



## **Call for Nomination**

**Project Management services for IO Project Controls Office**

**Technical Summary**

## Table of Contents

<b>1</b>	<b>Purpose.....</b>	<b>3</b>
<b>2</b>	<b>Background and Objectives .....</b>	<b>3</b>
<b>3</b>	<b>Estimated Duration.....</b>	<b>4</b>
<b>4</b>	<b>Scope of Work .....</b>	<b>4</b>
<b>4.1</b>	<b>Planning &amp; Scheduling.....</b>	<b>5</b>
<b>4.2</b>	<b>Project Controls Management.....</b>	<b>6</b>
<b>4.3</b>	<b>Risk and Opportunity Management .....</b>	<b>7</b>
<b>4.4</b>	<b>Cost estimating .....</b>	<b>7</b>
<b>4.5</b>	<b>Project Baseline Change Control .....</b>	<b>8</b>
<b>4.6</b>	<b>Project Management Systems Administration.....</b>	<b>8</b>
<b>4.7</b>	<b>In-kind Procurement Arrangement Management and Administration .....</b>	<b>9</b>
<b>5</b>	<b>Experience .....</b>	<b>10</b>
<b>5.1</b>	<b>Planning &amp; Scheduling scope.....</b>	<b>11</b>
<b>5.2</b>	<b>Project Controls Management scope .....</b>	<b>11</b>
<b>5.3</b>	<b>Risk and Opportunity Management scope .....</b>	<b>11</b>
<b>5.4</b>	<b>Cost Estimating scope.....</b>	<b>11</b>
<b>5.5</b>	<b>Project Baseline Change Control .....</b>	<b>11</b>
<b>5.6</b>	<b>Project Management Systems Administration.....</b>	<b>11</b>
<b>5.7</b>	<b>In Kind Procurement Arrangement Management and Administration .....</b>	<b>11</b>
<b>6</b>	<b>Acronyms .....</b>	<b>12</b>
<b>7</b>	<b>Conflict of interest.....</b>	<b>12</b>
<b>8</b>	<b>Timetable .....</b>	<b>12</b>
<b>9</b>	<b>Candidature.....</b>	<b>13</b>

## 1 Purpose

The ITER Organization (IO) Project Control Office (PCO) intends to place one or several Framework contracts 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 these contract(s) 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 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 Sécurité 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 is currently transitioning from the engineering, procurement and manufacturing stage into the construction stage where the systems will be assembled and installed on site. The IO PCO is accompanying this transition and will during the contract duration (2019-2022) have transitioned fully into construction execution while still having to support several subprojects which will be in engineering and procurement stage.

The objective of the Framework Project Management Services Contract(s) 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
- Project Controls Management (PCM)
- Risk and Opportunity Management
- Cost Estimating
- Project Baseline Change Control for PCO and FBD
- Project Management Systems Administration
- In Kind Procurement Arrangement Management and administration

The technical areas can be awarded in one single framework contract or as separate awards for specific Technical Areas. The technical areas will then be ordered for yearly execution through yearly task orders. The complete procedure will be defined in the next stages of the call for tender.

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. An expected benefit from the Project Management Framework Services is flexibility of services, and deliverables. The geographic coverage of services may be extended to the sites of the DA's.

Availability of supplier expertise with reach-back for established processes, functions and established supplier best practices that can be used to further drive continuous service improvement will be one important criteria for the choice of supplier(s).

### **3 Estimated Duration**

The period of services of the Framework Contract(s) should be four (4) years, from November 2018 through November 2022 with yearly task orders issued for service execution by technical area for each execution year.

### **4 Scope of Work**

The selected Contractors 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 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.

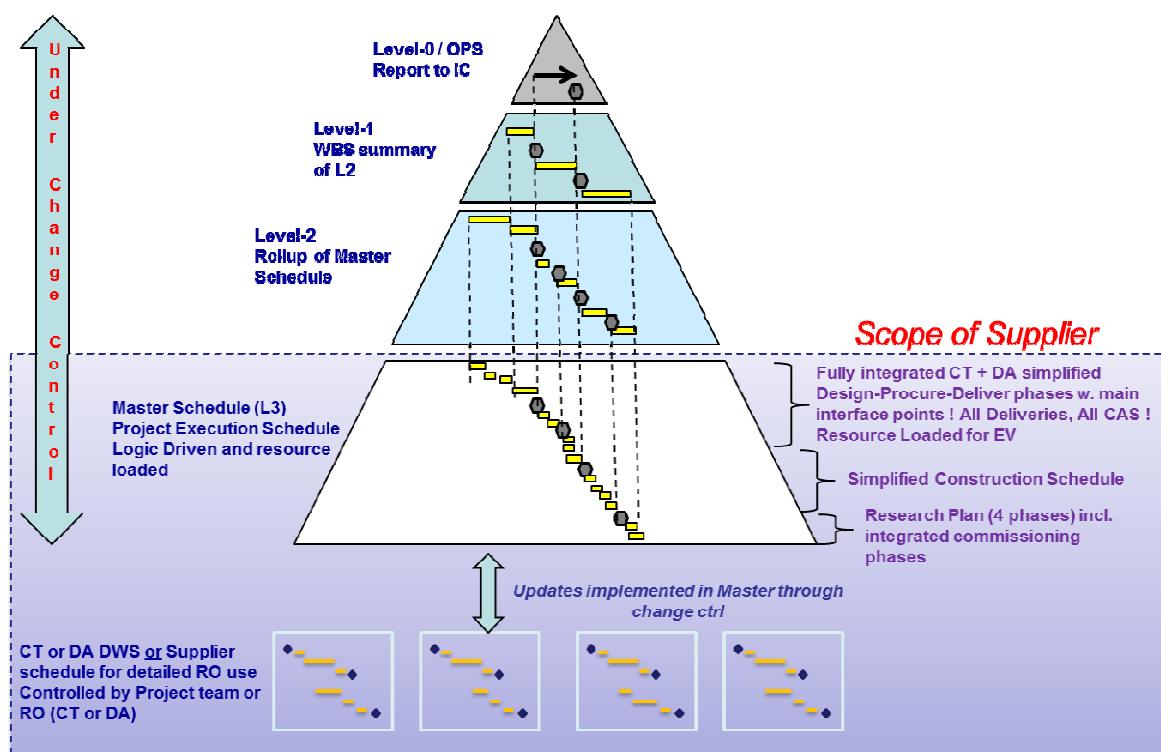


Figure 1 – ITER baseline structure

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 main location of the work will be Saint Paul lez Durance, France. Specific subtasks in the locations of the Domestic Agencies (Spain, India, Korea, Japan, China, Russia, USA) may be requested. They will be issued against specific task orders. In addition occasional travel to the DA and/or Supplier sites may be required. Full time presence of the personnel on the site of work is expected, however flexibility of onsite presence may be agreed by the IO. For some specific subtasks off-site execution may be permitted in which case it will be defined in the Technical Specification for the Call for Tender and Specific Task Order. The IO may accept demonstrated value adding sub tasks of the service being outsourced, as well as turn-key services being performed in a combination of on and off site.

The anticipated level of service personnel defined for each technical area 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.

#### 4.1 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 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:
  - The Issue Management Database
  - The Project Risk and Opportunity Register
  - The DWS Inter-Correspondence Management System
  - The Project Management Reporting System

In addition to the Master Schedule and DWS, Planning and Scheduling services cover the management of the higher tier planning documents including the Level 2, Level 1 and Level 0 (Overall Project Schedule), as well as the development and management of additional working level schedules as directed by their respective Project Controls Manager.

## 4.2 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.

#### **4.3 Risk and Opportunity Management**

The IO-CT 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-CT and IO-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.

#### **4.4 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.

## 4.5 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.

A specific sub task on Baseline Change control is to execute the change control process for the Finance and Budget Division in 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.

## 4.6 Project Management Systems Administration

The Contractor will have to provide technical support for the development, implementation, and maintenance of the ITER project management systems. These project management systems include Oracle Primavera (P6); Systems, Applications, and Products (SAP); Management Information System (MIS); Oracle Primavera Risk Analysis; Deltek Cobra, Cost Engineering Cleopatra Enterprise and the Project Management Portal and Scope Database (SharePoint). Other project management systems, for instance 4D planning tools, may be added to the scope during the execution of the contract.

It includes the following tasks:

- Definition of technical requirements for any system related development including the creation of interfaces among the ITER project management systems as described above
- Follow up and support to the IO IT division during the development phase for each requirement (IO IT division is responsible for the direct development work).
- Facilitation of the validation and testing of those developments by the PCO team as per the agreed requirements.
- Dedicated administration of those project management systems that are within the full responsibility of PCO (Oracle Primavera, Cost Engineering Cleopatra Enterprise and Deltek Cobra).

- Monthly cycle administration: internal PM system data transfer (P6/Cobra/SAP etc.) and update of monthly data and reports, including ensuring data consistency between the systems.
- Support in ad hoc data queries from project management systems for specific reporting purposes (using SQL and other data query techniques).

#### **4.7 In-kind Procurement Arrangement Management and Administration**

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

##### 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 following tasks:

PA Preparation and coordination of signature for future PA according to plan:

- coordinate the PA preparation team
- produce and agree management PA documents (Main and Annex A) according to templates, coordinate production and agreement of the technical PA documents;
- upload and track PA documentation for review and approval;
- prepare and organize PA signature and liaise with all relevant parties regarding the PA signature process;

PA execution follow-up for already signed PA:

- perform horizontal actions in relation to the PA process, e.g. Change Control, PA Amendments, etc.;
- develop, agree, upload and track PA Amendments, when needed;
- maintain overall consistency between schedule, credit and CAS of signed PAs;
- participate in updating of PA Procedures and Templates;
- assist in corporate reporting and actions in relation to audit/assessment bodies, e.g. FAB, Management Assessment, external and internal Audits, External Review Committees;

The anticipated level of service personnel is 2-3 for In-Kind PA Management.

### In Kind Procurement Arrangement Administration

- PA database maintenance, the Contractor shall maintain and update on a daily basis the PA Database to ensure reliability and accuracy of PA Data and information.
- Reporting, the Contractor shall prepare PA process and execution Status Reports periodically for IO high level Boards, Finance and Budget, Technical Departments, Communication, etc.
- Support to Procurement Arrangement Responsible Officer (PARO), the Contractor shall provide daily assistance to the PARO for administrative matter regarding PA preparation and follow-up.

### **5 Experience**

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

## **5.1 Planning & Scheduling scope**

- development, maintenance and execution of complex schedules in an enterprise multi-project environment with Oracle Primavera
- rigorous change control process and management of schedule baselines with Primavera.

## **5.2 Project Controls Management scope**

- experience in the implementation and management of large complex projects using Earned Value Management to measure and report project performance.

## **5.3 Risk and Opportunity Management scope**

- wide experienced in risk analysis for complex project from a strategic level.
- experience in the development and implementation of risk and opportunity mitigation actions.

## **5.4 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.

## **5.5 Project Baseline Change Control**

- 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.

## **5.6 Project Management Systems Administration**

- experience in the implementation and management of large complex projects using Earned Value Management to measure and report project performance.
- experience in the management and administration of Oracle Primavera and Deltek Cobra in a multiple user / multiple role environment.
- experience in Business Analysis and system requirements development and management. Experience in databases, data mining and data reporting.

## **5.7 In Kind Procurement Arrangement Management and Administration**

- 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 Acronyms

DA: Domestic Agencies  
DWS: Detailed Work Schedule  
IO: ITER Organization  
FBD : Finance and Budget Division  
kIUA: kilo ITER Unit of Account  
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

## 7 Conflict of interest

In order to avoid conflict of interest or unfair competitive advantage, the selected Companies (or consortia) should be aware that the involvement in the activities covered by these Contracts 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 Contracts.

## 8 Timetable

The tentative timetable is as follows:

Call for nomination submission	February 2018
Pre-qualification submission	March 2018
Tender submission	June 2018
Award notification	September 2018
Contract placement	October 2018

## **9    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.