Dar Al Riyadh Insight #56
Large Complex Projects, Megaprojects, Giga Projects

Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.

This Insight provides an intro in this series of Insights, we will take a closer look at configuration management and how to best use it. We look at challenges, best practices and lessons learned, presenting a startup checklist. We will conclude this series of Insights by looking at some emerging opportunity areas.

What is configuration management?

Configuration management is a formal process of identifying, recording and tracking the functional and physical characteristics of items designated for configuration control. It ensures that changes to the technical scope baseline are assessed, recorded, approved and communicated to the broader project team. Configuration management also ensures tie out of changes in the technical baseline to cost, schedule and risk baselines.

Originally developed in the 1950's to control documentation in the manufacturing of missiles, configuration management has come a long way. Today it may be undertaken utilizing established industry standards (ISO 10007) and later in this series of Insights we will highlight some future opportunity areas.

This Insight focuses on its application on large complex projects but analogous opportunities exist at the program and enterprise level.

Why is it important in large complex projects?

Configuration management is essential to ensuring the technical integrity of complex projects and is a significant tool in controlling and managing changes to the technical scope baseline.

Configuration management ensures that:

- All relevant stakeholders have been consulted and informed before a change in the technical baseline is made
- Baselines are current, reflecting all approved changes, and that all parties are working to the latest approved baseline
- Changes to items identified as being subject to configuration management are adequately controlled

- Changes in one element of the project do not have wider adverse consequences throughout the broader project
- Changes to the baseline reinforce project requirements with respect to performance (including design and operating margins); safety (construction and operating); reliability (appropriate RAM analysis have been undertaken or change is adequately enveloped by prior analysis); security (including any emerging cybersecurity issues); sustainability (economic, social, environmental including considerations related to embedded carbon (CAPEX) and greenhouse gas emissions (OPEX))
- All project design elements (calculations, specifications, designs, BIM, control logic, associated software, notes, manuals and other instructions) are internally consistent
- Special considerations applicable to software process configuration management are in place and implemented robustly

Configuration management is an essential tool in large complex projects which not only have a multiplicity of project systems, structures and components but also a multiplicity of organizations, organizational elements and execution centers.