Call for Nomination

Project Management services for IO Project Controls Office

Technical Summary

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1   Purpose

The ITER Organization (IO) Project Control Office (PCO) intends to place a Framework contract for project management services in specific technical areas, as described further below. This technical summary provides a summary of the scope of services and gives an overview of the requirements and objectives of this contract so that interested companies can express their interest to their respective Domestic Agencies. Further information including detailed technical specifications, requirements, and deliverables will be provided in the next stages of the procurement procedure.

2   Background and Objectives

ITER ("The way" in Latin) is a next generation fusion Tokamak designed "to demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes". With a long lifespan of over several decades, it is intended that ITER will be a single step between the current set of fusion experiment and DEMO, a fusion power plant designed to demonstrate safe and reliable, commercial electricity production. The construction is planned in four phases, each phase interspersed with a short operational campaign. The end of the first construction phase takes the facility to so-called "First Plasma" operation due in December 2025.   ITER is being constructed as a basic nuclear facility (Installation Nucléaire de Base, INB) under French legislation under the control of the Autorité de Sûreté Nucléaire, (ASN).

The project is being designed and built by the ITER Members: the European Union, India, Japan, the People's Republic of China, the Republic of Korea, the Russian Federation, and the United States. The device will be built in Saint Paul Lez Durance in south eastern France, with the European Union being the host party. The ITER Organization (IO) is the nuclear licensed operator and is responsible for the overall management and integration of the project and coordination between the Members. Each Member has its own Domestic Agency (DA) that is responsible for fulfilling its commitment to the Project. Approximately 90% of the direct capital investments for ITER will be provided free of charge to the IO i.e. by means of "in-kind" contributions, while the remaining 10% is procured by the IO using conventional procurement processes. All of the IO activities are primarily funded by the Members. The in-kind contributions are defined using an ITER specific Procurement Arrangement (PA) process.

The IO PCO is responsible for the development, implementation and management of an integrated ITER baseline and provides a full suite of Project Management (PM) functions in support of the ITER project. This includes direct support to the IO at Saint Paul lez Durance, France, the Project Teams throughout the project, and also support to the Domestic Agencies representing the ITER partners.

The project has completed the first transition from the engineering, procurement and manufacturing stage into the construction stage where the systems now are being delivered, assembled and installed on site. The IO PCO is accompanying the execution of construction and will during the contract duration transition into commissioning execution while still having to support several subprojects still in engineering, procurement and construction stages.

During the contract duration the PCO will with the contractor update the Construction Baseline (scope schedule and cost) as well as develop a fully integrated Baseline for the Operations Phase of the Project.

The objective of the Framework Project Management Services Contract is to provide the IO PCO with the requisite project management services necessary to plan and manage the ITER Project Baseline and to monitor, control and report the execution of the project work scope according to plan.

Project Management services will be required in the following different technical areas, each technical area will be coordinated by IO staff:

- *Planning & Scheduling Services*
- *Project Controls Management Services*
- *Cost Estimating Services*
- *Risk & Opportunity Management Services*
- *Project Baseline Change Control Management and Administration Services*
- *In-Kind PA Management and Administration Services*
- *Performance Reporting Services*

IO PCO seeks continuous improvement and efficiency gains with suppliers that bring added value in the transformation of project controls for Engineering & Procurement to project controls for Construction and then to Commissioning and Operations. An expected benefit from the Project Management Framework Services is flexibility of services, and deliverables. Availability of supplier expertise with reach-back for established processes, functions and supplier best practices to further drive continuous service improvement and efficiency gains will be one important criteria for the choice of supplier.

3   Estimated Duration

The period of services of the Framework Contract should be two years from January 2022 until January 2024 with the possibility to extend it for a maximum of three additional periods of one year each.

4 Acronyms

DA: Domestic Agencies
DWS: Detailed Work Schedule
IO: ITER Organization
FBD : Finance and Budget Division
kIUA: kilo ITER Unit of Account
OBS: Organisational Breakdown Structure
PA: Procurement Arrangement
PBS: Plant Breakdown Structure
PCM: Project Controls Management
PCO: Project Control Office
PCR: Project Change Request
PM: Project Management
PRMS: Project Management Reporting System
R&O: Risk and Opportunity
SAP: Systems, Applications, and Products
TRO: Technical Responsible Officer

WBS: Work Breakdown Structure

5   Scope of Work

The selected Contractor will have to provide Project Management services to the IO PCO, for the planning, monitoring, managing, controlling and reporting of the ITER baseline execution performance and the management and administration of the in kind procurement arrangements.

The contractor executing the scope of work described will follow IO PCO approved framework of management plans, policies, procedures, work instructions and guidelines. Note that often this framework deviates from usual project control practice due to the unique governance of the ITER project. The ITER Project Management Plan sets out the main governance and process framework (see reference no 1).

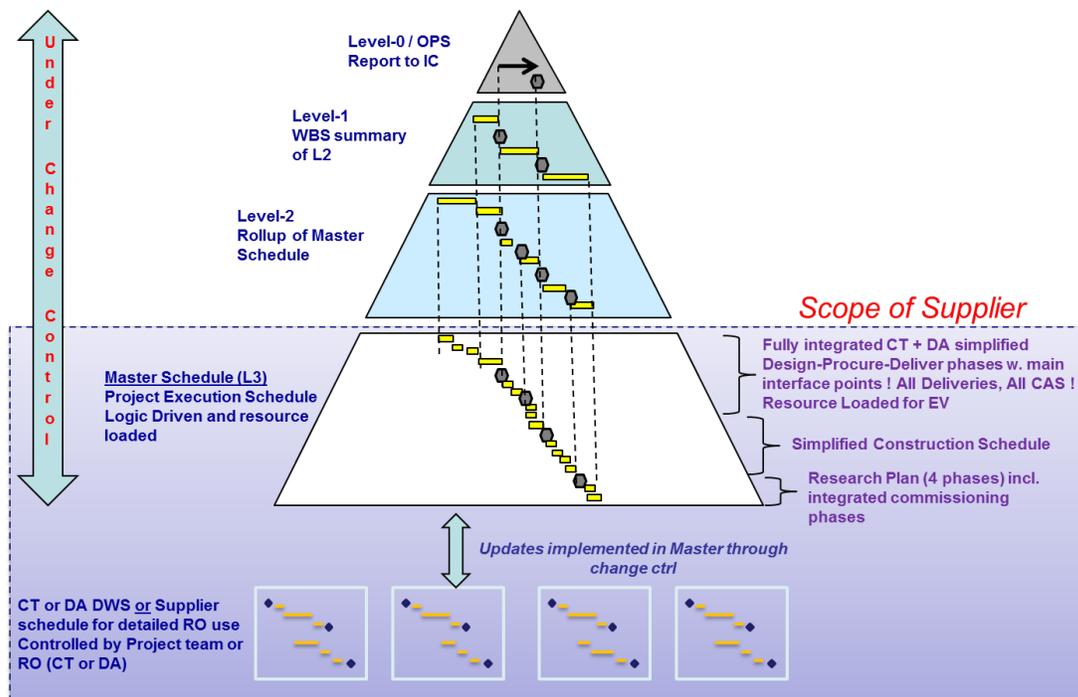The IO baseline structure is illustrated in figure 1 below.

Figure 1 – ITER baseline structure

IO PCO follows a monthly progress update and reporting cycle. The relevant monthly tasks have to be completed respecting this calendar.

The PCO is solely responsible for the upper levels of the baseline and have defined interfaces within each technical area for the handoff to the Project Management Services contractors. The PCO has staff assigned leading each area of the baseline development, monitoring and control for each technical area and the associated execution of contractor work

The anticipated level of service personnel defined for each technical area in Section 5 below is the current estimate from IO PCO. The volume of activities will be further detailed in the Technical Specification provided for the Call for Tender, allowing refined assessment of the level of service personnel at this stage.

The different Technical Areas are further described in the next sections.

5.1 Planning & Scheduling

The required Planning and Scheduling services shall support the development, maintenance and execution of the time-phased, resource-loaded Master Schedule for the ITER work scope through direct interface with the assigned technical programs.

The Master Schedule reflects the integration of scope, schedule, and cost, and is used for work forecast, earned value performance measurement, analysis, and reporting as well as for baseline change management. The Master Schedule is under formal change control. It is developed and maintained by the ITER Organization using Primavera P6 software. It is developed and maintained with a rolling wave approach with work packages in the execution year N and N+1, and planning packages in the future years.

It is further underpinned by IO and DA Detailed Working Schedules (DWS) and Supplier Schedules, which are the detailed execution plans for IO and DA procurements for specific systems and components. The DWS are not under formal change control.

The required Planning and Scheduling services include:

- The integration of IO, and DA elements of the scheduling system, monthly forecast analysis of the integrated schedule, maintenance of the schedule baseline, reporting schedule status against the baseline to the Technical Responsible Officers (TROs) for their assigned WBS area and IO management.

- The management of monthly progress updates, critical path analysis and studies and implementation of formal changes to their respective WBS elements within the Master Schedule and the DWS.

- The loading and maintenance of resources and expenses in the Master Schedule.

- The maintenance of Primavera and planning information in the other PCO related systems such as:

    o The Issue Management Database

    o The Project Risk and Opportunity Register

    o The DWS Inter-Correspondence Management System

    o The Project Management Reporting System

In addition to the Master Schedule and DWS, Planning and Scheduling services cover the the development and management of additional working level schedules as directed by their respective Project Controls Manager as well as detailed scheduling work for on-site installation and commissioning activities.

A Detailed installation plan for Post First Plasma (post 2025) work will be developed

The Planning and Scheduling task also includes the monthly cycle administration and internal data transfer to and from the scheduling system as well system/user administration of Oracle Primavera.

Other scheduling tasks and systems, for instance 4D planning for specific sub-project studies, may be added to the scope during the execution of the contract.

It is anticipated that there will be a need of between 10-20 Schedulers to execute this service (varying over time).

5.2 Project Controls Management

Project Controls Management refers to the integration of development and management of the baseline scope, schedule, cost and risk for assigned areas of the WBS. This includes baseline development, baseline performance measurement and reporting (using earn value management), and baseline change control during all phases of the project for assigned areas of the Work Breakdown Structure. These assigned areas are currently aligned at subproject level of the WBS to provide direct matrix support to each subproject.

A major element of these services includes support to the Technical Responsible Officers (TROs) in the budgeting, scheduling, estimating and risk and opportunity management for their respective specific WBS areas. Specifically the PCM service will produces a manual update of the Estimate at Completion and recruitment planning once per year, budget cycle support twice per year, and monthly variance analysis and reporting in support of their assigned WBS.

The PCM service will lead the update of the Baseline for Construction and the development of the Baseline Operations, integrating scope, schedule and cost and coordinating the Schedulers, Cost estimators and PA RO's for their assigned WBS,

It is anticipated that there will be a need of between 3-8 PCMs to execute this service (varying over time).

5.3 Risk and Opportunity Management

The IO PCO is responsible of the development and monitoring of ITER's capabilities on Risks and Opportunities (R&O) by implementing methods, processes, tools and governance rules for R&O identification, assessment, prioritization and management planning, R&O reporting, R&O analyses as well as R&O response planning, monitoring and controlling.

There is a dedicated ITER Project Risk and Opportunity Register (PROR) to support R&O Management activities within the ITER Project. The Contractor will be responsible for maintaining the PROR by performing regular quantification of event R&Os, standardisation of event R&Os assessment across IO and DA, and to embed routine R&O reviews and their status update. The Contractor will provide support to PBS ROs as a R&O expert in reviewing existing R&Os, identifying, assessing and recording new event R&Os and in monitoring the implementation of response plans.

The R&O assessments will be used as a management tool to optimize the project baseline planning and to prioritize key project activities and mitigation actions. The R&Os will be identified and quantified using an approach described in the Risk and Opportunity Management Procedure.

The Contractor shall also perform Quantitative Risk Analysis -"Monte Carlo" simulations-using Primavera Risk Analysis software to identify potential areas of high risk and uncertainty and to calculate the appropriate amount of time and cost contingency that the project should retain. This is done once a year.

It is anticipated that there will be a need of between 2-5 R&O managers to execute this service (varying over time).

5.4 Cost estimating

The Contractor will have to provide support for the development of high quality cost estimates that capture the resource quantities and predict the expected costs required to complete IO work scope. It will include the development and implementation of estimates for the WBS areas they are assigned to.

New estimates are used for project change request, procurement tender purposes and for updating lifecycle baseline. They include costs for labour, material, equipment, subcontracts and other direct costs. They are developed and maintained in a cost estimating database. Typical cost estimate data includes: scope descriptions, assumptions and exclusions, basis of estimate, stage of definition and methodology, drivers and reference documents, and resource estimate detail. Principles of cost estimating are based on the AACE and GAO standards.

The Contractor will have to review and validate cost estimates prepared by IO technical Departments and support the TRO's and IO procurement officers in contract negotiations

It is anticipated that there will be a need of between 3-7 Cost Estimators to execute this service (varying over time).

5.5 Project Baseline Change Control

The IO PCO is responsible for maintaining baseline configuration control using established changed management procedures. Baseline change management ensures that changes to the approved baseline (i.e., technical, scope, schedule, and cost) are documented and approved as required by the ITER Organization.

The baseline change management process consists of defining the change and assessing its impact (including risk) on the project's scope, schedule, cost and technical design; obtaining required approvals; and implementing the change into the baseline.

A project change request is prepared and processed through the appropriate change boards depending on change threshold criteria. Changes to the baseline will be developed, reviewed, and approved in accordance with the established ITER Project Change Control procedure and PCO Working Instructions. Changes to the Procurements Arrangements and In-Kind credit allocation for the in Kind contributions fall under project baseline change control.

The Contractor will have to administrate the change control process within PCO assuring that changes are correctly handled by the responsible Project Controls Managers, Planners, and Cost Estimators. The Contractor will also have to support the Planning and scheduling by implementing approved changes into the Primavera Baseline schedules. Analysis of proposed changes for eligibility to additional funding from the Reserve Fund under IO governance rules is part of the Change Control tasks done by the Contractor.

A specific sub task on Baseline Change control is to execute the change control process for the Finance and Budget Division in the tracking and implementation of the Reserve Fund, including recording transactions, preparing reports, and implementing Commitments and Payments in SAP and the tracking of the Overall Project Cost through recording and reporting of all Level 0 PCRs impacting Procurement Allocation Refinements or IO Cash Budget allocations.

It is anticipated that there will be a need of between 2-4 Change Control contractors to execute this service (varying over time).

5.6 In-kind Procurement Arrangement Management and Administration

Under the coordination and guidance of the IO PA Coordinator and in collaboration with IO PA ROs, the contractor will have to manage and administer In-Kind PA, information, documents and systems. The management and administration are two distinct sub tasks.

a. In-kind Procurement Arrangement Management

Manage the In-kind Procurement Arrangements (PA) for assigned PBS/WBS and all signed and planned PA within that scope according to PA procedures.

It includes the PA Preparation and the coordination of their signature according to the agreed planning. It covers the coordination of the PA preparation team, the production and negotiation of the PA documents, and the follow-up of ongoing PAs ensuring they are under full configuration control, PA documents are amended as required, deliverables are accepted and credit is released in a timely manner

b. In Kind Procurement Arrangement Administration

It includes the PA administration including the maintenance, follow-up and reporting. The Contractor is administering the PA Database and maintaining the PA data configuration, tracking deliverables and credit for planned and achieved work.

It is anticipated that there will be a need of between 2-5 Contract officers to execute this service (varying over time).

5.7 Performance Reporting

The Performance Reporting Service is responsible for producing integrated monthly and bi-monthly Project Performance Reports to the senior level meetings and stakeholders. The Service collates inputs for these reports primarily from the PCM and Scheduling Service, and DAs for identified key deliveries and milestones, as well as from corporate IO functions for transversal KPIs.

The service manages the Red Flag process identifying the need and coordinating the follow-up of the actions required to resolve issues with schedule between delivery client and user (IO or DA). Where required the service escalates such issues to Senior Management.

The service is also responsible for the preparation of standard cascade reporting for the IO against the OBS hierarchy, and coordinating the monthly update of the reporting system for specific KPI on key selected milestones, Physical Percent Complete and IO EVM.

It is anticipated that there will be a need of between 1-2 Performance Reporting contractors to execute this service (varying over time).

6   Experience

The below detailed experience per service area is considered necessary to perform the required tasks. It will be further refined in the next stages of the Call for Tender.

6.1   Planning & Scheduling scope

- development, maintenance and execution of complex schedules in an enterprise multi-project environment with Oracle Primavera P6.
- rigorous change control process and management of schedule baselines with Primavera.
- experience in the management and administration of Oracle Primavera in a multiple user / multiple role environment.

6.2   Project Controls Management scope

- experience in the implementation and management of large complex projects using ANSI 748 or ISO 21508 Earned Value Management to measure, analyse and report project performance.
- Certification by PMI, APM, PRINCE or equivalent and knowledge of P6 and SAP is preferred.

6.3   Risk and Opportunity Management scope

- wide experienced in risk analysis for complex projects from a strategic level.
- experience in the development and implementation of risk and opportunity mitigation actions.
- Experience with risk modelling systems such as PertMaster and AtRisk

6.4   Cost Estimating scope

- experience in the implementation and management of large complex projects using Earned Value Management to measure and report project performance.
- Certification by AACE or ICEC or equivalent and knowledge of P6 and SAP is preferred.
- Experience with Cleopatra cost estimating software is preferred

6.5   Project Baseline Change Control scope

- experience in the execution of integrated baseline change control for Scope, Schedule and Cost for complex projects using Earned Value Management, administrating and executing the evaluation, approval and implementation of changes.

6.6   In Kind Procurement Arrangement Management and Administration scope

- experience of management of requirements, deliverables and contracts for complex engineering projects.

- experience of project execution in large international scientific collaborative projects.

- experience in assistance to contract management and/or project management in large engineering or construction projects;

6.7   Project Performance Reporting scope

- Experience in the implementation and management of large complex projects using ANSI 748 or ISO 21508 Earned Value Management to measure, manage, control, and report project performance. Comprehensive understanding of EVM and Project Management KPI and their significance in Project Performance Reporting;

- Extensive rigour in data manipulation and traceability of calculations and expertise in use of Microsoft applications suite for tables, charts and graphs.

7   Contract Organisation

One single framework contract covering all technical areas will be awarded. Following the contract award, Task Orders will be issued for the execution of the contract. All the services requested in the frame of the contract will be detailed in the Technical Specification, and the scope of the Task Order will refer to it.

The cost of the Task Order will be defined based on the units prices agreed at the contract awarding.

8   Conflict of interest

In order to avoid conflict of interest or unfair competitive advantage, the selected company (or consortia) should be aware that the involvement in the activities covered by this Contract may be the cause of exclusion from their participation in the execution of the planned scope of work in the ITER project in relation with these Contract.

9 Timetable

The tentative timetable is as follows:

Call for nomination submission	Beg. May 2021
Pre-qualification and Tender submission	End of June 2021
Award notification	November 2021
Contract placement	December 2021
Task order 1 placement	January 2022

10 Candidature

Participation is open to all legal persons participating either individually or in a grouping (consortium) which is established in an ITER Member State. A legal person cannot participate individually or as a consortium partner in more than one application or tender. A consortium may be a permanent, legally-established grouping or a grouping, which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization.

The consortium groupings shall be presented at the pre-qualification stage. The tenderer's composition cannot be modified without the approval of the ITER Organization after the pre-qualification.

Legal entities belonging to the same legal grouping are allowed to participate separately if they are able to demonstrate independent technical and financial capacities. Candidates (individual or consortium) must comply with the selection criteria. The IO reserves the right to disregard duplicated reference projects and may exclude such legal entities from the pre-qualification procedure.