financial, government, utility, carrier, satellite, and cellular networks.

NSGDatacom

www.nsgdata.com

3863 Centerview Drive Chantilly, VA, 20151-3232 USA Phone: +(1) 703 793 2000 Fax: +(1) 703 793 2001	7435 New Technology Way Frederick, MD, 21703 USA Phone: +(1) 301 662 5926 Fax: +(1) 301 694 6279	The Brackens, London Road Ascot, Berkshire SL5 8BE, UK Phone: +(44) 1344 893 000 Fax: +(44) 1344 891 990