
OIL, GAS AND CHEMICALS

Connecting telecommunications safely, economically and without risk



ABB is a leading supplier of customized, reliable and cost-efficient telecommunications and security systems for turnkey or standalone offshore, onshore or pipeline projects. As a single source telecommunications provider, ABB strives to reduce costs while keeping projects on schedule. Here's how...

Seamless telecommunications in a digital era

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Who we are

Supplier of standalone to turnkey solutions

Multi-scope capabilities

ABB has pioneered, and is the only company offering, total integration of electrical, automation, safety, control, instrumentation and telecommunication systems for upstream, midstream and downstream industries.

Whether for onshore, offshore, LNG or pipeline projects, this empowers operators with a single point of access and common operator environment for all control, communication and security tasks.

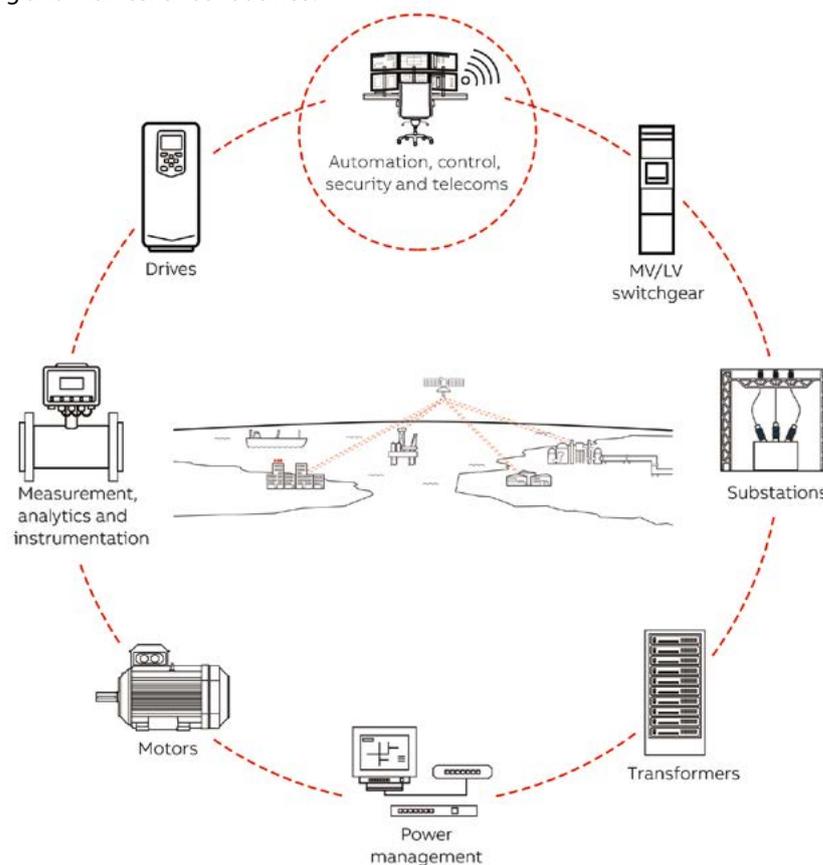
Single source telecommunications provider

ABB is a highly qualified telecommunications systems integrator, with over 30 years' experience and global capabilities in turnkey projects for the oil, gas and chemical industry. Our expertise means we can seamlessly integrate telecommunication systems within a holistic electrical, automation and communication infrastructure, using common interfaces, operating and maintenance routines.

Furthermore, our well-proven systems are continually optimized and refined through decades of experience.

Benefits

- Control of capital and operating costs
 - Change costs minimized through document libraries, etc.
- Reduced risk
- On-time project schedules
- Consistent quality and reliability
- Turnkey delivery
- Uniform operation and user interface
- All information accessible from a single point of access
- Automated actions, messages and event logging
- Transmitting equipment removed from operator desk



— ABB's integrated solutions cover separate bid packages and will deliver the most efficient equipment combination together with single-source accountability.

What we know

Connecting digital technologies

Today's oil, gas or chemical facility depends on the functionality and reliability of information, telecommunication and security systems to operate safely and efficiently.

ABB Ability™ solutions bring these technologies together and provide a safe and secure digital infrastructure connecting power, automation, telecommunications and security systems. This digital framework helps companies manage the complexities of today's industrial technology.

Collaborative operations

ABB Ability combines big data analytics and communications technology to realize the potential of the industrial internet of things. In such a system, large amounts of data are consolidated to manageable levels. This information is then presented to the right people in an intuitive way so they can make decisions based on the data. Industrial communications technology is also used in order to enable remote operations personnel and devices to effectively and securely communicate with remote control rooms and experts, and central systems.

Cyber security

Safety and reliability are given the highest priority in all of our products, systems and services. Cyber security, which is a key aspect of these efforts, is not viewed as a one-time activity. Instead, it is an integral and continuous part of the product life cycle, from early design and

development, through testing and commissioning, to life time support and future adaptations.

ABB Ability products and services ensure that all industrial systems are operated according to best practices, based on international standards and ABB experience.

Operational safety

ABB Ability solutions enable operations and maintenance teams to plan for and take corrective action toward maintaining the health of any safety barriers. They improve the transparency of current operating risk, thus keeping facilities safe, reducing demands on safety systems and improving production uptime by maintaining the focus on early barriers.

ABB Ability technology also allows effective communications between operations and maintenance and remote control rooms and experts, thereby increasing operational safety and security.

Wireless technologies

ABB offers broadband wireless communications, point-to-point/point-to-multipoint, narrowband mesh and cellular. These solutions can be scaled to build broadband wireless networks optimized for each situation, thereby securely increasing operational efficiency and safety on one cost-effective physical infrastructure.



What we do

Single point telecommunications provider

Working with the best technology

ABB supplements its telecommunications products with proven third-party equipment to provide an integrated communications system. Projects benefit from ABB's long-standing relationships with all leading telecommunication equipment suppliers and the company's freedom to select the best technologies for specific projects.

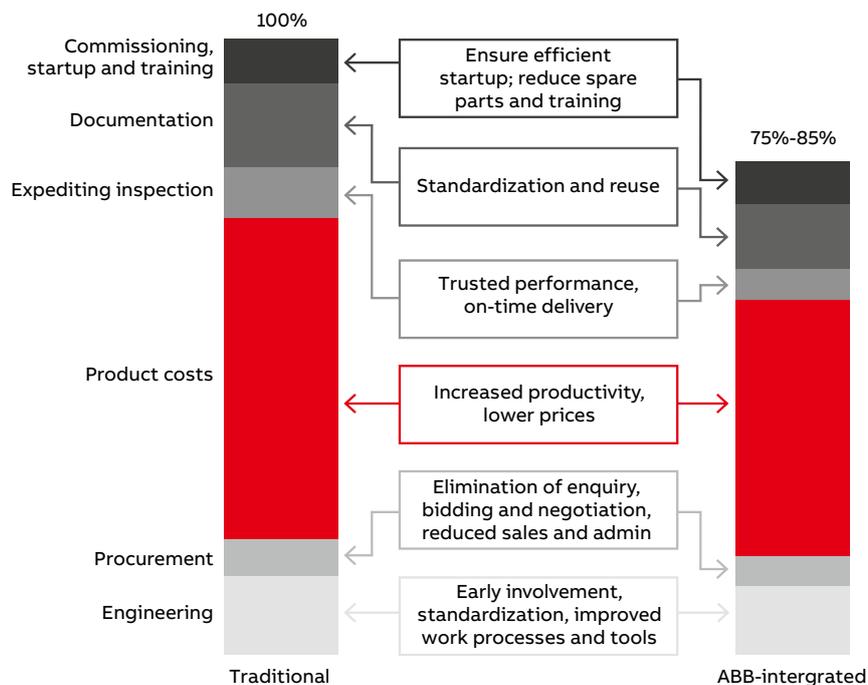
Each project is assessed to ensure that every life cycle stage is catered for in terms of performance, future integration needs and likely changes to the facility. As such, ABB sources the best equipment available, selected according to the technical and commercial requirements of each project.

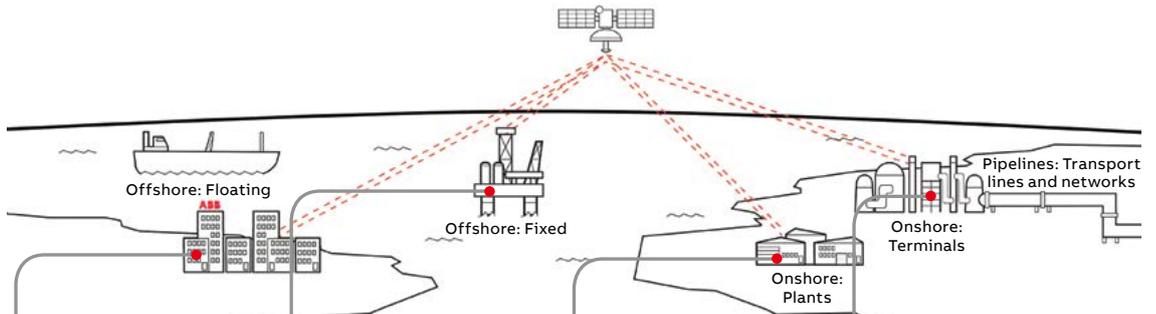
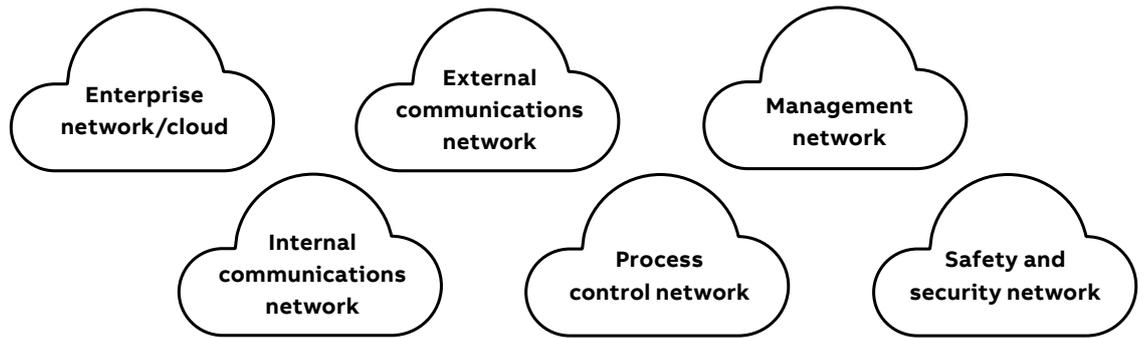
Furthermore, collaboration between ABB's own automation, safety and electrical engineers and all of its vendors results in the migration of ideas and technologies that help future-proof your installation.

Benefits

- Equipment optimization
 - Correct sizing and topology of systems
 - Optimized equipment selection: standard communications, reduced footprint

—
Cost savings of 15% to 25% attainable via ABB's integrated approach, "win-win-win" at a lump-sum-turnkey project.





— ABB is the only major automation player to design telecommunication systems that keep people, assets and data securely monitored at the same time as optimizing automation and power requirements.



How we do it

Bringing everything together

Single source provider

Using ABB as a single source system integrator to bring complex and remote systems and sub-systems on line avoids risks associated with managing multiple suppliers, such as fragmented responsibilities, complications, delays and cost overruns.

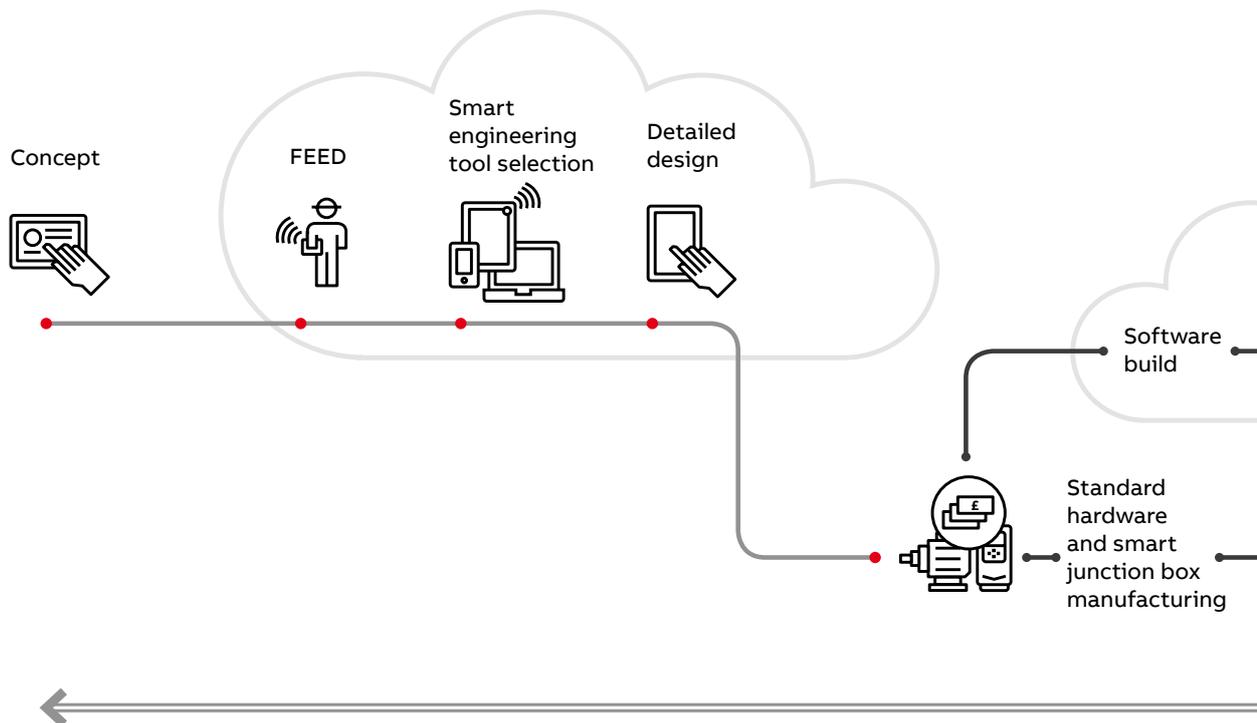
As a single source supplier, ABB bears the cost and risk of interfacing with the various disciplines and sub-suppliers.

The project team

With oil, gas and chemical centers located in more than 40 countries, ABB has over 4,500 dedicated industry engineers and project managers worldwide.

At the start of any project, ABB appoints a centralized team, with clear responsibilities covering areas such as engineering, integration, quality assurance, logistics and system supply. With this team in place, the number of interfaces and potential sources of error are reduced.

The team identifies common ways of working, develops technology and creates a powerful system architecture that integrates all plant telecommunications into a total OPC-based automation, telecommunications and security solution.



— The project execution model brings 20-30% lower capex and opex, 25% quicker schedule completion than traditional approaches and 40% fewer start-up and installation hours.

Total project management

Together with a total project management philosophy, ABB can engineer telecommunications and security systems that are seamlessly integrated, while meeting the needs of all interfacing contractors from all facilities within the project.

Having total project management and engineering within ABB's control helps reduce the risk to the EPC of potential cost and schedule overruns.

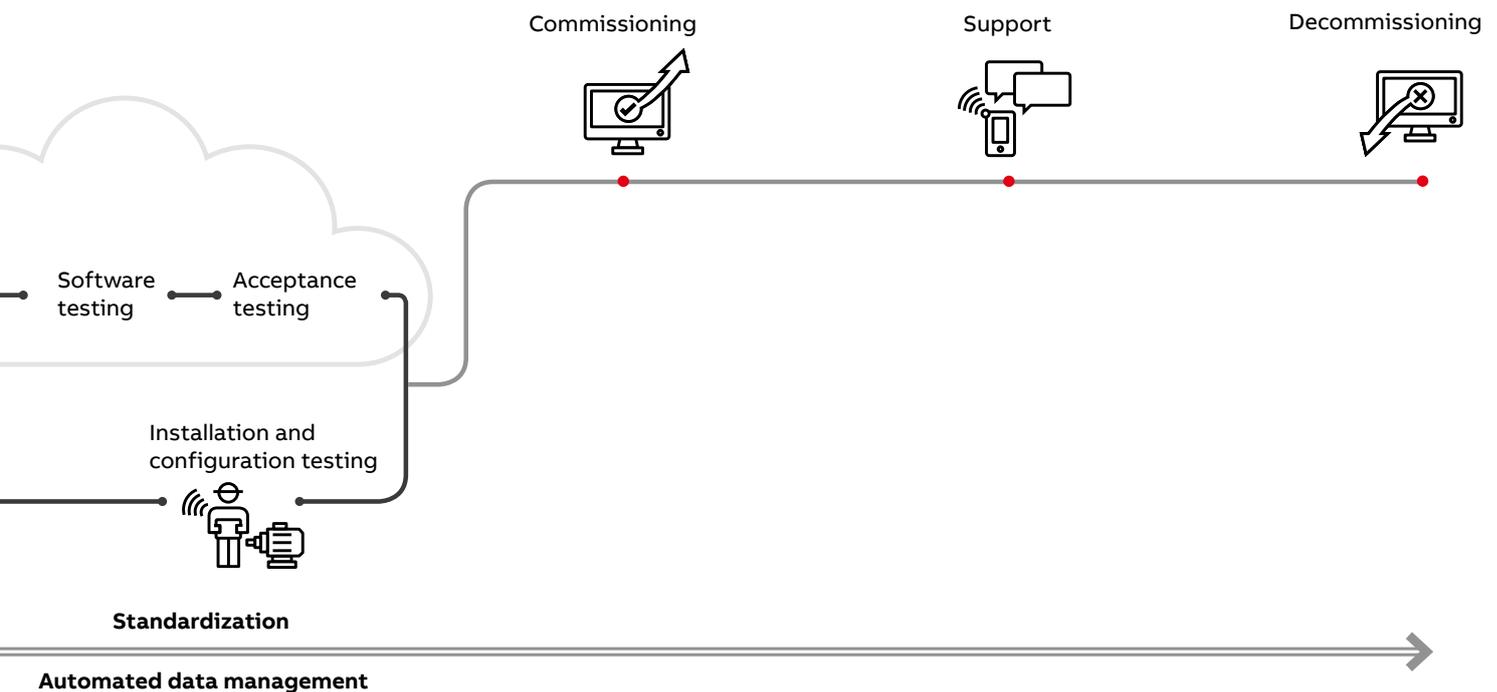
Project execution

ABB's new project execution model (see figure below) lies at the heart of a telecommunications installation. From the initial front end engineering and design (FEED) through to decommissioning, ABB protects your telecommunications investments every step of the way. The new project execution model identifies that certain tasks can be carried out in parallel, rather than being a costly bottleneck that unnecessarily delays a project.

Knowledge and experience gained from conceptual studies continue into pre-engineering and FEED. As the project transitions through each phase, feedback is gathered and documentation is adapted accordingly. Reuse and continuous development of project experience and documentation are examples of how a complete ABB solution can save time and errors, and maintain a standard and consistent level of quality throughout all project phases.

Benefits

- Schedule efficiency
 - ABB handles entire project, simplifying critical delivery path
 - Engineering, drawings and documentation cycle times reduced
 - Can lead to 20 percent schedule improvement



How we support you

Through every step of the life cycle

Global service and support

With local ABB presence in more than 100 countries and oil, gas and chemical centers in all strategic areas, ABB customers gain a qualified telecommunications service partner to provide a broad range of services that extend through each life cycle stage of an installation, including:

- Installation and commissioning
- Operation and maintenance
- Retrofit and upgrade
- Replacement and recycling

Throughout each one of these stages, ABB is on hand to offer:

- Technical advice
- Training
- Contracts

Training

Center of Excellence facilities are located in the USA, UK and Norway offering training for ABB products, processes and applications and general technology. ABB also provides training contracts and assessment programs.

Benefits

- Operating costs controlled through:
 - integrated operations and system management
 - precise diagnostics
 - fewer spare parts
 - less preventive maintenance
 - common training platforms
 - simpler upgrades and modifications.
- Efficient start up and commissioning
 - Integrated control room and ABB support

Telecommunications Management System (TMS)

The TMS integrates all telecommunication management and maintenance configuration tools in a single software application.

TMS uses existing Ethernet for gathering and distributing management information to control all equipment and software applications from a single location, either on site or remote.

All system documentation is available online in TMS, supporting diagnostics and maintenance, and only general knowledge of a given telecommunication system is required to perform maintenance.

TMS may be accessed from dedicated work stations or integrated with other operator stations in the automation system, providing a uniform user interface.

Benefits

- Uniform system maintenance and reconfiguration
- Reduced engineering and interface requirements
- Less cabling and spare parts



Who we work with

More than 100 projects executed

Project: Dow Gulfstream – Freeport, TX

This project sees the delivery of seven different telecommunication systems, plus integration of systems supplied by others, and all onsite installation including cabling, both indoor and outdoor.

Operator: Dow Chemical
EPC/Yard: FTI

Scope: Turnkey delivery of the following systems: PAGA | CCTV | WIFI | Meteorological monitoring | LAN/WAN | SCS | Fiber optic backbone

Project: Trans-Anatolian Natural Gas Pipeline (TANAP)

At 1,850 km, the TANAP pipeline is the longest ever built in Turkey crossing 20 districts and bringing Azerbaijan's natural gas through Georgia, Turkey and Greece directly to Europe. ABB is supplying telecommunications, security and control infrastructure to contribute to safe, secure and reliable operation of the pipeline throughout its lifetime.

Customer: TANAP (SOCAR, BOTAS, BP)
Scope: Main telecommunications and SCADA contractor, delivering integrated solutions for telecoms and control systems to monitor, secure

and control the pipeline: WAN/LAN | Integrated Security System (CCTV, ACS, IDS) | Towers | VSAT | PAGA | Radio systems | Weather observation system | Pipeline monitoring system including fence intrusion detection system (FIDS) | Buried intrusion detection system (BIDS) | Pipeline intrusion detection system (PIDS) & leak detection system (LDS)

Project: Goliat FPSO

The Goliat is a floating production, storage and off-loading platform, 85 km off the coast of northern Norway, where it processes oil from the first field to be developed in those waters. Services being supplied include Goliat's electrical equipment, its instrumentation, valves, control systems and telecoms. The telecoms package allows technicians to manage and monitor the Goliat on the platform itself, and also from onshore operation center. As well as the usual data links, the platform connects with vessels within a range of about 10 km.

Operator: ENI Norge AS
Location: Barents Sea
Scope: EICT package including electrical, instrument, valves, control, telecoms and integrated operations



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