

# Completions Engineering, Commissioning, StartUp and Ready For Operations

ABB's systemized sequenced approach to completions, commissioning and start-up improves accuracy of schedule, delivers real-time progress and optimizes resource utilization during the dynamic process of commissioning. Our integrated processes, software and work flow all focus on each phase of the handover, beginning with construction and ending with the transfer of care. ABB facilitates effective custody and control to Operations.

## The challenge

The primary challenge is meeting in-service milestones with a high degree of operational confidence at start-up, while delivering incident-free safety performance.



## The solution

Applying discipline through combining project-tested completions software (WinPCS), multidiscipline personnel resources, and proven work flow process/technology. Our services include:

- Completions tool (commissioning database)
- Full commissioning teams (commissioning, leadership, supervision and technicians)
- Systems completions planning
- Consulting
- Audits
- Vendor inspections
- Performance testing
- Operations assistance



Our resource pool has 400 inspection, completions, commissioning, start up and administrative personnel. Each person is equipped with the following:

- Access to best-in-class completions software (WinPCS)
- Pertinent industry experience
- Applicable training specific to customer needs
- Trade certification in respective disciplines
- Relevant and current safety training
- Global reach and experience

## Benefits

We offer skilled and trained personnel to assist and execute inspection, commissioning and start-up of construction projects. We ensure scheduling accuracy and provide up-to-the-minute progress reports. Our bundled solutions benefit our clients through the following:

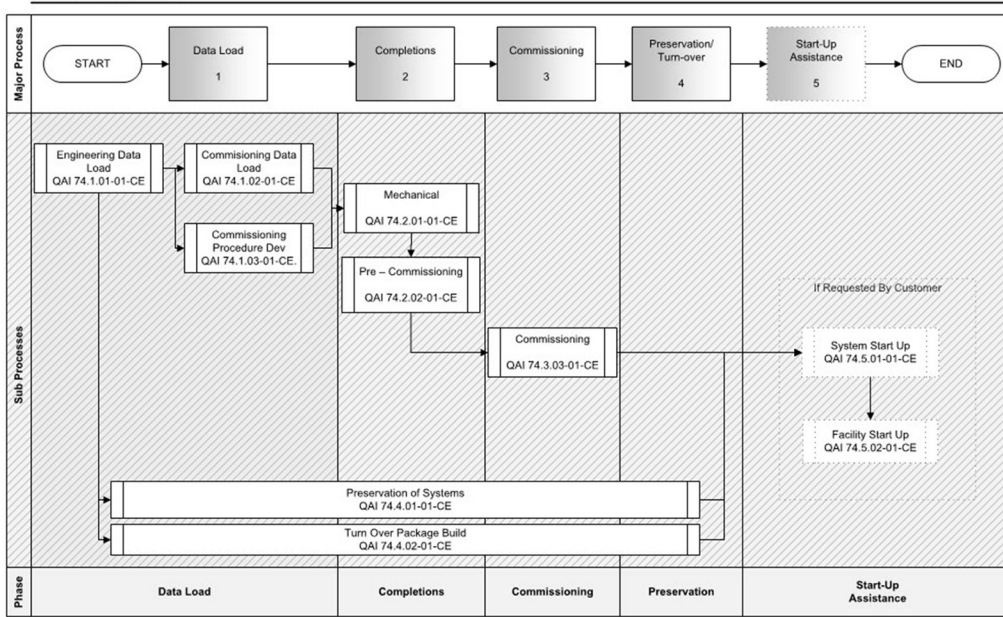
- Comprehensive library of equipment check sheets and commissioning procedures
- Accelerated inspection and commissioning process moving project into ready for operation with increased confidence and detailed documentation/audit trail
- Improved on-demand reporting by system and subsystem
- Proven work flow processes

## Technology expertise

By combining our resources and skills to perform inspection, commissioning and start-up, we are able to deliver a ready-for-operation solution without compromise. Our resource management system enables us to react quickly to the customer's request and match appropriate resources with specific requirements.



### Process Flowchart: RFO Process Overview



The RFO solutions process can be broken down into phases to highlight key handover points as indicated above. Predictability and certainty are essential elements in the delivery of a complete solution



Mechanical Completions

Commissioning

Startup

### Winning the race

The phase which challenges most projects is the transition from mechanical completion to commissioning and the ensuing walk-down, punch-listing and reporting that occurs during this critical period. Our process is comparable to a relay race in that we aim to seamlessly transition from one phase to the next, similar to a runner passing a baton to a teammate.

Understanding and documenting what has been received and managing critical and non-critical punched items when moving from construction to commissioning are essential components of winning the race. Significant time can be gained or lost at this project juncture. The RFO Solution and our work flow process and tools (WinPCS) facilitate this transition, establishing a high degree of confidence related to status of construction and completeness in preparation for turnover to Operations.

The completions tool, populated with validated engineering data, drives continuity from construction handover to commissioning using work flow process, database views and progress reports to the tag level contained in the System and Sub-system hierarchy. There is complete visibility of system availability, saving significant time and preventing delays. We take control and drive optimization at one of the most dynamic phases of the project. If not managed effectively, lost production by missing the in-service milestone can make this the most expensive project phase.

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