Framework Contract

PLM Integration

Summary Technical Specification

Abstract.
This specification covers the supply of information technology, engineering and technical services to the ITER Organization for the implementation of a PLM project.

1. BACKGROUND AND OBJECTIVE

The Configuration Management Division (CMD) of the ITER Organization Central Team (IO-CT) is responsible for the implementation in IO (both CT and DA) of a PLM project, aiming at (a) defining and enforcing standardized systems engineering and configuration management processes, procedures, and (b) unifying corresponding supporting IT systems into a single platform. IO decided to use the platform "3D Experience" (also called Enovia v6) from the company Dassault Systems.

The objective of this Call for Tender is
- to select qualified companies with extensive experience in the required fields of work, and proven track records in the implementation, exploitation and maintenance of a PLM project based on Enovia v6 as well as the software platforms used by the ITER Organization, and
- to conclude the framework contract that will supply services in the implementation, exploitation and maintenance of the PLM project.

2. REQUIRED EXPERIENCE

The candidate companies shall have demonstrated capabilities in implementation, exploitation and maintenance of a PLM project with the Dassault System solution, for large and complex facilities, preferably in an international environment and in a complex contractual and organization setup (comparable to the ITER project). IOs cost containment objectives also favour companies with a proven track record of delivering projects on time and within budget. The specific experience and qualities sought by IO include:

- Expertise in customization of the Dassault System Solution Enovia v6
- Expertise in the integration of the Dassault System Solution Enovia v6 into complex IT landscape (see below)
- Implementation of PLM project in large, multi-disciplinary projects and in an international environment;
- Integration of the PLM to support design and systems integration;
- Experience of implementation and use of a PLM during design & engineering as well as during construction phase;
- Capability to mobilise and manage centralised, site-based resources, and also to establish and manage satellite facilities for remote working;
- Proven track record of delivering projects on schedule and within budget;
- Ability to respond rapidly to changing resource requirements, to accommodate peak demands, and to provide specific expertise.

The current configuration management information system as well as design and engineering capability of the ITER Project, comprising IO and the Domestic Agencies, has been developed around specific software applications. The engineering analysis and integration services to be provided under the framework contract shall be executed in this environment, and accordingly, the candidate contractors shall have demonstrated knowledge of the listed software and proven experience of integration of a PLM solution compatible with the landscape described in the next section.

3. CONFIGURATION MANAGEMENT INFORMATION SYSTEM AND IT LANDSCAPE

Current information management system: a distributed system consisting of
- For CAD: Enovia v5
- For Requirement: Rational Dynamic Object Oriented Requirements System (DOORS)
- For 2D: SMDD

- For integration 2D/3D and product breakdown management: home solution (EBD)
- Several part catalogs (SPMat, CADENAS, etc.)

Computer Aided Design

- CAD & catalogues: CATIA V5 (Mechanical + E&S modules)
- CAD mechanical catalogues: CADENAS
- Plant design: PDMS, CATIA V5
- CAD data-base: ENOVIA LCA (Life-Cycle Activities) – VPM V5
- 3D-Live: ENOVIA LCA Viewer
- Assembly & maintenance simulation: DELMIA
- 3D Illustration: 3D-VIA-COMPOSER
- Dedicated process description software (IGE-XAO Visio based, to produce in particular PFD, P&ID…) and associated data-base: See-System-Design (SSD); See-Electrical-Expert and See-Cabling-Manager (or equivalent)
- CAD quality checking: Q-CHECKER
- Isometrics: ISOGEN
- For remote work, the CAD activities must be performed in data sharing mode. The connection to the IO data-bases shall be made via:
  - Teradici or VPN for ENOVIA. If the distance with IO exceeds 1000-1500 km, the Company will connect to the closest DA (DA approval being a pre-requisite)
  - CITRIX for SSD
  - Web for 3D-Live, IDM, EDB

Structural Analysis

- ANSYS Classic
- ANSYS Workbench
- Hyper-mesh

Other analysis software

For specific analyses / functions, the following software packages have been successfully utilised by ITER, and experience with these packages would be considered an asset. However, experience in the TYPES of analysis listed is a requirement.

- PIPE-STRESS and CAESAR II, for piping analysis
- FLOW-MASTER, for hydraulic analysis
- 3DCS, for 3-d tolerance analysis
- OPTICS, for diagnostics optical analysis

Construction

- Intergraph SmartPlant® Materials SPMat
- Intergraph Smartplant For Operator

4. SCOPE OF WORK

Under the proposed framework contract the contractor will provide services to the ITER Organization on the Cadarache Site, and at remote locations as required by the Organization, to reinforce capability in the fields for implementing a PLM project. The four main areas of work will be:

Area 1): Service to IO in the process definition and in the conception/choice of the technical implementation (based on capabilities of tools, known working data models, etc.),
Area 2): Administration & Customizing of the Enovia v6 platform
Area 3): Specific programming (if required) of missing functionalities of the Enovia v6 platform
Area 4): Integration and interface of the platform with ITER information system.

5. QUALITY ASSURANCE REQUIREMENTS

For the entire duration of the framework contract, Contractors shall hold, and maintain, a valid and relevant ISO 9001 and 14001 certification or comparable.

The missions and tasks executed under this framework contract shall be carried out in compliance with the ITER CAD Manual, and the IO Quality Requirements.

6. CONTRACT BASIS AND EXECUTION

The PLM integration of the ITER project will be procured via framework contract.
Task Orders will be issued by work area on deliverable basis.

The ITER Organization will award the framework contract and first batch of Task Orders in October 2015. The initial award will be for a 2 year period, with an option of 2 further years.

The implementation plan of the PLM over the potential 4 years timespan preclude the accurate prediction of resource requirements. However the indicative levels of resources required to cover all areas of work are:
  ➢ Enovia v6 specialists: tentatively between 1-3 PPY per year
  ➢ PLM specialists: tentatively 0-2 PPY per year
ITER may require the contractor to perform the work either on the ITER site, at a close support locations to be established and maintained by the contractors within easy reach of the ITER site, and at remote locations such as the contractor's usual place of business. In the case of off-site CAD work, the contractor will be required to implement connection schemes to be defined, to utilise data sharing mode.

The working language of ITER is English, and a fluent professional level is required (spoken and written).

7. PREQUALIFICATION REQUIREMENTS

The pre-selection criteria for this Call for Tender shall include, but shall not necessarily be limited to the following requirements, supported by appropriate references:

- Established company with a minimum of 10 years demonstrated experience in providing similar services to large (more than 300 Million Euro), complex international projects, and preferably covering the design, construction and commissioning phases.
- Proven track record of delivering projects on time and within budget.
- Experience in remote collaboration techniques, and implementation of database sharing schemes based on the software packages listed in section 3.
- Demonstrated experience in the successful implementation of Enovia v6 based PLM
- Ability to supply the indicative number of experienced specialists for the various areas, enabling a high level of flexibility in service providing, depending on changing IO needs,
- Company QA system and engineering processes acceptable to ITER (see section 5 above).

- Significant customer base in relevant fields, and satisfactory list of references.