

Open Systems or proprietary protocols

Serial or IP based

Leverage new technology

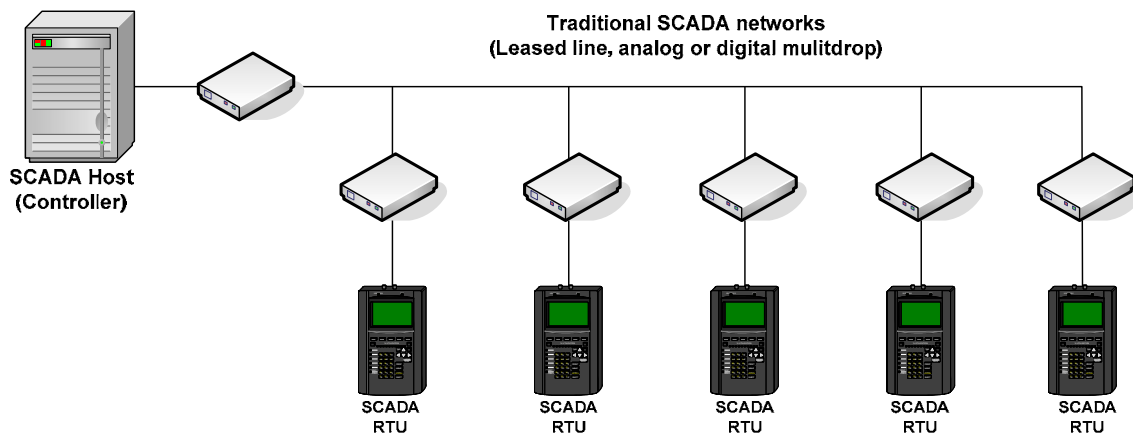
Reduce monthly recurring telco costs

Support multiple devices per site

Vanguard Networks has a solution!



Supervisory control and data acquisition (SCADA) applications allow users to monitor and control various remote functions and processes. Traditional SCADA networks are designed using leased line point-to-point, or multipoint circuits which allow the master controller to poll each slave in a predefined order. Through this process, the master can oversee the slaves' control, maintain the process, and react to changes at the remote sites.



The network is the infrastructure over which the SCADA systems control a wide range of remote terminal units (RTUs) and programmable logic circuits (PLCs) using proprietary and industry standard protocols, such as DNP3, ModBUS, Motorola's MOSCAD, and Allen-Bradley's DF1, as well as some of the newer systems which are IP based.

SCADA systems can be relatively simple, such as one that monitors the environmental conditions of a small office

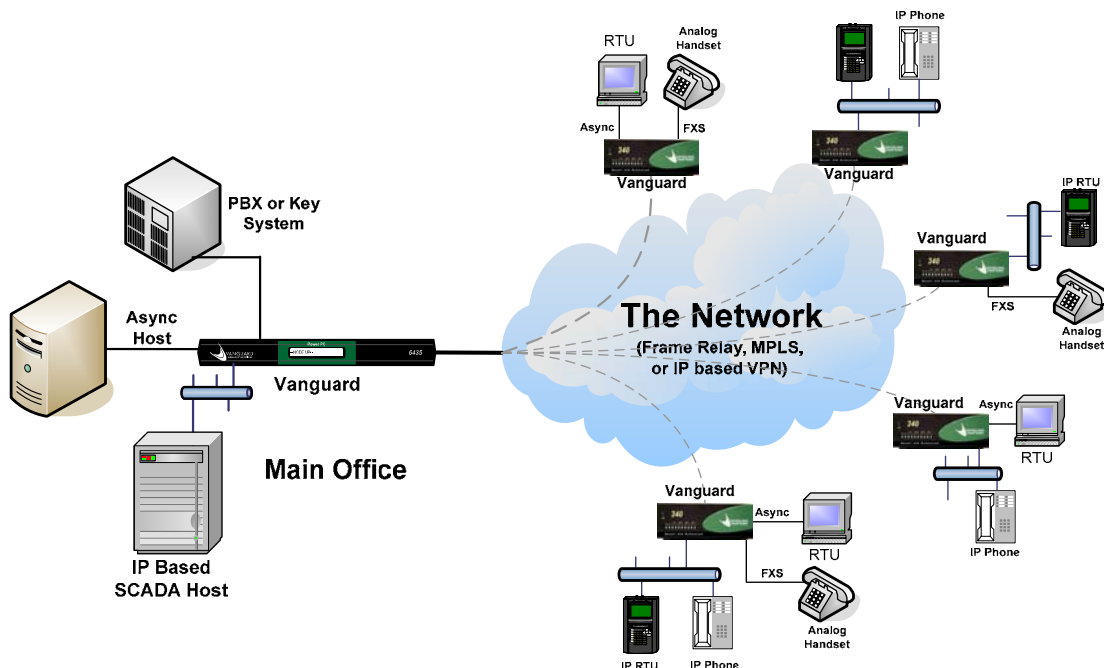
building, or incredibly complex, such as a system that monitors all the activity in a nuclear power plant or the activity of a municipal water system.



Vanguard Networks provides converged network solutions deploying emerging transformation technologies to integrate voice, data, and video over a single network combining the latest architectures such as MPLS, Broadband VPN, and SIP Trunking to take advantage of the tremendous cost savings and value added services offered today. The Vanguard advantage enables non-IP SNA, SCADA, and serial data and voice access into these heretofore IP-only networks as an element of the IP convergence solution.

Vanguard Networks' suite of multiservice gateways provide a unique solution to the Utility industry; one that integrates existing half-duplex SCADA processes with newer IP-enabled processes, and eliminates costly leased line circuits with a more flexible and functional packet-based network (Frame Relay/MPLS/VPN). That in turn facilitates the integration of other traffic types, like voice - and Vanguard gateways offer a full complement of analog and digital voice features, as well as voice over IP (VoIP). Thus, utility companies can further reduce their monthly recurring telco charges by eliminating the voice line at remote, unmanned substations.

So the traditional SCADA leased line network would now look something like this.



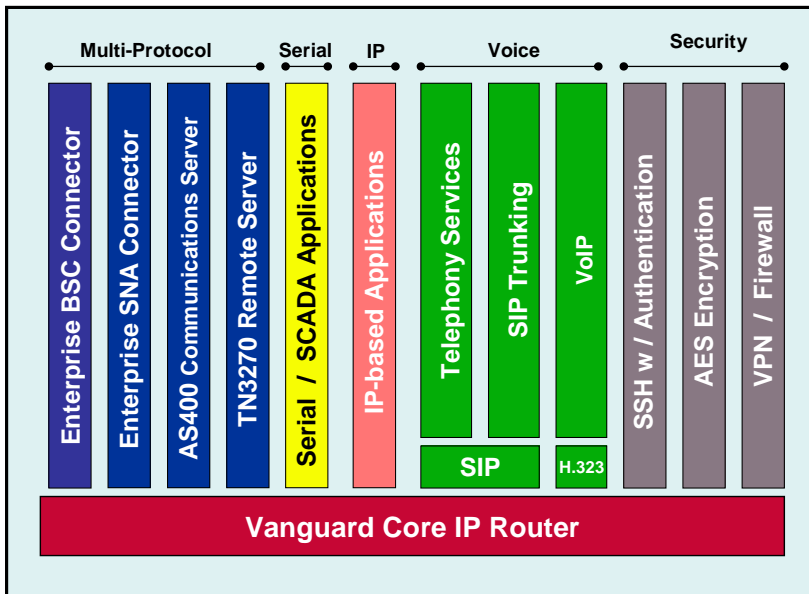
SCADA technology has evolved over the past 30 years as a method of monitoring and controlling large processes. SCADA processes cover areas that may be thousands of square miles, and may be hundreds, or thousands, of miles long. Traditional leased line networks no longer fit that model, either from a performance or a financial perspective.

One of key processes of SCADA is the ability to monitor an entire system in real time. The new network paradigm takes advantage of the lower cost of high bandwidth to deliver additional performance that supports more data elements, or points, in the network, and as an added benefit, also carries the voice traffic for free!

But what if you have an IP data network already in place? No problem, Vanguard gateways can be integrated into existing IP data networks to support any SCADA process that may not be IP-friendly, or compatible. So, whatever your SCADA environment is, Vanguard Networks has a solution for you. Vanguard Networks has provided these types of network solutions for a wide range of Utilities around the world, from Electric Power Distribution Systems to Water Management Systems...with as few as twenty five or thirty remote sites, to as many several hundred!

The Vanguard Router Platform

The Vanguard base platform is a full-function IP WAN router, not just a limited capability protocol converter. SCADA/Serial is just one of the business-specific applications in the Vanguard ApplicationsWare™ software suite which runs on the Vanguard IP router platform. Other network vendors' solutions suggest that you should displace all Non-IP systems and applications with IP-based infrastructure to then implement their network solution. That would be equivalent to requiring replacement of existing cost-effective and performing infrastructure solely to accommodate new "plumbing", which is contradictive to a company business and fiscal strategy.



In addition to enabling connectivity to today's most advanced IP network technologies such as MPLS, broadband and wireless, the Vanguard Networks solution supports all of your IP-based applications while simultaneously driving Non-IP (BSC, SNA, SDLC), AS400 (i-Series) Communications, Serial data, SCADA applications, and SIP Telephony Voice Services across a "single network".

SCADA/Serial is one of the many applications offered in the ApplicationsWare suite that operate on the Vanguard IP Router base platform. All applications can be run across a single wide area network environment.

Networking Solutions from Vanguard

Vanguard Networks provides converged network solutions deploying emerging transformation technologies to integrate voice, data, and video over a single network combining the latest architectures such as MPLS, Broadband VPN, and SIP Trunking to take advantage of the tremendous cost savings and value added services offered today. The Vanguard advantage enables non-IP SNA, SCADA, and serial data and voice access into these heretofore IP-only networks as an element of the IP convergence solution.

Services

System Support

Vanguard Networks support services range from web-based services that provide access to our knowledge base, diagnostic tools, software and system fixes – to extensive remote and on-site expertise, combined to solve customer problems expeditiously.

The Vanguard Networks Customer Service Center is a single point of access to multiple levels of resources where problems are escalated appropriately to the most efficient skill set to handle each problem. Whether your network problem requires investigation by a software specialist or 4-hour on-site parts delivery, everything is coordinated from that first call.

Network Implementation

For over three decades, Vanguard Networks has helped thousands of customers implement successful cost effective networks. We have seamlessly managed over one hundred daily network installations, all without impacting revenue-generating core business objectives. When you've got critical time scales for deployment, count on Vanguard Networks.

With our best in class network implementation services, you'll get a team of experienced professionals to integrate your network from start to finish. You'll retain ultimate network control, while benefiting from the knowledge and support of our specialists.

For more information email Sales@VanguardNetworks.com.

www.vanguardnetworks.com

**Vanguard Networks
25 Forbes Boulevard
Foxboro, MA 02035
+1-508-964-6200**