



Engineering Services

NovaTech provides a full range of engineering services, including:

- [Electric Utility Services](#)
- [Process Engineering Services](#)
- [System Life Planning](#)
- [System Assessment Services](#)
- [Strategic Automation Planning](#)
- [Network Engineering](#)

- [Applications Engineering](#)
- [Hardware Engineering](#)
- [Systems Engineering](#)
- [Enterprise Software Integration](#)
- [Power and Grounding](#)
- [Additional Services](#)

Engineering Services are available for individual projects or as part of a [Facets](#) annual support contract.

Electric Utility Engineering Services

NovaTech's Utility headquarters in Lenexa, KS, offers panel engineering, [Orion](#) configuration, substation automation system design, HMI and small SCADA configuration (for [NovaView Plus](#) or other third-party HMI), and on-site commissioning support.

Process Engineering Services

The [D/3® Distributed Control System](#) (DCS) debuted in 1982 (watch the [25th Anniversary of D/3](#) video) with a unique architecture that combined sequential and batch process control into a complete process automation system. Since then, NovaTech Process Solutions engineers have gained experience in the [chemical](#), [brewing](#), [pharmaceutical](#), [food and beverage](#), [ethanol](#), nuclear materials handling, [metals](#) and other industries to solve countless operational and competitive challenges. Engineering Services can help you increase the quality, flexibility and reliability of your operations with open-architecture solutions that make maximum use of existing hardware and infrastructure and negligible impact on uptime.

Reliability-Centered System Life Planning [back to top](#)

[Reliability-Centered System Life Planning \(RC-SLP\)](#) optimizes upgrade and maintenance programs to replace components just as their predicted operational life is ending. RC-SLP starts with a comprehensive study of all your system components including field devices, networks, and computer systems. The Mean-Time Between Failure (MTBF) of each of these components is cataloged, fatigue and damage noted, and a predictive maintenance schedule laid out. This ensures that all components are replaced as their operational value is maximized and before they become liabilities.

Reliability-Centered System Assessment Services

Reliability Centered System Assessment Service (RC-SAS) extends the operational life and efficiency of any process control system by isolating and correcting risk factors to the longevity of system components. NovaTech engineers thoroughly examine all I/O and cabling and evaluate power quality, grounding practices, process and enterprise network architectures, and general plant practices for any existing and potential risk factors to equipment life. Once identified, chronic conditions can be corrected and faulty equipment replaced.

Control Systems Serviced: [back to top](#)

- DeltaV
- Allen-Bradley
- Siemens
- Provox
- Honeywell TDC 2000, TDC 3000
- Foxboro
- Modicon
- EMC Controls/Rexnord/TI PAS/GSE Systems/NovaTech D/2 and D/3 DCS
- MTL
- And others. Please consult your Account Executive for applicability.

Strategic Automation Planning

Every industry is under constant pressure to reduce waste, improve margins, increase profits, and comply with regulations. But where should you invest your limited resources for maximum return? NovaTech analysts aren't tied to any particular brand of valve, PLC, transmitter, or other Intelligent Electronic Device (IED), and therefore can evaluate your facility's opportunities and liabilities more objectively than other DCS vendors. Findings are presented as both a detailed technical analysis and as a high-level, executive summary, complete with recommended actions and projected return on investments.

Network Engineering[back to top](#)

Whether building a new network or troubleshooting or expanding an existing one, NovaTech offers a full range of analysis, design, testing, and installation services aimed at keeping your enterprise's digital backbone functioning at optimal levels. NovaTech's core competency in protocol emulation - the creation of flawless interfaces between disparate proprietary devices and networks - allows us to interface with standard, legacy, and proprietary networks and devices. As a result, our customers can continue using a greater percentage of their existing hardware and network infrastructure during an upgrade. Network Engineering brings legacy SCADA networks and islands of automation into state-of-the-art, truly open architecture solutions.

Applications Engineering

Applications Engineering combines decades of industry-specific knowledge with expert understanding of the capabilities of the D/3® and other Distributed Control Systems (DCSs). NovaTech Applications Engineers (AEs) have been designing and upgrading DCSs since 1975, and have helped customers re-engineer their manufacturing processes innumerable times over the years, gaining insight and refining their processes with every job. These chemical, electric, mechanical, and software engineers each have more than twenty years of experience in their respective disciplines, and several are former customers.

Sample batch and continuous application experience:

- Multi-Stream and Multi-Batch Chemical Processes
- Process Simulation
- Boiler Control
- Radioactive Waste Processing and Monitoring
- Steel Continuous Casting
- ISA SP88 Flexible Batch Applications
- Multi-Component Distillation
- Fermentation (Brewing and Biochemical)
- Waste Water Processing
- Extrusion
- Oil Seed Extraction
- Sterilization
- Corn Milling
- Brewing
- Ethanol Production ([read our article in Ethanol Producer magazine.](#))
- Pharmaceutical Applications

Hardware Engineering[back to top](#)

Skilled NovaTech designers and electrical engineers can design, test, validate, and install custom hardware for any application. While we believe our products to be the finest available, customers have complete freedom when specifying components.

Example Hardware Engineering Services:

- Custom board and cabinet design, construction and testing
- Total integration services for Modicon (200, 800 & Quantum), Allen-Bradley (1771 & Flex), Siemens (Simatic 505 and S7-300) and D/3 (Series 16000 and 8000) I/O
- Custom I/O panel implementation, Nema (1, 12, 4 and 4x), purged systems and intrinsically safe designs
- Custom termination panel designs and implementation, enhanced CableFast and QuickBloc

Systems Engineering

The [D/3® DCS](#) is significantly more customizable than other process automation systems. NovaTech Systems Engineers (SEs) help customers take full advantage of these capabilities and develop new features for specialized applications. SEs can also quickly transfer any software applications developed on older versions of the D/3 into a new D/3 system during an upgrade.

Enterprise Software Integration

The [D/3® DCS](#) integrates with ERP and third-party software systems in a vertical communications hierarchy. System architectures extend from the lowest levels of control to the highest levels of plant and corporate organizations, for true enterprise-wide information usage.

Power and Grounding Services

Poor power quality (surges, sags, power failures, transients, harmonic distortion, conducted radio frequency energy, chronic high or low line voltages, poor frequency regulation) and inadequate grounding (ground resistance too high, ground leads too long, ground loops between grounding systems, excessive common mode voltages, electrical noise on grounding systems) can affect your production equipment and the digital systems tied to them, leading to data corruption and computer crashes. NovaTech's Power & Grounding Service begins with a site survey and thorough analysis of your power and grounding systems. We document our findings, design and recommend countermeasures, manage their installation and test their effectiveness.

Additional Engineering Services[back to top](#)

- Graphics Development
- System Validation & Commissioning
- System Maintenance
- Project Management
- Cable testing services
- I/O troubleshooting services
- Industrial data communication systems
- Security