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Technical Specifications (In-Cash Procurement)

Technical Specifications Administration of the Manufacturing Database for Magnet Components

The document defines the technical requirements of the proposed contract for technical administration of the Manufacturing Database and management of quality documentation in the area of Magnet component production and on-site installation.

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1 Purpose

The document defines the technical requirements of the proposed contract for technical administration of the Manufacturing Database and management of quality documentation in the area of Magnet component production and on-site installation.

2 Scope

Even though ITER has entered assembly and construction phase manufacturing of its components, in particular of magnets and auxiliary systems, is still on going and even ramping-up. A close follow-up of the manufacturing process is required in order to ensure that the components quality meets the requirement. Taking into account the large scale and complexity of items being produced, a major factor to ensure sufficient quality and technical control is a timely review of relevant documentation. The Manufacturing Database is a tool that allows Suppliers, DAs and IO have an overview of manufacturing progress in real time and therefore contributes invaluably to manufacturing overview.

Scope of this contract is development and implementation of the Manufacturing Database, which is major tool for follow-up of manufacturing activities on supplier premises under both in-kind and in-cash agreements. This contract mainly aimed but not limited for modules of the Manufacturing Database for the magnet components (PBS 11 and PBS 15.IV).

The scope of the contract includes the following sub-tasks:

- ✓ Development of new MDB modules for magnet components to be produced;
- ✓ Support of IO, DA and industry (supplier) user and interaction with IT when necessary;
- ✓ Preparation of manufacturing data for archiving in the Project Lifecycle Management System (PLM).

3 Definitions

DA : Domestic Agency
IO : ITER Organization
IO-CT : ITER Organization Central Team
IT : Information Technology
MIP : Manufacturing and Inspection Plan
MDB : Manufacturing Database
PBS : Plant Breakdown Structure
PLM : Product Lifecycle Management
QA : Quality Assurance
QC : Quality Control
RO : Responsible Offcier
TRO : Technical Responsible Officer
WP : Work Package

- ✓ Shall: Mandatory requirement
- ✓ Should/May/Will: Recommendation or action which is advised but not required. “Will” is used for all actions to be performed by IO and/or the others.

For a complete list of ITER abbreviations see: ITER Abbreviations (ITER_D_2MU6W5).

4 References

- See the Magnet Detailed Design Documents HERE
- See the Manufacturing Database User Manual
- See the Management of shipments for Magnet instrumentation
- See the Dictionary of Magnet Instrumentation part numbers

5 Estimated Duration

6 The duration shall be for 12 months (a maximum of 220 working days) from the starting date, defined by the Contract.

7 Work Description

The scope of this task is a technical management and administration of the Manufacturing Database to allow adequate oversight of manufacturing process and traceability of components and materials as extraction of necessary information for future archiving. This task is foreseen as 100% off-site work.

7.1 Sub-task 1: Development of new MDB modules for magnet components to be produced

Careful oversight of manufacturing process of ITER components is required to ensure their compliance with the requirements and provide possibility. Taking into account complexity of the ITER components, the magnets in particular, (sophisticated and multi-stage process and various materials) a well-structured storage of manufacturing data is required to provide an adequate storage and timely verification of the manufacturing documentation. Manufacturing Database (MDB) is a tool utilized for this purpose and covering manufacturing of all magnet components.

Manufacturing is monitored on a basis of Database Work Packages (WP) that usually corresponds to one Manufacturing and Inspection Plan (MIP) instance. MIP is prepared and submitted by supplier and, when applicable, a relevant DA, when applicable, prior to component manufacturing and submitted to the ITER IO for review and final approval. Once approved MIP is implemented in the Manufacturing Database via the ICP interface of ASP.NET based Database. Creation of new work packages is the major activity of this subtask. This subtask also includes update of existing work packages in case of MIP update and creation of lists of incoming and out coming parts and inventory management to provide traceability of components down to raw materials. A list of created and modified work packages will be presented in monthly reports.

7.2 Sub-task 2: Support of IO, DA and industry (supplier) user and interaction with IT when necessary

The second sub-task of this work is dedicated to the support of the Manufacturing Database users. As any IT tool, the Manufacturing Database may demonstrate malfunctioning due to errors in the code, incorrect setting (for example access rights or actors assignment) or misuse of the Database by users. The Contractor will act on daily basis as a single interface to collect users' feedback. The requests related to system malfunctioning shall be redirected to ITER IT Division. The Contractor will process directly problems related to incorrect database settings. In case of misuse of the Database, the Contractor will provide assistance and/or consultation to users concerned.

Under this subtask, the Contractor will be also responsible for liaising with ITER IT department for long-term improvements of the Manufacturing Database, including tests of pre-production version of new Manufacturing Database releases.

Progress on this subtask will be reported in monthly reports.

7.3 Sub-task 3: Preparation of manufacturing data for archiving in the Project Lifecycle Management System (PLM)

The Manufacturing Database is a useful tool that allows an adequate monitoring of the manufacturing process and it contains a lot of important information that is generated during components manufacturing, for example all manufacturing QC records. Those documents might be required in the future, during machine assembly, commissioning and operation and should be kept as a part of project lifecycle management (PLM). The sustainability of the Manufacturing Database through the whole lifecycle of the machine cannot be ensure as only ITER Document Management (IDM) System is recognized as the only data repository.

In order to preserve the manufacturing data they it will require a transfer from the Manufacturing Database to IDM. Preparation of such data packages (Travellers or End of manufacturing dossier) for one component may represent a challenging task, depending on the component's complexity as one component may be involve multiple work packages. Preparation of Travellers upon IO TRO request is the third subtask of the Contractor. A list of generate travellers will be reported in progress monthly reports.

All work performed shall be documented in the Contract Deliverables (ref. section 8). Deliverables shall be submitted by the Contractor for IO approval, the format being agreed based on information availability and the specific purpose/scope of the Deliverable requested.

In the event that sufficient input information is not available, or as a consequence of reprioritisation of scope, the scope of the tasks and / or alternative deliverables may be agreed, with any changes regarding content, timing, or format of Deliverables being recorded in Monthly Progress Meeting minutes, signed by both the Contractor Responsible Officer (C-R) and the IO Task Responsible Officer (TRO) or delegated Responsible Officer (RO).

8 Responsibilities

8.1 IO Responsibilities

IO shall assign one IO representative, to work as sole Contractor interface.

- ✓ The IO representative will assess the performance and quality of the work.
- ✓ The IO representative shall be responsible for checking the deliverables against requirements and schedule.
- ✓ IO shall make available to the Contractor all technical data and documents which the Contractor requires to carry out its obligations pursuant to this specification in a timely manner. For delays of more than two weeks in making them available, the Contractor shall advise IO representative of the potential impact on the delivery of the sub-tasks, to agree and define all the correction actions to take in place.
- ✓ IO shall grant to the Contractor an appropriate level of access to the Manufacturing Database in order to allow its correct administration.

8.2 Contractor's responsibilities

The Contractor shall ensure that he complies with the following:

- ✓ The Contractor shall ensure broadband and high speed internet connection for carry out this work;
- ✓ The Contractor shall guarantee that all input information provided to perform the task remain property of IO and shall not be used for any other activity than the one specified in this specification;
- ✓ The contractor shall perform the activities accordingly to this specification taking into account all relevant additional documents and IO processes into account (handbooks, export control, intellectual properties, etc.);
- ✓ Contractor shall provide to the IO representative full access to its work premises and related documentation, to permit to follow up the progress of the work.

9 List of deliverables and due dates

#	Deliverable	Est due date
D1	Monthly reports #01 and 02	T0+2 month
D2	Monthly reports #03 and 04	T0+4 month
D3	Monthly reports #05 and 06	T0+6 month
D4	Monthly reports #07 and 08	T0+8 month
D5	Monthly reports #09 and 10	T0+10 month
D6	Monthly reports #11 and 12	T0+12 month

10 Acceptance Criteria

These criteria shall be the basis of acceptance by IO following the successful completion of the services. These will be in the form of monthly progress reports.

Report and Document Review criteria:

- ✓ reports as deliverables shall be published in the ITER Organization's document management system, IDM, for acceptance;
- ✓ a named ITER Organization's Contract Technical Responsible Officer is the Approver of the delivered documents;
- ✓ the Approver can name one or more Reviewers(s) in the area of the report's expertise.
- ✓ the Reviewer(s) can ask modifications to the report in which case the contractor must submit a new version.

The acceptance of the document by the Approver is the acceptance criterion.

11 Specific requirements and conditions

The contractor shall identify resources who possess more than 5 years of work experience, with at least 3 years in the following areas:

- ✓ Database administration;
- ✓ Production management and quality control;
- ✓ International quality standards and implementation;

The following skills and competences are mandatory:

- ✓ Verbal and writing communication in English;
- ✓ Knowledge of software for manufacturing follow-up;
- ✓ Software testing;
- ✓ Ability work in multicultural environment or experience with customers from different cultural backgrounds;
- ✓ General knowledge of ITER Magnet System and its components or equivalent;

The following skills and competences are not mandatory but would be an advantage:

- ✓ Experience with Atlassian software products (Jira, Confluence) and ICP based document management platforms or equivalent;
- ✓ Experience with ITER Project or equivalent (large scale engineering projects).

12 Work Monitoring / Meeting Schedule

Work progress will be reported on monthly basis. The meeting will be set up upon IO TRO request.

13 Delivery time breakdown

As outlined in Section 8 – List of Deliverables and Due Date.

14 Quality Assurance (QA) requirements

Not applicable.

15 CAD Design Requirements (if applicable)

Not applicable.

16 Safety requirements

Not applicable.