

Project Engineering Support for the Site Construction Preparation and Coordination Activities

Technical Specification

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1. SCOPE OF WORK

The objective of this Contract (to be awarded in four lots) is to provide the IO Technical Responsible Officer or deputy (hereafter known as the IO-TRO) with specialist project engineering support, in the form of four appropriately qualified and experienced Project Engineers (hereafter known as the Engineers).

The scope of work to be performed by the Engineers will be carried out in close liaison with the TRO, engineers and planners of the AOP Division and will include, but shall not necessarily be limited to four Lots:

- A. Support to the preparation and execution of ‘early’ mechanical and piping, and electrical installation works at the ITER site.
- B. Support to technical studies and reviews during implementation of the site construction contracts strategy.
- C. Support to the preparation of the site construction baseline prior to Construction Readiness Review (CRR).
- D. Support to the implementation of Site Construction Management Systems, Processes, and Procedures.

2. ESTIMATED DURATION

The duration of this Contract shall be 12 months.

3. WORK DESCRIPTION

The Engineers’ full-time presence at the ITER site is necessary for the effective performance of the duties.

Each work task will be individually discussed in consultation with the IO-TRO and a deliverable date will be agreed.

The Lots of work listed below and individual assignments may be modified by the IO-TRO or his authorised deputy as needs arise.

Lot A: Support to the preparation and execution of ‘early’ mechanical and piping, and electrical installation works at the ITER site:

Task	Description
A-1	Project planning and integration <ul style="list-style-type: none">▪ Site Construction Requirements▪ Scopes of work▪ Project schedules▪ Cost estimates
A-2	Reviews of contractor documents <ul style="list-style-type: none">▪ Drawings▪ Models▪ Specifications▪ Procedures▪ Plans▪ Schedules

A-3	Identification and logging of issues requiring IO intervention
A-4	Responses to Technical queries and Requests for Information (RFI)
A-5	Monitoring and surveillance of Installation Works

Table 3.1: Tasks within Lot A

Lot B: Support to implementation of the site construction contracts strategy:

Task	Description
B-1	Installation scope studies
B-2	Contract boundaries and interfaces
B-3	Installation volumes and quantities studies
B-4	Equipment and Tooling studies
B-5	Installation resource studies
B-6	Reviews of Site Construction Specifications
B-7	Technical studies for specific systems

Table 3.2: Tasks within Lot B

Lot C: Support to the preparation and implementation of:

Task	Description
C-1	WBS Dictionaries
C-2	Scope statements
C-3	Schedules
C-4	Site Construction Requirements
C-5	Specific and Generic Procedures
C-6	Interfaces
C-7	Change control support
C-8	Installation processes and sequences
C-9	Mechanical and Electrical Completions processes and sequences
C-10	In-systems and Inter-system Connections processes and sequences
C-11	Lifting and handling studies for specific systems
C-12	Kinematic studies for specific systems
C-13	Equipment and Tooling studies for specific systems
C-14	Identification of configuration items forming the technical baseline
C-15	Construction Readiness Review Lot preparation
C-16	Implementation of the Site Construction Baseline

Table 3.3: Tasks within Lot C

Lot D: Support to the implementation and integration of Site Construction Management systems:

Task	Description
D-1	Support development of interfaces to, and reporting from, the SmartPlant suite: <ul style="list-style-type: none"> ▪ SmartPlant Construction ▪ SmartPlant Materials ▪ SmartPlant for Owner Operators
D-2	Support development and full implementation by IO users of the Suppliers database including data verifications and development of processes for data reconciliation with schedule interfaces, and reporting
D-3	Support development of interfaces between Primavera P6 and other CM applications including data verifications, reports, and quality checks
D-4	Support development of Scope database and its interface with Primavera including management processes
D-5	Support preparation of system specifications and enhancements to the systems required by IO users
D-6	Support development of user processes and flow charts
D-7	Support development of procedures and guidance notes for the above applications and databases
D-8	Development of communication packages for users and stakeholders
D-9	Development of training materials for users

Table 3.4: Tasks within Lot D

4. LIST OF DELIVERABLES AND DUE DATES

The tables below identify the preliminary timetable for completions of deliverables.

1. Intermediate deliverables within each of the four Lots will be discussed with the Engineers before their commencement and their scope and due dates agreed each month.
2. Finish dates indicate when the final in a series of deliverables are expected to be completed.

List of Deliverables and their Schedule			
Del.	Description	Due Date	Acceptance criteria

Lot A : Support to the preparation and execution of ‘early’ mechanical and piping, and electrical installation works at the ITER site

A-1	Project planning and integration	As required Finish T+6m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
A-2	Reviews of contractor documents	As required Finish T+6m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
A-3	Identification and logging of issues requiring IO intervention	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
A-4	Responses to Technical Queries and Requests for Information (RFI)	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
A-5	Monitoring and surveillance of Installation Works	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy

Lot B : Support to implementation of the site construction contracts strategy

B-1	Installation scope studies	As required Finish T+8m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
B-2	Contract boundaries and interfaces	T+4m	Deliverables accepted by AOP/PCD Division Heads Bi-weekly reports accepted by IO-TRO
B-3	Installation volumes and quantities studies	As required Finish T+8m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
B-4	Equipment and Tooling studies	As required Finish T+8m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
B-5	Resource studies	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
B-6	Reviews of Site Construction Specifications	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
B-7	Technical studies for specific systems	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy

Lot C: Support to the preparation and implementation of the Site Construction Baseline

C-1	WBS Dictionaries	Finish T+6m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-2	Scope statements	Finish T+8m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-3	Schedules	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-4	Site Construction Requirements	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-5	Specific and Generic Procedures	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-6	Interfaces	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-7	Change control support	As required	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-8	Installation processes and sequences	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-9	Mechanical and Electrical Completions processes and sequences	Finish T+9m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-10	In-systems and Inter-system Connections processes and sequences	Finish T+10m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-11	Lifting and handling studies for specific systems	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-12	Kinematic studies for specific systems	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-13	Equipment and Tooling studies for specific systems	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-14	Identification of configuration items forming the technical baseline	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-15	Construction Readiness Review package preparation	Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
C-16	Implementation of the Site	Finish T+12m	Deliverables and Bi-weekly reports

	Construction Baseline		accepted by IO-TRO or deputy
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Lot D: Support to the implementation and integration of Site Construction Management systems

D-1	SmartPlant suite	Finish T+6m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-2	Suppliers database	Finish T+3m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-3	Primavera P6	Finish T+2m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-4	Scope database	Finish T+5m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-5	System specifications	Finish T+6m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-6	User processes and flow charts	Finish T+7m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-7	Procedures and guidance notes	Finish T+7m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-8	Communication packages	As required Finish T+12m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy
D-9	Training materials	Finish T+9m	Deliverables and Bi-weekly reports accepted by IO-TRO or deputy

T0 = date of the kick-off meeting

A bi-weekly report shall be provided, reflecting the status of the specified deliverables for that month.

5. ACCEPTANCE CRITERIA

All Deliverables and bi-weekly reports will be subject to the approval of the IO-TRO mentioned in the Contract or his authorized deputy.

6. WORK MONITORING / MEETING SCHEDULE

Completion of work items will be confirmed by the IO-TRO or his authorized deputy. For longer tasks an interim monitoring point may be defined.

7. REQUIRED QUALIFICATIONS AND EXPERIENCE

- For Lots A-D the Engineers shall have the following qualifications and experience:
 - **Lot A** - minimum of 5 years (but preferably 7 years) proven experience in a Construction Project Engineering role associated with mechanical and piping systems, including critical reviews of technical specifications, contractor documents, design documents, project planning, and issues management and resolutions.
 - **Lot B** – minimum of 5 years (but preferably 7 years) proven experience in a role associated with the preparation of site construction contracts including technical specifications, studies, optimisation of contractor interfaces and scope.
 - **Lot C** – minimum of 5 years (but preferably 7 years) proven experience in a role associated with the preparation and management of project planning

documents including studies, scope, schedule, and support to reviews for the assembly and installation of complex systems.

- **Lot D** – minimum of 5 years (but preferably 7 years) proven experience in a role associated with the implementation of systems, and databases including the preparation of user guidance, process charts, and training materials.
- Demonstrable practical knowledge of Project Management, Construction Management and Project Management Engineering techniques
- Fluent in the English language, written and spoken;
- Good planning, organisation, communication and negotiation skills;