china eu india japan korea russia usa

Summary

Call for Nomination

Services to design and supply Instrumentation & Control Technology for Mini-CODAC, Network Equipment, Plant System Host and Fast Controller

PURPOSE

The purpose of the Contract in question is to assist the ITER CODAC (Control, Data Access and Communication) group and its contractors in the design, acquisition, usage and integration of standardized technologies from an industrial and point of view. The requested support is expected to be instrumental in the successful deployment of the standards.

BACKGROUND

ITER Instrumentation and Control (I&C) System comprise the complete control, interlock and safety systems required to operate the ITER device. ITER I&C system has two layers, central coordination and local plant systems. The central systems are “in-fund”, i.e. procured by ITER Organization (IO), while plant systems are “in-kind”, i.e. procured by the seven ITER Domestic Agencies. It is expected there will be more than 160 plant systems. In order to ensure integration and maintainability, the instrumentation and control of plant systems are subject for standardization.

The technology choices made up to now include Siemens Simatic S7 programmable logic controller (i.e. Slow Controller), PCI Express based industrial and instrumentation computers and I/O bus systems (i.e. Fast Controller), IEEE-1588, EPICS (Experimental Physics and Industrial Control System) open source software tool kit, Linux, XML, as well as the application of industry standards like IEC 61226, IEC 61513, IEC 60880, IEC 61508 and IEC 62138.

Plant System Host (PSH) is a logical element in CODAC conceptual design, interfacing the CODAC control system with each plant system. It will be located within a Plant-System. Fast Controllers are carrying out typical I&C data acquisition and actuator management tasks. Mini-CODAC is another logical element which allows running a reduced set of CODAC control system during the construction, commissioning and maintenance of a plant system. The Mini-CODAC contains tools to manage the Network Equipment of the Plant System in the absence of the centralized management system.

SCOPE OF WORK

One Contractor's professional staff member is required to be on ITER site on regular basis. Part time expert resources are expected to be pulled in when needed. The services to be provided by the successful tenderer will include the following tasks:

- Technology integration support covering all aspects of integration of the standard technologies;
- Industrial integration support by covering purchasing, assembly and system integration work for all selected components
- Maintenance support covering all aspects of repairing and maintaining purchased and installed components.

DURATION

The framework contract duration shall be 3 (three years) The IO may exercise the option to extend these services for a maximum of one additional period of two years. ITER Organization shall establish the request for services on ad hoc basis and relative to the respective annual work plans.

TIMETABLE

The tentative timetable is as follows:

Call for Nomination	May 2010
Call for Pre-qualification	June 2010
Call for Tender	July 2010
Start of Contract	October 2010
Completion of Contract	September 2013

EXPERIENCE

The potential tenderers should have proven experience in the following areas:

- Skilled organization and staff in terms of Quality Assurance (possession of ISO 9001 and/or CMMI);
- Experience in integration of industrial control systems (> 1.000 inputs/outputs);
- Experience in the field of instrumentation;
- Maintenance of industrial control systems and computer equipment for a duration greater than 5 years;
- Knowledge of the technologies specified in the ITER standardization document, in particular Linux, EPICS, industrial computer form factors derived from the PCI-Express specification;
- Knowledge on communications and timing network protocols, such as 10 Gb/s Ethernet and IEEE-1588-2008;
- Knowledge on FPGA based data acquisition systems and their signal interfacing;
- Knowledge of installing and interfacing Siemens Step 7 series PLCs and their input/output modules;
- Experience of installing industrial rack mounted systems, D-rails, patch panels and such;
- Experience of manufacturing and configuring batches of identical industrial computer systems;

Additional Information

Participation is open to all legal persons participating either individually or in a grouping (consortium). 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 this stage at pre-qualification or at the latest at tender submission. The consortium groupings cannot be modified after presentation without the prior approval of the ITER Organization.

Further information on the ITER Organization procurement can be found at:

HTTP://WWW.ITER.ORG/ORG/TEAM/ADM/PROC/PAGES/WELCOME.ASPX