



Energy

SOLUTION BRIEF

Solution Highlights

- Modern digital IP circuit communications upgrade for utility and oil and gas companies
- Turnkey solution that includes project management, comprehensive team expertise, innovative networking technology, factory-preconfigured equipment, seamless cutovers, and the latest in security
- Comprehensive end-to-end services, including assessment and design, procurement and configuration, and installation and commissioning
- Customizable options available for unique implementations



The Fast-Track Communications Upgrade Solution from Schneider Electric and Cisco

Today's energy companies—including those in the utilities and oil and gas industries—have an imperative need to modernize and upgrade their communications equipment. These organizations have older analog copper-based systems which, due to their age and outdated nature, can impede communication to critical facilities such as electric substations, transmission and distribution (T&D) substations, gas stations, and other installations.

Many of these organizations are already addressing this today or have a plan to begin soon, as they are aware that carriers are retiring older analog-based systems. These circuits are not only difficult or impossible to troubleshoot and maintain, but they can also break down easily and interrupt critical communications. Consequently, support for these older technologies is almost becoming cost prohibitive.

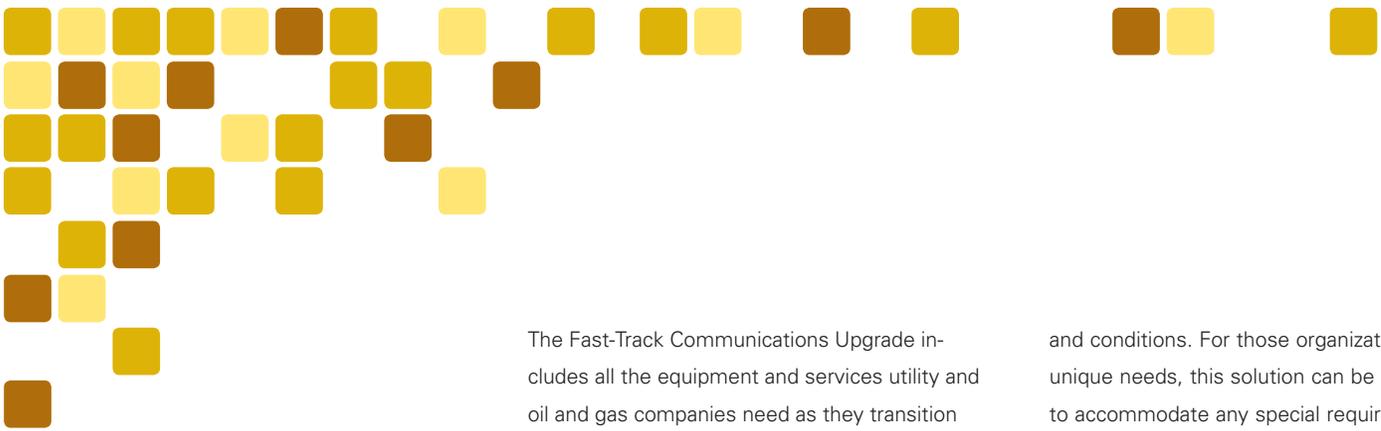
The logical choice is for utilities and oil and gas companies to upgrade their systems to modern digital IP circuits. Schneider Electric and Cisco have teamed up to make this an easy, affordable move.

Solution Overview

The Fast-Track Communications Upgrade from Schneider Electric and Cisco is an end-of-life packaged communications circuits program for companies in energy-related industries.

This turn-key solution leverages the combined strengths of Schneider Electric and Cisco in everything from supervisory control and data acquisition (SCADA) systems to station automation gateways (such as remote terminal units and intelligent electronic devices). The solution also includes communications networks, equipment, design, and field services.





The Fast-Track Communications Upgrade includes all the equipment and services utility and oil and gas companies need as they transition from older analog systems to a modern digital IP circuit and control plane, including:

- **Comprehensive management and oversight.** This solution includes program management and oversight of any team personnel and required subcontractors. Project managers and appropriate team members are assigned to customers from the initial phase of assessment and design, as well as for procurement and configuration, and through to installation and commissioning.
- **Innovative networking technology.** A Fast-Track upgrade includes network design and specification for the desired communications system. It also comes with the latest networking and communications devices, which ensures that connectivity is modern, reliable, and secure. And it comes with the required performance to efficiently run today and tomorrow's substation applications.
- **Factory-preconfigured communication equipment.** The complete solution—including equipment, panels, and racks—is pre-assembled where possible to minimize onsite installation and configuration time inside the station control house or center.
- **Uninterrupted, seamless cutovers.** A Fast-Track upgrade includes all necessary equipment, labor, and tools to allow for efficient deployment and commissioning of new digital circuits without disruption to a facility's operations. New circuits are set up in parallel with existing analog circuits and fully tested prior to the system's cutover.
- **Customizable options.** Within the Fast-Track upgrade program, there are packaged standard scenarios and architectures which meet most requirements

and conditions. For those organizations with unique needs, this solution can be modified to accommodate any special requirements. Field technicians work on site in conjunction with energy company teams, preferred local contractors, and other experts to install the solution and conduct point-to-point SCADA system testing on the new digital circuits.

- **Cybersecurity.** This upgrade package also includes the latest in security equipment to ensure the highest level of cybersecurity protection.

The combined value of Schneider Electric and Cisco provides a proven process and architecture that energy companies can leverage to reduce the complexity of typical Time-Division Multiplexing (TDM) installations. The program provides companies with an accurate understanding of the system-wide project magnitude and costs up front, with efficient deployment repeatability, minimized starts and stops, and cost-effective equipment purchases.

Solution Approach

For most implementations of a communications upgrade, there is a three-phased approach, which includes:

1. **Assess and design:** Any upgrade program starts with a comprehensive site survey and review of station "as-built" drawings with on-site job walks. Following this, project managers develop a remediation plan, which details project costs and provides a roadmap that is designed to minimize the operational impacts of the cutover. These plans are reviewed with customer representatives as part of project planning. Based on a validated and approved plan, a joint engineering team from Schneider Electric and Cisco develops a detailed design for communications circuits, materials, SCADA systems, and field services.

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2. **Procure and configure:** Upon approval of the designs, the appropriate team members procure, assemble, and configure the solution at the factory when possible. Once the factory testing is completed, the upgrade solution is shipped to the customer site.
 3. **Install and commission:** When the solution is delivered to the site, the commissioning experts on the team install the solution and migrate existing legacy and packet base services to the new circuits. The team re-addresses all telemetry inputs and outputs, and then conducts performance checks and point-to-point and application testing. “As-built” drawings of the modified system are delivered to the customer for future maintenance following the on-site completion of the installation and commissioning.

This process is applicable to most T&D and gas stations, regardless of their topologies, existing communication services, or SCADA provider. A site survey is recommended for proper project planning and optimized service mitigation prior to the launch of any upgrade program.

Upgrade Options

Here are two examples of what a typical Fast-Track Communications Upgrade would look like. The options are dependent on whether an organization prefers to continue support for some of its legacy services or undertake a complete migration.

Option 1: Adapt an Existing Solution

This approach of the Fast-Track Communications Upgrade program includes:

- Continued support for legacy devices
- Legacy or packet adaptation services
- Footprint minimization
- A Cisco IP control plane
- Enhanced network administration tools
- Connectivity upgrade

This option can also be adapted to stations with existing T1 channel banks or dynamically shared object gateways.

Option 2: Replace an Existing Solution

This option includes all the benefits of the above one, plus:

- End-point IP connectivity
- Service virtualization
- Advanced security features of IP control plane
- Network administration and management

Conclusion

The combined industry-leading expertise and technologies of Schneider Electric and Cisco provide a cost-effective, innovative solution for upgrading the communications systems of energy companies.

The Fast-Track Communications Upgrade program provides an efficient way to modernize communications systems and replace outdated analog ones with digital IP systems. These upgraded solutions help utility and oil and gas companies prepare for the future with the most innovative digital circuit control plane solutions available today.