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EXTERNAL REFERENCE

Memorandum / Note

Technical Specification for Call for Expertise for Machine Protection Panel and CIS Manufacturing Support

The objective of this contract is to incorporate one electronics engineer or physicist to the Interlocks Team in order to provide support to the CSD Division on the management and resolution of the technical activities and actions set by the recently created Machine Protection Panel (MPP). The expert shall also contribute with 50% of his/her time to the final design and construction of the Central Interlock System V.1 currently under construction in Korea.

Approval Process			
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Read Access	**LG: CODAC team, LG: Interlock Team - Restricted, LG: Interlock Gang, AD: ITER, AD: External Collaborators, AD: IO_Director-General, AD: EMAB, AD: Section - CODAC - EXT, AD: Section - CODAC, AD: Section - Plant Control and Instrumentation, AD: Auditors, AD: ITER Management Assessor, project administr...**		

Change Log			
Technical Specification for Call for Expertise for Machine Protection Panel and CIS Manufacturing Support (QQXDSU)			
Version	***Latest Status***	***Issue Date***	***Description of Change***
v1.2	Approved	17 Feb 2015	Input from procurement included. Work description better detailed and skills sepparated in specific and general.
v1.1	Signed	17 Feb 2015	Duration of Contract Changed from 1+2 years to 1+1 year.
v1.0	Signed	17 Feb 2015	

1 Purpose and scope of the document

This document specifies the requirements for the Call for Expertise for Machine Protection Panel and CIS Manufacturing Support.

2 Background and Objectives

The Interlock Control System or ICS is the ITER control system in charge of implementing the investment protection functions. The CSD Division is the responsible at ITER of the design, construction and commissioning of the Central Interlock System.

The objective of this contract is to incorporate one electronics engineer or physicist to the Interlocks Team in order to provide support to the CSD Division on the management and resolution of the technical activities and actions set by the recently created Machine Protection Panel (MPP).

The expert shall also contribute with 50% of his/her time to the final design and construction of the Central Interlock System V.1 currently under construction in Korea.

3 Scope of Work & Services

The scope of the engineering support services requested in this specification covers the supply of one suitable and experienced expert to reinforce the ITER interlocks team on the following subjects:

As MPP support expert (50%):

- Coordinate, together with the MPP scientific secretary, the resolution of the technical actions identified by the Panel.
- Follow-up and maintain the MPP management tools (e.g. MPP action list, MPP SharePoint and IDM folders, etc.)
- Contribute as interlock and machine protection expert to the technical discussions related to the MPP activity.

As CIS design and procurement expert (50%):

- Contribute to the development of the CIS final design and the completion of its Final Design Review (FDR)
- Follow-up the contract(s) in charge of the final design, industrialisation and procurement of the Discharge Loop Interface Boxes (DLIB)
- Coordinate the activities related to the design and construction of the CIS Test Platform
- Provide support as electronics expert to the interlock team on the different development activities going on in IO and the Domestic Agencies related to the ITER interlocks
- Provide expertise to the ITER interlock team and its partners in IO and DA on instrumentation for protection of superconducting machines

4 Estimated Duration

The duration of services under this contract shall be for one (1) year with the option to extend it for one (1) more year under the same conditions.

5 Personnel and Work Description

The expert shall work on the ITER IO premises.

He/she shall organise and attend to technical meetings on different disciplines dealing with ITER engineers and scientists from different technical divisions. He/she will be responsible of ensuring that the actions and recommendations set by the Machine Protection Panel are properly addressed in the meetings. The expert will also be in charge of managing the related documentation and present some of the results during the plenary MPP meetings held monthly at ITER IO.

As member of the Interlocks Team, the expert will coordinate the works carried out by the suppliers for certain technical areas of the CIS such as the DLIB or the Test Platform, while supporting the other members of the team as electronics expert for the other areas involved on the design and construction of the system.

In order to perform the tasks described above the following general skills are required:

- Capability to work in the English language, both verbally and written
- Attention to detail
- Excellent inter-personal skills
- Ability to be consistent and work well under pressure
- Works with a team of highly motivated engineers and scientists to achieve goals and objectives
- Interface to virtual partner teams across the globe
- Responsible and accountable for delivery
- Ability to comprehend technical issues and to ensure they are appropriately addressed by others

6 Specific requirements

This Call for Expertise seeks in particular one (1) electronics engineer or physicist with the following profile:

- At least ten (10) year of experience on design, commissioning and/or operation of large scientific facilities, particularly on the area of machine protection and interlocks.
- Experience following-up industrial contracts particularly on the area of critical mission components.
- Experience on the organization of technical reviews in a scientific and international environment
- Good communication and negotiation skills. Ability to arbitrate between different scientific international teams towards the resolution of technical conflicts.

- Knowledge of different areas involved on the construction of superconducting tokamaks (e.g. coils, power supplies, HV instrumentation, radio-frequency, vacuum, cryogenics, etc.)
- Excellent technical communication and writing skills in English

7 List of deliverables and due dates (proposed or required by ITER)

Two (2) progress reports shall be issued in a 6-month basis. Each report shall detail the progress and status of the work carried out for each activity provided by supplier under this contract. The work load for each activity may change along the year and it shall be accommodated to the interlock schedule.
The report shall also indicate any technical or managerial issue encountered during the performance of the work.
The activities to be reported are:

- Progress on the MPP actions.
- Progress on the DLIB supply contract
- Contribution to the CIS FDR and CIS V.1 manufacturing
- Progress on CIS Test Platform
- General support to PBS-46 RO and other IO members

Subtask	Deliverable	Dates
1	Progress report	6 month after starting date
2	Progress report	12 month after starting date

8 Work Monitoring / Meeting Schedule

Meetings and Progress Reports

Personnel will be expected to attend regular Group Progress Meetings as requested, and to the formal exchange of documents transmitted by emails required. Progress Meetings will be called by the ITER Organization, to review the progress of the work, the technical problems, the interfaces and the planning. Where necessary or appropriate, off-site contractor managers may be invited to participate in some progress meetings via videoconference.

The main purpose of the Progress Meetings is to allow the ITER Organization/Controls Division and the Contractor Technical Responsible Officers to:

a) Allow early detection and correction of issues that may cause delays;
b) Review the completed and planned activities and assess the progress made;
c) Permit fast and consensual resolution of unexpected problems;
d) Clarify doubts and prevent misinterpretations of the specifications.

In addition to the Progress Meetings, if necessary, the ITER Organization and/or the Contractor may request additional meetings to address specific issues to be resolved.

It is expected that on occasion the Contractor will be required to make a presentation to Topical Technical Meetings. For all Progress Meetings, a document (the Progress Meeting Report) describing tasks done, results obtained, blocking points and action items must be written by the Contractor. Each report will be stored in the ITER IDM in order to ensure traceability of the work performed.

Every 3 months, the Contractor shall submit to ITER Organization a Progress Report to be issued five working days before a Progress Meeting so that the report can be reviewed prior to, and discussed at, that Meeting.

The Quarterly Progress Report shall illustrate the progress against the baseline work plan and indicate variances that should be used for trending. Performance indicators suitable to measure the progress of the work as compared to the approved work plan shall also be reported in the Quarterly Progress Report.

9 Quality Assurance (QA) requirement

The organisation conducting these activities should have an ITER approved QA Program or an ISO 9001 accredited quality system.
The general requirements are detailed in ITER document ITER Procurement Quality Requirements (22MFG4)
Prior to commencement of the task, a Quality Plan Quality Plan (22MFMW) must be submitted for IO approval giving evidence of the above and describing the organisation for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities.
Prior to commencement of any manufacturing, a Manufacturing & Inspection Plan Manufacturing and Inspection Plan (22MDZD) must be approved by ITER who will mark up any planned interventions.
Deviations and Non-conformities will follow the procedure detailed in IO document MQP Deviations and Non Conformities (22F53X)
Prior to delivery of any manufactured items to the IO Site, a Release Note must be signed MQP Contractors Release Note (22F52F).
Documentation developed as the result of this task shall be retained by the performer of the task or the DA organization for a minimum of 5 years and then may be discarded at the direction of the IO. The use of computer software to perform a safety basis task activity such as analysis and/or modelling, etc. shall be reviewed and approved by the IO prior to its use, it should fulfil IO document on Quality Assurance for ITER Safety Codes Quality Assurance for ITER Safety Codes (258LKL).