Proven, Efficient, Forward-Thinking Network Solutions

Communications demands on network infrastructure are constantly growing and evolving, and the ability to send and receive large amounts of information quickly and reliably is critical for missions and operations success. To address and prepare for changing agency communications needs, the effective design and installation of telecommunications infrastructure is required to optimize network environments for efficient and effective operations and provide a stable foundation for continued network growth.

For nearly 20 years, LGS Innovations and its legacy companies have provided advanced network infrastructure and installation services in support of our customers’ missions around the world. With proven successes in internetworking testing with legacy systems, procurement and installation, overall program management and solution development and technology design, the depth and breadth of LGS Innovations’ infrastructure and installation services expertise encompasses the entire networking lifecycle. Services include site preparation, testing, engineering, relocation and refurbishment, training and maintenance, and logistical services.
Creating an Efficient Infrastructure To Maximize Resources

Whether a network requires a complete infrastructure overhaul or a selective refresh, LGS Innovations provides turnkey customer solutions that fit each unique current and projected network need – as well as budget requirements. This enables a more efficient use of the often limited resources devoted to telecommunications.

To determine the most appropriate and effective path to communications modernization, LGS Innovations establishes a verified picture of the network infrastructure and creates a superior context for planning for future needs, designing and/or implementing a communications support infrastructure with a life expectancy of greater than 20 years. Frequently, simply incorporating newer cabling, maintenance holes, underground ducting, proper grounding, and conditioned power into the existing network infrastructure, the life of the equipment is extended and overall maintenance costs are reduced. Because communications reliability is increased, incidents such as a fiber cut or other catastrophic communications failures are quickly resolved or avoided altogether, saving the customer the broad scope of costs associated with downtime and crisis response.

Targeted Network Infrastructure Enhancement: from Gap Analysis to Design

The Pre-Planned Product Improvement (P3I) strategy of the U.S. Federal Government targets agency spending to upgrade key components of a network to accommodate improvement and modernization efforts as well as future quality upgrades, while keeping costs down. In support of this strategy, LGS Innovations applies a strong legacy of networking and communications expertise to provide our customers with an infrastructure gap analysis that identifies areas of deficiencies in existing infrastructure, and outlines the steps required to grow, upgrade, and enhance the network backbone to meet future communications needs. This infrastructure work includes both outside plant infrastructure and data networking products and services.

To optimize network infrastructure, LGS Innovations evaluates the condition of the outside plant telecommunications cabling infrastructure, evaluates the condition of the on-site telecommunications cable plant, and provides specifications for provisioning redundant services. These services can be provided via diverse on-site routes for campus and internal telecommunications, and can be used with commercial providers to extend long-haul telecommunications infrastructure to external, off campus, or multi-site networks.

Enhancing Telecommunications Infrastructure – U.S. Department of Justice

The U.S. Department of Justice Executive Office for United States Attorneys (DoJ EOUSA) Telecommunications and Technology Development selected LGS Innovations to implement a nationwide, enterprise-wide Voice over Internet Protocol (EVoIP) solution. EVoIP upgraded DoJ EOUSA’s existing traditional telephone systems to VoIP services, utilizing its nationwide IP transport network to provide VoIP services and features to field offices across the country.

LGS Innovations provided services including program management, system architecture and design, network requirements and analysis, installation and engineering, site surveys, dial plans, routing plans, user training plans, messaging, conferencing, call centers, EMS, configuration management, sparing, circuit grooming and telco facility optimization, support staff for tiers 1-2-3 support, and network management and provisioning. The LGS Innovations team also supports network planning and optimization to ensure use of the most cost effective network connectivity solutions.

Global Network Infrastructure and Installation

LGS Innovations has extensive experience successfully deploying and sustaining large information infrastructures in diverse government agency installations located outside the continental United States (OCONUS). For nearly two decades, the company has performed many complex projects for the U.S. Army and U.S. Air Force throughout Europe, and over the past five years successfully implemented multiple communications projects
LGS Innovations is the prime contractor for multiple Installation Information Infrastructure Modernization Program (I3MP) upgrades for the U.S. Army in Germany and Belgium. I3MP is a collection of voice, data, cable, long-distance gateway and enterprise management services to modernize the core enterprise information infrastructure at U.S. Army installations worldwide. The scope of the contract includes the seamless integration of voice, data, inside/outside cable plant and/or transmission products and services into a single integrated communications system. LGS Innovations has also delivered information transport services projects for the Air Force in Germany, and optical transport network deployments for DISA/Army Projects throughout the European theater.

Additional past OCONUS infrastructure and installation engagements include a turn-key I3MP technology refresh that provided data services to more than 3,000 users covering an area of approximately 1,800 acres on-base in Japan; laying more than 2,100 kilometers of fiber optic cable to interconnect 15 key U.S. Army communication centers in Germany; and providing key communications infrastructure improvements that support the warfighter on missions in Afghanistan.

**DISA European Optical Transport Network**

For more than 20 years, LGS Innovations and its legacy companies have carried out successful projects for the U.S. Army and U.S. Air Force throughout Europe, including the deployment of a DWDM-OTN communications system across multiple locations in Germany for the Defense Information Systems Agency (DISA) and the U.S. Army.

LGS Innovations was tasked with the installation of three Dense Wavelength Division Multiplexing (DWDM) rings spanning some 2,100 kilometers and interconnecting 15 installations; a Multi-Protocol Label Switching (MPLS) transport solution to complement the rings; and an access IP Gateway solution at fourteen locations in support of the U.S. Army’s service delivery point requirements throughout Germany.

The complete design links the communications networks of the U.S. Army bases for centralized network management and provisioning of services, as well as end-to-end Quality of Service over the IP/MPLS network. Fully redundant optical circuits, dual redundant network management capability, diversified (multiple choice) routing between data switches, and backup systems support full network Continuity of Operations (COOP) in case of a problem.

**Iraqi Republic Railroad Digital Microwave Radio Communications Network**

When the Iraqi Republic Railroad (IRR) needed a dedicated communications system, LGS Innovations was tasked with providing a Digital Microwave Radio Communications Network (DMRCN) that spanned 1,200 miles and consisted of microwave radio base stations, 33 transmission towers across the country, telecommunications equipment shelters, Very High Frequency (VHF) Radio Voice Services, UHF Data services, and Wi-Fi services. The project was developed by the Joint Contracting Command–Iraq (JCCI) under the Iraq Reconstruction Management Office (IRMO), and then sourced via open competition through the Department of Transportation–Volpe Center and awarded to Prime Contractor Mafeks International, LLC. LGS Innovations delivered engineering, supply, installation, testing, and operations and management services in support of the contracts.

The LGS Innovations team implemented a synchronized implementation scheduling and resource management process to simultaneously execute site surveys, requirements engineering, ordering, material management, site preparation and installation, testing, and acceptance activities. Thus, LGS Innovations successfully optimized productivity and minimized labor costs at the 33 sites and stations across Iraq.

"LGS Innovations had the technical expertise and dedication to service that was required to successfully complete this highly complex project under difficult and sometimes dangerous conditions. LGS was always responsive and found innovative ways to mitigate potential problems and risks."

– JIM LAMOND, RAIL AND TRANSIT SYSTEMS DIVISION

**Infrastructure Modernization (IMOD) Networking Transformation Partner**

LGS Innovations is a prime supplier for the U.S. Army’s Program Executive Office Enterprise Information System’s (PEO EIS) Infrastructure Modernization (IMOD) contract that facilitates fiber-optic cable and wireless communications deployments to U.S. Army bases and installations around the world. IMOD helps enable the transformation and modernization of military communications from traditional circuit switch voice technology to a single, integrated, Internet protocol (IP)-based, multi-media communications system.

Providing Engineer, Furnish, Install, Secure, and Test (EFIS&T) services in support of a converged I3MP multi-vendor infrastructure at selected U.S. Army installations, LGS Innovations is committed to delivering best-in-class solutions in a turnkey package to the U.S. Army and other Defense Department teams. LGS Innovations’ engineers deliver high performance networks utilizing the best technology available, and can also support the seamless integration of the military’s existing network infrastructure.

For the U.S. Federal Government and coalition forces throughout Southwest Asia (Iraq, Kuwait, and Afghanistan), Projects include elements of infrastructure, data networks, VoIP, VTC, and transmission systems.

LGS Innovations was tasked with providing a turn-key I3MP technology refresh that provided data services to more than 3,000 users covering an area of approximately 1,800 acres on-base in Japan; laying more than 2,100 kilometers of fiber optic cable to interconnect 15 key U.S. Army communication centers in Germany; and providing key communications infrastructure improvements that support the warfighter on missions in Afghanistan.

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Iraq Air Base Information Technology Infrastructure Project (I3P)

Serving as a subcontractor to THE CEN-TECH GROUP, Inc. on the Air Force Network-Centric Solutions (NETCENTS) Contract, LGS Innovations provided site survey, design, engineering, procurement, installation, integration, and training support to the Iraqi Air Force under the Iraq Air Base I3P since September 2008.

The I3P provides the Iraqi Air Force with C4I capabilities at the Iraq Operations Center (I-AOC) and other key airbases across Iraq. LGS Innovations provided command and control facilities along with voice, data and video capabilities under the project, completed in September 2010.

Digital Switched Systems Modernization Program (DSSMP)

DSSMP provides advanced, integrated voice, video, and data telecommunications systems and services to military and civilian government customers worldwide. LGS Innovations implemented a technology refreshment and turnkey customer solution that included engineering, integration, site preparation, installation, and system cutover, as well as state-of-the-art commercial off the shelf (COTS) equipment. The LGS Innovations team also provided integrated logistics support services including training, supply chain functions, shipping and transportation, de-installation, and removal and shipping of displaced equipment.

LGS Innovations was awarded 67 delivery orders on the DSSMP contract, which included the program management, engineering, furnishing, installation, securing, and testing (EFIS&T) of an optical transport network at Ft. Campbell, Kentucky, as well as an upgrade under the Installation Information Infrastructure Modernization Program (I3MP) for Dense Wave Division Multiplexing (DWDM), Synchronous Optical Networking (SONET), Data Switching, and Voice over Internet Protocol (VoIP).

Southwest Asia Commercialization Support BPA

Through the Southwest Asia Commercialized Support BPA, LGS Innovations provided commercialized LAN/CAN capabilities to fulfill the warfighters’ infrastructure requirements; evolved the tactical IT infrastructure deployed in theater (specifically the core, distribution, and access capabilities); and modernized installation information infrastructure through the application, design, and deployment of the relevant standards to ensure the availability, reliability, resilience, and security of the Defense Communications Voice, Data & Transmission Systems. LGS Innovations also provided EFIS&T support of the Bagram Airfield Fiber Ring and OSP network infrastructure, including maintenance hole, conduit, and fiber for future use.

Network Infrastructure and Cloud Migration

As more network environments move toward Cloud-based, virtualized, and consolidated solutions, communications networks must evolve to adapt to increased pressures, demand for high quality of service (QoS), and levels of network stress. Although increasing services and capabilities of government networks to address higher user demands is imperative, so is controlling budget and network impact.

Network infrastructure analysis and site survey services from LGS Innovations provide the ability to proactively plan for network needs and deliver savings in implementation and operation, as well as ensuring that network and communication infrastructure planning meets future demands. LGS Innovations helps agencies and businesses proactively prepare for and execute a directed spending plan that protects our customers from the inefficiencies associated with engaging resources to respond to network failures.

“BEFORE MIGRATING TO THE CLOUD, AGENCIES MUST ENSURE THAT THE NETWORK INFRASTRUCTURE CAN SUPPORT THE DEMAND FOR HIGHER BANDWIDTH”

– FEDERAL CLOUD COMPUTING STRATEGY

LGS Innovations: Delivering an Information Advantage to the U.S. Federal Government

LGS Innovations engineers have proven skill sets across the network infrastructure and installation disciplines, from outside plant and inside plant work to technical data analysis, logistics, program management, and operations and maintenance. Through modernized, efficient, and cost-effective network infrastructure solutions that improve communications, LGS Innovations offers our customers an information advantage that contributes to mission success.
LGS Innovations delivers mission-critical communications products, R&D, and supporting services to U.S. defense, intelligence, and civilian agencies, state and local governments, critical infrastructure operators, and commercial customers around the world. We create advanced solutions in wireless communications, signals processing and analysis, optical networking, photonics, routing and switching, and spectrum management.

These solutions drive mission success in Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), cyberspace operations, and network assurance. By incorporating best-in-class commercial and custom technologies with a full suite of offerings in research and development, engineering, integration, and product applications, our solutions improve efficiency, reduce costs, and provide an information advantage to our customers.

LGS has a history and culture of innovation, and maintains strong ties to our Bell Labs legacy of inventive development. Our intellectual curiosity keeps us on the cutting edge of technology and leverages our 75-year history of creating next-generation communications solutions to support critical operations.

LGS Innovations is a U.S.-owned company headquartered in Herndon, Virginia, with offices across the U.S. and overseas. We employ more than 1,000 associates around the world, including 750 scientists and engineers. Do you have a passion for innovation? So do we. Learn more at www.lgsinnovations.com.