

INDUSTRIAL COMMISSIONING ASSOCIATION MONTHLY NEWSLETTER

For commissioning professionals working on
industrial plant processes and energy system projects

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CEO MESSAGE

By Paul Turner, P.Eng., PMP

It's been only one month since the ICA Commissioning Standard was released, and the feedback has already been extremely positive. Project teams are using the standard to align their project commissioning for success right from the start.

We've received feedback that project teams are finally able to write better contracts with commissioning requirements included upfront, to align construction completions with commissioning sequences.

We've received feedback that individuals are using the standard to understand what a structured commissioning process looks like.

We've received feedback from project managers and engineers that they are now able to integrate commissioning into their early planning processes.

It is amazing that project teams are able to put this knowledge and expertise to great use right away and start applying these lessons learned and best practices on their projects for improved project performance. The power of the Internet is quite incredible to share this knowledge and expertise worldwide to help people and projects.

Now, there have been some detractors of the standard as well – a few individuals that are reluctant to move forward with change and standard ways of doing the work. As the saying goes, you can't please everyone. There are some people set in their ways with how it's always been done. The most contentious issues seem to be about the terminology. For example, the term

pre-commissioning – some people are thrilled that this term is not used in the standard, while others are not – even though nobody in the industry can agree exactly on what pre-commissioning is. Another one is Construction Completion to replace the term Mechanical Completion. When you think about it, Mechanical Completion is an outdated term, even though it is ingrained in the industry. However, there is more to complete than just mechanical items – what about electrical completions and automation completions? Construction Completion makes a lot more sense and is more accurate to define the specific milestone, and recommended in the standard to use this term when writing contracts for the next project. To further help people benefit from the ICA Commissioning Standard, the Industrial Commissioning Association is hosting a series

of live workshops to explain how to use the standard and how to implement it on projects. The live workshop series started last week on Feb 26. You can watch the replay of the first session on the Industrial Commissioning Association's YouTube channel, and be sure to join the next 4 parts of this 5 part series each week on the following dates:

- March 5: ICA-003 and ICA-004
- March 12: ICA-005
- March 19: ICA-006
- March 26: ICA-007, ICA-008, ICA-009

Join live, or catch each replay on the YouTube channel to see how the ICA Commissioning Standard can help you and your projects succeed at delivering world-class projects.

Paul Turner, P.Eng, PMP

Our Approach

We begin with the end in mind. Our experience shows that the final 5% of project execution can be the most challenging and costly. Early engagement sets projects up for a smoother start and more efficient production.

➤ Detailed CSU Planning

Our experienced key staff excel in developing planning deliverables for various mega-projects. Utilizing Project Go-by and an extensive set of lessons learned, we ensure optimal outcomes.

➤ Mechanical Completion Planning

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➤ Quality and Certainty

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➤ Novus Integrated SSHE Program

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TRANSFORMING INFRASTRUCTURE PERFORMANCE

SEAMLESS INTEGRATION IN COMMISSIONING SUCCESS

by Peter Foxley

*ALIM Systems | Chapter Lead UK -
Industrial Commissioning Association*

Three words encapsulate our strategy to bring the ICxA Global Commissioning Standard to life:

Educate, Collaborate and Integrate

These guiding pillars unite the traditional institutional bodies of asset management, engineering management, and project management. However, it is by embracing integration practices, that we ensure a comprehensive, cooperative, and systems-based approach to commissioning standards and their adoption on a global scale.

Connecting silos throughout the project lifecycle

PRE-Front-End Engineering Design (FEED) Phase

At the outset of any complex project, it is common for the owner-operator or client function to lack the necessary technical capability and capacity to accurately articulate the desired business needs. They typically require technical assistance in the form of an **Architectural Engineering** consultancy to develop the Concept of Operations (ConOps) and to elicit, elaborate, and document the underpinning **stakeholders' requirements**, including:

Business Requirements:

- Defining the project's objectives, goals, and deliverables.
- Aligning the project with the organization's strategic vision and business needs.

Socio-Technical Planning Requirements:

- Incorporating both technical and social considerations in project planning.
- Ensuring effective collaboration and communication among stakeholders.
- Addressing the complexities of highly regulated environments.



***“it is by embracing
integration practices, that
we ensure a comprehensive,
cooperative, and systems-
based approach to
commissioning standards
and their adoption on a
global scale.”***

Regulatory Requirements:

- Complying with all relevant laws, regulations, and standards.
- Maintaining safety, quality, and environmental standards.
- Ensuring legal and regulatory compliance at every stage of the project lifecycle.

Front-End Engineering Design (FEED) Phase

Entering this critical phase, the same or different **Architectural Engineer (Programme Partner)** defines the electro-mechanical and automated systems, guided by the design principles of climate, people, places, and value, and the application of best practices to create sustainable and socially responsible solutions.

This comes in the form of a value creation framework that is powered by **socio-technical requirements**: design statements that define a functional or quality characteristic, or performance constraint of a dynamic asset and necessary for outcome success.

In a **systems engineering** context, the value creation framework comprises:

The **System Requirements Specification (SRS)** detailing the "what" is needed to satisfy the stakeholders' requirements.

The SRS translates the high-level requirements and operational scenarios outlined in the PRE-FEED ConOps into detailed, measurable, and .

testable system requirements

This document serves as a foundation for the design, development, and testing of the system, ensuring that it aligns with the stakeholders' needs and expectations.

The Sub-Systems Requirements Specifications (SSRS) detail 'how' the system requirements will be delivered, effectively forming units of measurement, we refer to as the 'bill of requirements'.

The SSRS provides a comprehensive description of the design, development and operation of each sub-system, ensuring that every component contributes effectively to meeting the overall stakeholder requirements. This detailed documentation is crucial for ensuring that all functional and quality aspects of the system are properly addressed and that the project remains aligned with the stakeholders' needs and expectations throughout the development lifecycle.

During the Front-End Engineering Design (FEED) phase, the Project Delivery Partner or Project Management Office (PMO) is traditionally engaged. They are responsible for verifying that the project is designed, built, and tested according to the System Requirements Specification (SRS) and the Sub-Systems Requirements Specifications (SSRS), contractually referred to as the "Scope." It is the Project Management Plan (PMP) that outlines the scope, quality, and time aspects of a project, serving as a roadmap for the entire commissioning process, ensuring that all activities are planned, executed, and monitored effectively.

Setting up projects for commissioning success

Lessons learned from high-profile projects, such as the £18.8bn Crossrail (London's Elizabeth Line), emphasize the critical role of the commissioning project manager (**Project Commissioner**). We believe that the Project Commissioner should validate the System Requirements Specification (SRS) and Sub-Systems Requirements Specifications (SSRS) against the Stakeholders Requirements, to support the process of acquiring planning consent and gaining final business case approval, before committing public and private investment for the high expenditure delivery phase. This validation ensures that all system requirements are traceable back to their corresponding stakeholder requirements, keeping the project aligned with stakeholders' needs and expectations throughout the development lifecycle

The **Project Commissioner** develops the Commissioning Execution Plan (CEP); a living document that outlines the systems-based processes and procedures at predefined gateway review points. This ensures that all systems and components are designed, manufactured, installed, tested, and operated according to the stakeholders' requirements of the owner or final client.

By integrating the CEP into the tendering and commercial arrangements ensure a structured and systematic approach to commissioning, promoting efficiency and eliminating waste. It also embeds information and knowledge exchange (intellectual capital) protocols, to foster efficient communication, coordination and evidence-based decision making, ultimately contributing to the successful execution of the commissioning process,

enhancing outcomes at every stage of the project lifecycle.

Managing risk is managing change

History tells us that the effectiveness of change management is proportionate to the costs of failure on major projects. We advocate for a risk management model that appoints the Project Commissioner as the moderator for a committee consisting of the Project Sponsor (stakeholders' representative), the Programme (engineering) Partner, and the Delivery (project management) Partner.

This committee effectively functions as a requirements configuration board, responsible for:

- **Identifying Changes:** Detecting wrong, missing, or conflicting requirements throughout the project lifecycle.

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- **Evaluating Risks:** Assessing the potential impacts of changes on the project.
- **Updating Requirements:** Retiring outdated or irrelevant requirements and adding new ones to address current needs.
- **Assurance:** Ensuring that all changes are validated and traceable back to the original stakeholder requirements.

The Project Commissioner oversees these controlled changes as part of the evolving value creation framework, mitigating potential risks and inspiring innovation.

All things considered

We began by exploring the three guiding pillars of Educate, Collaborate, and Integrate. We then delved into how integration of the whole, driven by cultural transformation, can be achieved through three key leadership roles.

The **Architectural Engineer** (programme partner) who defines the optimal solution, grounded in design principles of climate, people, places, and value.

The **Project Manager** (delivery partner) who verifies that the solution is designed, built and tested with precision, and to programme and budget.

The **Project Commissioner** (integration partner) who validates that the solution achieves the desired outcomes at every stage of the project lifecycle.

Final Thoughts

Paul Morrell, OBE, was the UK Government's

first Chief Construction Adviser (appointed in 2009) with a brief to champion a more coordinated approach to affordable, sustainable construction.

One of his notable presentations, often referred to as "Integrate you bastards," underscores his strong advocacy for integration and collaboration within the construction sector.

Morrell emphasises the importance of breaking down silos and fostering a more coordinated approach to construction projects to achieve better outcomes – which we believe clearly demonstrates the transformative impact of the ICxA Global Commissioning Standard across all industrial sectors.

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EMBEDDING COMMISSIONING INTO PROJECT CONTRACTS FOR SEAMLESS SYSTEM HANDOVER

HOW CONTRACTING FOR COMMISSIONING ENSURES A SMOOTH SYSTEM HANDOVER FROM CONSTRUCTION GROUPS TO COMMISSIONING GROUPS

by Paul Turner, P.Eng., PMP

Introduction

Many industrial projects struggle with delayed handovers and commissioning bottlenecks due to poorly defined contractual obligations for system completion. Ensuring that construction teams, vendors, and commissioning teams align on system handovers is critical for on-time

commissioning execution. This article explores how embedding commissioning into project contracts ensures a structured system handover sequence, preventing delays, miscommunication, and incomplete system readiness.

Why Defining System Handover in Contracts is Critical

Construction teams often focus on construction completion, but without clear system handover definitions, commissioning teams may receive incomplete or non-functional systems.

The challenge is that everyone's definition of "complete" seems to mean something different. When system handovers are not clearly defined in contracts, construction groups interpretation of complete will mean something different than commissioning groups interpretation of complete, and will mean something different than the project owner's interpretation of complete. And when all groups working on projects have a different understanding of their role and responsibility on what they need to complete, it's impossible to align on system handover responsibilities.



"The challenge is that everyone's definition of "complete" seems to mean something different."

Poorly defined handover sequences in contracts lead to unclear ownership of who is responsible for each stage of testing. For example, who is responsible for pressure testing and leak testing of mechanical piping, or who will be performing point-to-point checks to verify cable terminations.

When handover sequences are poorly defined in contracts, any late-stage modifications to sequences disrupt commissioning schedules and cause expensive delays.

And systems handed over from construction groups to commissioning groups out of sequence ultimately delay testing and delay startup of critical path commissioning activities, resulting in project delays.

Contracts must have clear, enforceable requirements that define construction

completion requirements, including systematization and phased turnover planning, as well as clearly defined completion criteria for each system that defines the goalposts to achieve, making it very clear what the definition of complete it, including all physical and document deliverables. A defined list of system handover dates with associated payment milestones is required upfront in contracts so there are no surprises on what is required to complete each system handover.

Structuring System Handovers for Seamless Commissioning

Construction handovers must be structured by systems, not by construction areas. And the only way to do this is by defining system handovers in construction contracts before they are signed – because as you know, if it's not in the contract, then it's not going to

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happen. A well-defined system handover sequence defined upfront in contracts ensures that commissioning activities can proceed efficiently as each system is complete installation.

Besides, construction groups need this information in advance of starting the work, if they are to be able to plan the completion of their work. It is hardly fair to inform construction groups what is required for completions when they have already started their work, and already planned equipment leadtimes and workforces. The only way for construction groups to plan their work successfully is by having all the details for system handovers in advance, so they can plan all aspects of construction.

Key Contractual Requirements for Successful System Handovers

There is more to defining system completions than just naming the list of systems and the milestone due dates for each. There are complex interfaces with each system that require a clear boundary between each system. Defining system boundaries and responsibilities at each boundary must be defined in the Division of Responsibility Matrix (DOR) and included in contracts before they are signed.

Contracts must clearly define system ownership during turnover, including:

- Who is responsible for final inspections and completion checks?
- How will the transition from construction to commissioning be documented?
- What testing (e.g., flushing, leak testing, megger checks, point-to-point checks) must be completed by construction

groups before each Construction Completion (CC) milestone is achieved for each system handover?

Contracts must clearly define system handover milestones and deadlines:

- Construction teams must complete systems in a defined sequence, allowing commissioning teams to progress efficiently.
- Each system should have a handover date tied to commissioning readiness, ensuring commissioning is not waiting on incomplete systems.

Contracts must require full system documentation at the time of each system handover, including:

- Marked-up as-built drawings
- Completed A Inspection Test Records (A-ITR) completed by construction groups
- Equipment O&M manuals, and system quality dockets

The documentation is equally as important as the physical assets, and must be included in everyone's definition of complete in order to achieve Construction Complete for each system along with the associated payment milestone.

Why Commissioning Must Be Part of Construction Planning

Too often commissioning is referred to as "testing at the end" and not as a critical aspect of project planning. Instead, commissioning must be embedded into construction planning since these two phases of projects require tight integration.

- Systems are built and delivered in a logical

commissioning sequence that aligns identically with the project startup sequence

- Construction Completion milestones for each system handover must align with commissioning schedules to preventing expensive bottlenecks during on-site testing.
- Construction group's responsibilities to complete testing activities must be planned for and completed before each system handover, ensuring systems are safe and ready for testing.

The only way construction groups are able to plan for completions is when they have full visibility into what success looks like during commissioning. For this reason, construction planning and commissioning planning by these two groups must take place

currently at the beginning of projects in order that each group can align activities. When construction groups plan their work on their own, either because commissioning sequences are not known, or because commissioning groups are not involved early in projects, then it becomes very expensive later in projects once commissioning sequences are known, and have construction groups re-plan their work to align with commissioning sequences.

Best Practices for Contracting Commissioning System Handover

There are 8 requirements defined in the ICA Commissioning Standard that outline what must be included in construction contracts to align with commissioning requirements. These are a few of the requirements (you can get all 8 when you download the standard):



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Define system boundaries and responsibilities for Construction Completions and the start of Static Commissioning.

- **Establish a handover sequence** that ensures systems are handed over in a logical order that aligns with commissioning and startup sequences.
- **Require system handover documentation** (as-builts, test reports, checklists) to be completed at the same time as physical assets are handed over, before static commissioning begins. This is easily tracked in commissioning software.
- **Ensure any testing to be performed by construction groups (flushing, leak testing, megger checks, etc) is contractually included** to avoid delays in system activation.

A commissioning-first contracting strategy is your best approach to projects:

When you start with the end in mind when writing contracts, and use the ICA Commissioning Standard as a guide to write better contracts, you're able to streamline

your project completion:

- Faster system handovers
- A structured and predictable commissioning process
- No last-minute surprises delaying startup

However, if you're leaving commissioning planning until later and awarding construction contracts with commissioning planning to be determined later, then you're gambling with your project results, and possibly awarding contracts to construction groups unfamiliar with system-based completion methodologies to align with commissioning, startup, and in-service dates.

Write better contracts for better commissioning outcomes on projects.

Want to improve your commissioning contracting strategy?

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STRUCTURE AND LEADERSHIP IN A COMMISSIONING TEAM

*by Manoj Segamoney
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Team Structure in Commissioning

The success of any commissioning project relies heavily on a well-defined team structure. A clear hierarchy ensures that each member understands his responsibilities, to whom he reports, and how his role contributes to the overall project goals.

What should the reporting structure in a Commissioning Team be?

A typical commissioning team structure often resembles a pyramid, with the Commissioning Manager/Director at the helm. This individual has the ultimate responsibility for the entire commissioning process. The Commissioning manager would plan out the commissioning process, ensures this is communicated to the rest of the team and ensures the actual commissioning process tracks to the plan.

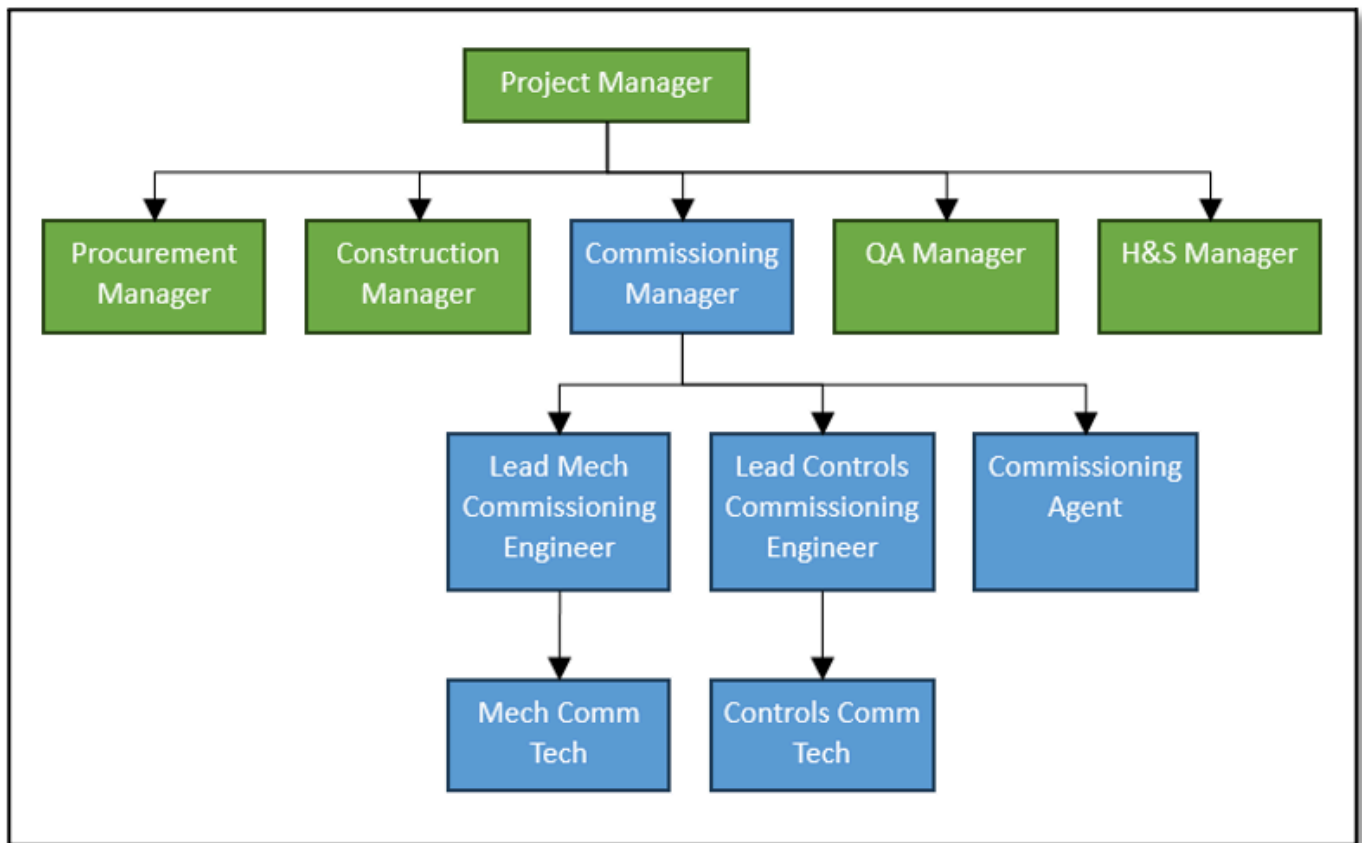
They would also be overseeing cost and schedule related matters in the project. They are supported by a team of Senior Commissioning Engineers (known sometimes as Commissioning Leads), each specializing in a particular area like mechanical, electrical, or instrumentation and control. While the overall commissioning plan is put forward by the

Commissioning Manager, the Commissioning Engineer would develop the detailed commissioning plans. Examples of these plans are equipment interface test plans, IO checks, electrical tests and other technical procedures. They ensure the commissioning process tests equipment to specification, and all related documents and technical processes are complete. These Engineers then supervise a group of Commissioning Technicians who carry out the actual testing and verification tasks.

With the increasing complexity of projects, there is a need for a Commissioning Team to be made up of multiple Commissioning Technicians with different specialties, like mechanical, electrical, controls and software. They will be executing tasks like equipment power-ups, motor rotation tests, and IO tests, belt and chain alignment and tensioning, controls and software commissioning and integration. They are vital to ensuring the plans prepared by the Senior Commissioning Engineer are executed. The Commissioning Technicians will be working closely with the Commissioning Engineers from their disciplines.

Some projects may require a third-party professional to validate the work being done to ensure the system is being commissioned objectively and meets the required standard. Other important project members who support the commissioning team would be the Procurement manager, and the Health and Safety Manager.

The Procurement Manager ensures the procurement team coordinates purchases with suppliers to arrive on site when needed. The Health and Safety Manager ensures that safety guidelines are planned and enforced on site, making for a safe workplace. The chart below is an example of commissioning team structure.



(Example of Commissioning organization chart)

It is important to note that the specific team structure can vary depending on the size and complexity of the project.

Larger projects may require a more elaborate structure with additional layers of management, while smaller projects may be able to function with a more streamlined approach.

Regardless of the specific structure, it is crucial that team members understand their roles and responsibilities.

This clarity not only improves individual performance but also fosters effective communication and collaboration within the team.

A well-defined team structure is a cornerstone of a successful commissioning project.

Having the right reporting structure is crucial to ensuring the commissioning process

progresses smoothly.

The other factor that influences how the commissioning process progresses, which is rarely discussed, is commissioning team leadership, more specifically, the leadership style.

Is Leadership and Management the same?

The words *Leadership* and *Management* are often used interchangeably, but they are both very different.

How does *Leadership* differ from *Management*? *Managers* focus on making work efficient through the planning of processes and workflows for their teams.

Leaders on the other hand focus on developing and inspiring their team members (Taplin 2023).

The table below summarizes the differences between *Leadership* and *Management*.

Leadership	Vision and Inspiration: Leaders create a vision for the future and inspire others to achieve it.
	Change and Innovation: Focuses on driving change and encouraging innovation.
	People-Oriented: Motivates and empowers team members, fostering a positive and collaborative environment.
Management	Process and Execution: Managers implement processes and ensure organizational goals are met.
	Stability and Efficiency: Focuses on maintaining stability and improving efficiency.
	Task-Oriented: Directs and oversees tasks, ensuring that team members complete their work as directed.

Leadership vs Management (Source: FCM 2004)

I prefer Peter Drucker’s statement on this topic. He says, "Management is doing things right. Leadership is doing the right things." (Dublino 2024). While both *Leadership* and *Management* are essential for the success of any organization, we will be focusing on *Leadership* in this article.

There are various approaches leaders could use to guide and motivate their teams. This is referred to as leadership styles. Some of the most common styles are *Coercive Leadership*, *Authoritative Leadership*, *Pacesetting Leadership*, *Affiliative Leadership*, *Democratic Leadership* and *Coaching Leadership* (Knight 2024). Choosing the right style is important as no one style fits all and one needs to consider factors like organizational and social cultures, external environments, team dynamics and the nature of the task at hand.

What is involved in Leading a Commissioning Team?

Let us look at the Commissioning phase of a project. The commissioning environment is fast paced, demanding and time critical. It has coordination challenges as well as the added complexity of late discovery of issues. Keeping team members motivated and working in synergy with one another are priorities. As mentioned above, a commissioning team is

made up of a multitude of specialists, and as a leader, you would need to ensure clear expectations are set. Team members need to have a clear understanding of what is expected when a task is assigned to them. This would include task boundaries, task duration, documentation requirements and communication management. Leaders will need to ensure they are motivated through the various challenges they face. This sometimes involves conflict de-escalation, for example during the first time a team comes together without prior experience of working with one another, also known as the team storming phase. What about team discipline?

Discipline?

This is rarely a topic for discussion when it comes to commissioning. From my experiences with being part of multiple commissioning teams, we rely on one another to be able to complete the tasks at hand. We also rely on one another to keep the working environment safe. This means every one of us need to be there when our team members need us. This is where the first example of discipline takes the form of punctuality. The team should start together, and finish together. For example, if commissioning is to

begin at 7 am, the entire team needs to be there 10 minutes before 7, ready to begin work. On complex systems, having team members show up and leave at different times drastically affects the progress of the entire team. For example, the Controls Tech and Electrical Tech are ready to do motor rotations for chain tensioning, but the Mechanical Tech has not arrived for work. The task cannot progress any further until the Mechanical Tech does his part. Similarly, if the Mechanical Technician is ready to complete the last system, but the Controls Technician decides to leave half an hour earlier, progress is disrupted again. Team leaders need to ensure their team members understand the importance of being punctual. The second example of discipline is routine. There needs to be regimented discipline among the team members.

For example, the start of the workday should include a prestart briefing, attended by all the members to ensure that everyone is on the same page and share the same goals for the day. Some of the best commissioning teams I have seen start their day lined up no differently to what you may see in the army, in their work uniform and in full attention while their commissioning lead briefs them on their daily tasks. This again emphasizes communication and setting clear task goals for the day.

What are the Leadership style options?

Having described the strict commissioning environment above, it sounds like the *Authoritarian Leadership* style, where the leader has absolute control, demanding full obedience from their subordinates, would be



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needed. On the contrary, one needs to consider the cultural influences of where they are leading the team. What works in one country, may not be acceptable in another. Remember that at the end of the day, the leader is leading an individual with unique emotional, social and cultural needs and behaviors. If one is considering the *Authoritarian* approach, an alternative leadership style would be the *Paternalistic Leadership*, where a nurturing element is added, allowing for a leadership style to bring together authority, discipline and moral integrity with a touch of fatherly benevolence (PON 2024).

Another leadership style that is rather fluid and tries to accommodate the variety of personalities one may find in their team is the *Path-Goal Leadership* style. With *Path-Goal Leadership*, the leader alters his approach on an individual level, selecting different behaviours, based on each member’s needs. The 3 major factors of concern in the *Path-Goal Leadership* style are the leader’s behavior,

the team members behavior and the task characteristics.

With the first 2 factors, *Path-goal Leadership* suggests the use of *Directive*, *Supportive*, *Participative* and *Achievement Leadership* styles based on the team members needs, whether it is for affiliation or structure, if they desire control or based on the follower’s abilities. The table below shows the correlation between the team members behavior vs the preferred leadership approach.

For example, if you identify that a team member has a need for clear command and structure, the suggested leadership approach to adopt is the *Directive Leadership* style. On the other hand, if another team member needs to feel a sense of affiliation, then a *Supportive Leadership* style is more favourable.

The third factor in the *Path-goal Leadership* is the task characteristics, which is summarized in the table below.

Team member behaviour	Description	Preferred leader
Need for affiliation	Need for friendly and supportive leaders	Supportive leader
Require structure	Authoritarian, requires structure	Directive leadership
Desire for control	Internal locus of control	Participative leadership
	External locus of control	Directive leadership
Perception of abilities	Higher confidence, results in lower coaching from leader	Varying degree of directive leadership

Correlation between the team members behavior vs the preferred leadership approach
(Source: Adapted from Northouse 2021, p.121)

Task characteristic	Description
Followers task	Clear / unclear, repetitive / non- repetitive
Authority system	Rules / work requirements
Work group	Strong / weak, supportive / non-supportive structure

Task Characteristics (Source: Adapted from Northouse 2021, p.122)

The *Path-Goal Leadership* style provides for a holistic look at the team, paying close attention to the uniqueness of each individual, allowing the leader to effectively motivate, inspire and ultimately lead the team towards successful commissioning.

In summary, there is no one size fits all when it comes to Commissioning team structure and Commissioning team leadership.

One needs to pay close attention to the project environment, the needs of his team members, external factors and company and social cultures to make a decision on what structure and leadership style works best.

For more details about Commissioning team structure, download the Industrial Commissioning Association's Commissioning standard ICA-003 – Roles and Responsibilities.

References

Dublino, J 2024, "What Your Business Can Learn From Peter Drucker", Business.com, 5 November 2024,
[Peter Drucker's Management Theory Explained](#)

Forbes Councils Member (FCM) 2024, "15 Important Differences To Know Between Leadership And Management", Forbes, 16 December 2024,
[Council Post: 15 Important Differences To Know Between Leadership And Management](#)

Gavin, M 2019, "Leadership vs. Management: What's the Difference?", Harvard Business School (HBS), 31 Oct 2019,
<https://online.hbs.edu/blog/post/leadership-vs-management>

Industrial Commissioning Association "ICA-003 - Roles & Responsibilities", ICxA, viewed 10 Feb 2025,
<https://courses.commissioningandstartup.com/products/communities/v2/icxa/resource/1899a03e-968b-41cc-9fbd-1f7188412e2d>

Knight, R 2024, "6 Common Leadership Styles — and How to Decide Which to Use When", Harvard Business Review, 9 April 2024,
<https://hbr.org/2024/04/6-common-leadership-styles-and-how-to-decide-which-to-use-when>

Northouse, PG 2021, *Leadership: Theory and practice*, 9th edn, SAGE Publications, Los Angeles.

PON 2024, "Paternalistic Leadership: Beyond Authoritarianism", Harvard Law School (HLS), 5 November 2024,
<https://www.pon.harvard.edu/daily/leadership-skills-daily/paternalistic-leadership-beyond-authoritarianism/>

Taplin, S 2023, "Manager Versus Leader: What's The Difference?", Forbes, 3 Jul 2023,
<https://www.forbes.com/councils/forbestechcouncil/2023/07/03/manager-versus-leader-whats-the-difference/>