Technical Specification

Summary Technical Specification - Requirement Management Framework Contract

The following document provides the basic requirements to initiate the procurement of Requirement Management Services as part of a Call For Tender Process.

Approval Process			
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Framework Contract

Requirements Management and Verification Activities

Summary Technical Specification

Abstract.
This specification covers the supply of engineering and technical support services to the ITER Organization in the areas of Requirements Management and Verification Activities.

1. BACKGROUND AND OBJECTIVE

The ITER project aims at demonstrating the scientific and technological feasibility of fusion power for peaceful purposes and to gain the knowledge necessary for the design of the next stage device.

The ITER project is organized as an international research and development project jointly funded by its seven Members; the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA.

ITER is being constructed in Europe, at Cadarache in Southern France, which is also the location of the Headquarters of the ITER Organization (IO).

During ITER construction, most of its components will be supplied "in-kind" by the ITER Members. These in-kind contributions are being managed through a Domestic Agency (one per ITER Member) located within the Member's own territory.

Within the Central Integration Office, the Configuration Management Division (CMD) ensures the following missions and process ownership:

- Technical Configuration management;
- Document & Records Control;
- Design Control;
- End-Product Quality Control (Inspection and testing).

The Design Control relies on the definition of design processes and production of design management plans, and surveillance of the correct use of the processes and accuracy of input/output data within the design organization .

Requirement Management is one of the processes to control the design development, including the Requirements Verification &Validation activities.

The objective of this **Call for Tender** is to select qualified companies with extensive experience in the required fields of Requirements Management and Verification Activities, and proven track records in the implementation, exploitation and maintenance of the software platforms similar to those used by the ITER Organization.

2. ABBREVIATIONS

CMD: Configuration Management Division
DA: Domestic Agency
DCM: Design Compliance Matrix
INB: Installation Nucléaire de Base (Class of Nuclear Facility in France)
IRDRMFAO (IBM Rational DOORS Requirements Management Framework Add-On
(additional layer on DOORS platform – former TREK layer)
RPM: Requirement Propagation Matrix
RQS: Requirements Quality Suite (application to check and improve requirement definition, and status reporting
V&V: Verification and Validation

3. REQUIRED EXPERIENCE

The candidate companies shall have demonstrated capabilities in the development of bespoke Requirement Management and Verification processes and procedures, their implementation as processes in a database and the management of the database itself with

the training of the users and support to the users in a multisite, globally distributed organization.

The 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:

- Implementation of large, multi-disciplinary projects, in an international environment;
- Requirement management development and verification methodologies;
- Experience of internationally recognized QA and safety standards, preferably in a nuclear environment;
- Experience of international construction codes, preferably nuclear;
- Experience of international construction codes, during construction phase;
- Deliverable fix priced implementation of activities;
- 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 established design and engineering capability of the ITER Project, comprising IO and the Domestic Agencies, has been developed around specific software applications that have been or are being validated by IO. The contract shall be executed using these software packages, and accordingly, the candidate shall have demonstrated capability in the implementation and application of the software packages relevant to their proposed areas of work:

- DOORS (IBM Company) for requirements data management
- IRDRMFAO (IBM) for requirement or equivalent
- RQS requirement Quality Suite (Reuse Company) or equivalent

4. SCOPE OF WORK

Under the proposed framework contract the contractor will provide support to the ITER Organization on the Cadarache Site, and at remote locations as required by the Organization, to reinforce capability in the fields of requirement management services for the definition and implementation of the processes in the RMVDB and support to the various RMV stakeholders.

4.1 Definition and implementation of the processes

- Assist **CMD (process owner &process manager)** on requirement propagation control, including monitoring of the execution and reporting using RMVDB to:
  - o Document and continuously improve the process: development of the Requirement Management process, data model and procedures, guidelines and how-tos for the planning, execution (capture needs, decomposition, allocation, definition and quality of requirements and rationale/justification, linkage and tracking, integration) , verification and validation, changes, improvements…;
  - o Implement the process in interface to or inside the existing tools (IDM –ITER Document Management System-, spreadsheets, Engineering Data Base and

Product Lifecycle Management ENOVIA V6).Prepare enhancement planning and incorporation (as add-ons) of new functionalities on the current RMVDB (functional specifications, selection of options, development/monitoring of development, testing and acceptance before production);

- o Train users: organization of training sessions (prepare procedure, trainee's computers for use, documents and slides, monitor logistics, collect attendance list and training certificates);
- o Verification of the RO's work from process point of view: checklists for process quality, maturity indicators;
- o Monitor and Report: specification of the needs, develop and improve tools: dashboards, prepare reports and process indicators, proposal for improvement;
- o Support users: User's manual, detailed instructions, practical modules …

4.2 Support to the various RMV stakeholders

- Assist **the various users** for the execution of the processes using RMVDB; i.e. when performing tasks to:
  - o Support technical execution (loading of requirements, loading of suppliers' data, definition and management of attributes for control) by Technical Responsible Officers (Integration ROs, Systems ROs) within the ITER project for their [prepare RMV plans, upload in/export from DOORS specifications as WORD documents or EXCEL documents and pictures, requirement analyses, requirement definition, allocation and propagation, monitoring, Requirement V&V, compliance of their design, and tracking impacts from Project Change Requests (PCR), Non Conformities and Deviation Requests (NCR & DR);
  - o Support technical acceptance work (loading and formatting of data for acceptance) by Transverse Function- Responsible Officers;
  - o Prepare input for V&V: RPM matrices, DCM matrices, CN matrices …);
  - o Prepare process data for reporting.

- Assist **the database administrator** i.e. in his/her tasks to:
  - ➢ Coordinate database use:
    - o Define or improve architecture of the various modules within RMVDB
    - o Manage User and groups in DOORS
    - o Control configuration and optimize User file management;
    - o Manage Folder access rights in DOORS;
    - o Maintain and promote DOORS quick start training ;
    - o Prepare the DOORS database status;
    - o Assist in the Management of DOORS and coaching users.

  - ➢ Provide technical assistance to the DOORS users:
    - o Pre-processing of technical specifications in MS Word ;
    - o Import from MS Word, MS Excel or .dma format to DOORS and post-processing in DOORS;
    - o Coach users on how to import in DOORS and verify the quality of the imports;
    - o Export to MS Word or Excel format, and upload in the document management system (IDM or PLM).

  - ➢ Provide technical assistance to database upgrades and migrations:
    - o Propose Data Model evolution;
    - o Follow-up DOORS and IRDRMFAO software upgrades implementation;

   o Follow-up DOORS Common tool and add-ons evolution (including development and validation);

   o Preparation of coaching sessions (mainly DOORS environment preparation).

5. TYPE OF PROFILES FORESEEN

- **<u>Junior Profiles (2-5 years relevant experience)</u>**: Master level engineers with very good knowledge of DOORS, DXL and VBA programming as well MS Word and MS Excel;

- **<u>Experienced Profiles (5 to 10 years relevant experience):</u>** Master level engineers with good knowledge of Systems Engineering methodologies, in particular requirements management & verification; Good knowledge of Configuration Management methodologies; Experience in large technological projects (Nuclear, Space, Aeronautics, etc…); Sound experience using DOORS; Sound use of MS Word and MS Excel; Experience with DXL; Experience with VBA; Very good Team work capabilities;

- **<u>Senior/Expert Profiles (more than 10 years experience):</u>** Same as experienced profile plus very good command of English (procedure writer capability); very good communication skills; longer experience.

6. SAFETY

This activity is classified "Protection Important Activity" for the Design and Construction of the ITER INB Facility.

The Contractor will be required to demonstrate competence of their personnel in the RMV matters, the use of approved processes and their ability to undertake this work in this Nuclear Safety context (e.g. Nuclear Safety Culture training, provision of a Quality Plan).

7. QUALITY ASSURANCE REQUIREMENTS

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

The missions and tasks executed under these framework contracts shall be carried out in compliance with the all Systems Engineering or Configuration Management procedures and best industrial practices.

8. CONTRACT BASIS AND EXECUTION

The services will be procured via framework contracts. Only one contract award is anticipated for the scope of these services.

Following Contract award, Task Orders will be issued based on Deliverable based Technical Specification further detailing the scope of work and the outputs expected from the contractor.

The ITER Organization will award the framework contract and first batch of Task Orders in parallel. The initial award will be for a 3 year period, and one option of 2 further years are foreseen.

Time dependent resource profiles, and uncertainties related to Project scope over the potential 3 year timespan of the framework contracts preclude the accurate prediction of resource requirements.

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 work, the contractor will be required to propose and implement a suitable connection scheme.

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

9. PROCUREMENT SCHEDULE

Procurement Schedule	Tentative Dates
Call for nominations	9 August 2016
Receipt of nominations	9 September 2016
Prequalification launch	13 September 2016
Receipt of Prequalification	18 October 2016
Issue call for tender	4 November 2016
Tender submission due date	9 December 2016
Estimated Contract Award date	16 January 2016
Estimated Contract Start Date	6 February 2016