Technical Note

Support services in Systems Engineering, Configuration Management, and, Processes and Documentation Management at F4E

Abstract

This document is an introduction to the specifications for support services in Systems Engineering, Configuration Management and Processes and Documentation Management at F4E in view of the upcoming procurement procedure.

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Applicable documents

NA

Reference documents

NA
1. INTRODUCTION

The ITER project aims to build a fusion device, with the goal of demonstrating the scientific and technical feasibility of fusion power. It is a joint project between the European Union, China, India, Japan, South Korea, the Russian Federation and the USA. Most of the components that make up the ITER project are to be manufactured by each of the ITER members and contributed in-kind through Domestic agencies including “Fusion for Energy”. F4E is the European Union’s agency for ITER and development of Fusion Energy. The ITER machine is being constructed in Cadarache in the South of France.

For such a large scientific and technical project, systems engineering and configuration management methodologies have to be put in place to ensure the consistency and control of design and manufacturing requirements together with verification data during the different phases of the project.

In addition, F4E as a major European procurement agency must internally implement and maintain a series of processes and tools including for documentation management.

2. SCOPE OF WORK

F4E is planning to launch a procurement procedure for the provision in F4E premises of in-house support services for its Systems Engineering and Configuration management activities. The procurement procedure is divided into three lots. Tenderers can submit offers for one or multiple lots. Each individual lot will result in separate framework service contracts in cascade with a maximum of three operators.

1. Lot 1: Support services in Systems Engineering and Configuration Management

   The scope of this lot is to provide support in:

   - **Requirements Management and Verification** (RMV): it will mainly include insourcing manpower and expertise to support the RMV process in F4E and in IO CT (IO Central Team). This includes implementation and development of DOORS (requirements management database).

   - **Configuration Management**: mainly including insourcing manpower and expertise to support the F4E Configuration Management activities.

   The volume of activities expected is of about 5 engineers full-time for the duration of the contract.

   The services will be provided in F4E premises.
2. **Lot 2: Support services in maintenance and improvement of the MIR layer**

To control the exchange of requirements data between the F4E DOORS database and the DOORS databases of the F4E partners, F4E developed two key components:

- the **MIR DM** (Manage ITER Requirements Data Model) that is the customization by F4E of the IRDRMFAO (IBM Rational DOORS Requirements Management Framework Add-On) generic data model, that is to say the DOORS module templates, the types, the attributes, the views and the relationships.

- the **MIR Toolkit**, a set of additional resources to follow the RMV process in a tooled environment.

The MIR Toolkit is a .zip file containing DOORS DXL scripts and various Microsoft Word and Excel templates with VBA macros. MIR Toolkit v11 contains about 55,000 lines of DXL code and 1,600 lines of VBA code.

The MIR Toolkit appears as an additional menu in DOORS with new functions. Among these new functions we find:

- the "Cockpits", a companion to smoothly guide the user through the RMV process.

- "Manage Baselines" to automatically fill baseline suffix and description and build baseline sets according to triggering events.

- the "MIR Diagnosis Tool" to scan a database and assess the progress with regards to the RMV process through the computation of various Key Performance Indicators.

- an automatic migration of a module from a MIR DM version to another.

- an object explorer to analyse impacts.

- Word-to-DOORS and Excel-to-DOORS import tools optimized with the usage of the F4E Word and Excel templates.

- a DOORS-to-Word export tool based on the IRDRMFAO WEXP (Word Enhanced eXporter).


- an Analysis Transfer tool in the spirit of the IRDRMFAO Compare/Transfer mechanism.

- "Manage URL" to ensure that URL registered in the DOORS matrix will be clickable both in DOORS and in Excel.

The scope of this lot is to provide expertise support in DXL (DOORS eXtension Language) and Microsoft VBA (Visual Basic for Applications) for Excel for the maintenance and improvements of the MIR layer.

The volume expected is of 1 engineer full-time for the duration of the contract.

The services will be provided in F4E premises.
3. **Lot 3: Support services in Processes and Documentation Management**

The scope of this lot is to provide support in:

- **Document Management**: it will mainly include insourcing manpower and expertise to support F4E in the development, implementation and monitoring of the Documentation Management System (electronic document management systems and physical document management and archival).

- **Processes and Management System**: mainly including insourcing manpower and expertise to support F4E in the development and implementation of the process approach, the parametrization of processes in view of tools development and simplification, and optimization of related working procedures.

The volume of activities expected is of about 2 engineers full-time for the duration of the contract.

The services will be provided in F4E premises.

**3. SCHEDULE**

Launch of Procurement procedure estimated date: Q3-2016

Contract signature estimated date: March 2017

Contract duration: two years with a possible extension of two years.