

Technical Specifications (In-Cash Procurement)

Technical Specification for CAD Collaboration Assistance, Exchanges and SMDD Administration

The purpose of this document is to specify Work Units (WU) and the related deliverables to support Design Office (DO) on activities in three categories:

- CAD Exchanges Support
- CAD Collaboration Assistance
- Support to Diagrams and Drawings management, SMDD administration

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1 Preamble

This Technical Specification is to be read in combination with the General Management Specification for Service and Supply (GM3S) – [Ref 1] that constitutes a full part of the technical requirements.

In case of conflict, the content of the Technical Specification supersedes the content of Ref [1].

2 Purpose

The purpose of this document is to specify Work Units (WU) and the related deliverables to support Design Office (DO) on activities in three categories, as outlined below:

2.1 CAD Exchanges Support

The supported activities concern the execution of the CAD data exchanges and peripheral operations gathered in the DET (Data Exchange Task) process applied in the ITER project, mainly comprising:

- Administrative and traceability part of the DET process.
- Data handling Action type 1
- Data handling Action type 2
- Data handling Action type 3
- DCIM (Design Collaboration Implementation Monitoring) actions.

2.2 CAD Collaboration Assistance

The supported activities concern the assistance to CAD Collaboration specification, monitoring and coordination, mainly comprising:

- Contribution to the Specification of CAD Collaboration matters in PA, TA, and Contracts (Procurement Arrangements, Task Agreements and Contracts): Identification of CAD collaboration cases and maintenance of a dedicated knowledge base. Technical writing of the related Design Collaboration Implementation Forms (DCIF).
- Contribution to the Coordination of the CAD Collaboration across the project through his/her involvement in the interface calls with the DA, in the organization of CAD Working Group workshop(s) and subsequent reporting and actions monitoring.
- Assistance to the IO DO Collaboration Responsible Officer for the coordination of the IODO CAD Collaboration activities operation by IODO/CIS/Collaboration team: Set-up and regular extraction of performance indicators, Preparation of reporting, set-up of team management tools, Contribution to Actions follow-up, etc.

2.3 Support to Diagrams and Drawings management, SMDD

The requested support includes:

- The administration of the dedicated Diagrams/Drawings Management tool (SMDD), the support to users on SMDD usage, the creation/maintenance of related documentation and trainings, and the further integration of the SMDD tool within the global data management platforms in ITER.
- The support to the SMDD users for the preparation and execution of their drawings submission in SMDD, to perform the checks ensuring the consistency drawings as related to data identification, Bill of Material (BoM) management and Systems components management, as well as performing the submissions using batching and administration tools for the heaviest cases.

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3 Acronyms & Definitions

3.1 Acronyms

The following acronyms are the main one relevant to this document.

Abbreviation	Description
CAA	CAD Activities Section (of Design Office)
CAD	Computer-aided Design
CRO	Contract Responsible Officer
GM3S	General Management Specification for Service and Supply
DA	Domestic Agency
DO	Design Office
IO	ITER Organization
KPI	Key Performance Indicator
PRO	Procurement Responsible Officer
MQP	Management Quality Program
QC	Quality Control
TRO	Technical Responsible Officer

3.2 Definitions

Contractor: shall mean an economic operator who have signed the Contract in which this document is referenced.

Domestic Agencies (DA): Stakeholders of the ITER project, including: European Union, India, Japan, the People's Republic of China, the Republic of Korea, the Russian Federation and the United States of America.

Design Office (DO): A unit within the IO with the overall responsibility to manage the CAD resources, CAD Production, CAD Infrastructure and Support Contracts to enable the project to perform its Engineering and CAD activities. It also has the mission to control CAD quality and efficiency of the design activities.

ITER Organization (IO): An international Organization and team located in Cadarache and responsible, in close partnership with the Domestic Agencies, for the construction, commissioning, operations and maintenance of the ITER facility. The IO is in particular responsible for the requirements definition, the design, the performance, the configuration management, the project schedule, the monitoring of the construction, the assembly the commissioning, and the operations of ITER. The IO is also responsible for establishing appropriate CAD infrastructure platform and design collaboration schemes between the IO , the Domestic Agencies and suppliers.

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Technical Responsible Officer (TRO): Any IO staff responsible to the technical definition and provision of input for any given Contract. He/she is responsible to technically validate the deliverable outputs provided by the Contractor under an associated Contract under his/her responsibility.

Contract Responsible Officer (IO-CRO): shall mean the IO staff person accountable for the full-cycle contract performance including initiating the procurement request according to the procurement plan(s), preparing the technical documentation, in collaboration with the Procurement Officer, supporting the tendering process, ensuring the overall quality of the input data prepared for the tender and for the contract, and being the IO's single point of accountability for the overall performance of the contract once placed.

Work Unit: It is a single repetitive and identical task that is used in order to define certain repetitive activities. The Technical Specifications can formulate several Work Unit Types and the Contractor shall assign a fixed cost to each type. The Work Units per se shall not be considered deliverables. One Work Unit or Several Work Units can be delivered as part of a Ticket or request to be completed as a task, the ticket is the formalization of the client's request.

4 Applicable Documents & Codes and standards

4.1 Applicable Documents

It is the responsibility of the Contractor to identify and request for any documents that would not have been transmitted by IO, including the below list of reference documents.

This Technical Specification takes precedence over the referenced documents. In case of conflicting information, this is the responsibility of the contractor to seek clarification from IO.

Upon notification of any revision of the applicable document transmitted officially to the Contractor, the Contractor shall advise within 4 weeks of any impact on the execution of the Contract. Without any response after this period, no impact will be considered.

Ref	Title	IDM Doc ID	Version
1	General Management Specification for Service and Supply (GM3S)	82MXQK	1.4
2	Procedure for ITER CAD Data Exchanges	2NCULZ	4.2
4	Procedure for the Design Collaboration Implementation Form (DCIF)	2E2MKW	1.5
5	Diagrams and Drawings Management System Working Instruction	KFMK2B	2.2

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4.2 Applicable Codes and Standards

N/A

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5 Scope of Work

This section defines the specific scope of work for the service, in addition to the Contract execution requirement as defined in Ref [1].

The scope of work is described for each of the three areas of activity to be supported by the Contractor in chapters 5.2 to 5.4 below

5.1 Duration of Services

The maximum expected duration for this contract is $T_0 + 37$ months.

T_0 = Signature of Contract by both Parties

The Kick-off Meetings (KoM) per activity T_n shall take place within 1 month from T_0 .

. T_n is defined as follows (please see also Section 8):

T_1 – KoM for Area of Activity # 1

T_2 – KoM for Area of Activity # 2

T_3 – KoM for Area of Activity # 3

5.2 Area of Activity # 1: CAD Exchanges Support

A key mission of the ITER Organization Design Office (IO DO) is to ensure that all CAD data is available for all parties working on the ITER project. A process dedicated to the CAD data exchanges has been developed and is used by IO DO and Design Offices of ITER parties to ensure that the CAD data exchanges are performed with respect to the relevant quality approach while providing an efficient service. The present areas of specification defines the activities included within the Data export tasks operations (DET process described in [Procedure for ITER CAD Data Exchanges \(2NCULZ\)](#)) and DET process administration, as well as peripheral activities like DCIM actions as identified below (See complete definition in Chapter 6.2) :

- Administrative and traceability part of the DET process.
- Data handling Action type 1
- Data handling Action type 2
- Data handling Action type 3
- DCIM (Design Collaboration Implementation Monitoring) actions.

The tasks in this area consist mostly of CAD data handling in the frame of the DET process. The CAD tools to be used in the frame of this task are: CATIA V5, Enovia V5, Q-Checker. All of these tools, and possible customizations and settings going with it, are provided to the contractor as explained in chapter 13 of the present technical specification.

For the monitoring and management of the replication, besides the access to CATIA/Enovia as explained above and in [Specification for CAD data Production in ITER direct contracts \(P7Q3J7\)](#), a dedicated webpage has been developed by IO and is made available to all ITER contributors.

For the actions run in the frame of the Design Collaboration Implementation Monitoring (DCIM), a dedicated action-management web page is available to streamline the identification of the needed actions to be taken over by the contractor, as well as the reporting made by him after completion of the action.

The tasks imply the application of the DET Process ([Procedure for ITER CAD Data Exchanges \(2NCULZ\)](#)) and the monitoring/coordination of peripheral actions (such as data promotion, data transfer of ownerships, etc...) executed by other process actors (IO DECOs, mostly).

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Out of Scope: The step of acknowledgement of the Data Exchange Request (DER) is kept out of the scope of the present specification. This step will be exclusively taken over by an IO member, as the classification of the DET (Type 1 or 2 or 3) will be done during this phase of the process, before the DET actions are handed over to the contractor.

5.3 Area of Activity # 2: CAD Collaboration Assistance

The contractor shall provide support for the CAD Collaborations Coordination comprising the following activities:

5.3.1 Assistance to the coordination of the IODO CAD Collaboration activities:

This sub-task consists in the maintenance and coordination of the activities to produce the Design Collaboration Implementation Form (DCIF), as well as the technical writing of the DCIF. It comprises the following actions:

A group of IO staffs and contractors within IODO/CIS has been created to endeavour all CAD collaboration matters. This sub-task for the contractor aims at providing organizational assistance to the management of activities taken over by the IODO/CIS CAD Collaboration team. It consists in the set-up and regular extraction of performance indicators, the preparation of weekly, quarterly, and yearly reports about the CAD Collaboration activities, and the support to the maintenance of CAD Collaboration Team's action tracking, including the improvements and use of action management tools for these activities, the contribution to actions follow-up.

5.3.2 Contribution to the Specification of CAD Collaboration matters:

This sub-task consists in the maintenance and coordination of the activities to produce the Design Collaboration Implementation Form (DCIF), as well as the technical writing of the DCIF. It comprises the following actions:

- The Collection, organization and traceability of the information needed to maintain the activity, such as: PA/TA schedule and updates, contracts to be issued. This is formalized by the set-up and maintenance of a PA/TA/Contract dedicated knowledge base providing the overview of all CAD Collaboration cases to the DO management..
- The review of the PA, TA and contracts technical specifications and the CAD requirements included within those documents, and the reporting of these reviews together with the DO actions they shall trigger.
- The technical redaction of the DCIFs when required by the type and extent of the CAD works implied in the reviewed technical specification, alternatively a tailored set of CAD requirements specifically applicable to this task.
- The weekly reporting to the IO DO Collaboration RO of the achievements in the DCIF activity.

5.3.3 ITER CAD Collaboration cases monitoring:

ITER project has established over the years a cross-organizational group of competent persons dedicated to the general coordination of the ITER CAD collaborations. The so-called CAD Working Group is formed by representatives from the IO and all DA (usually DO managers from all parties), to address the CAD collaboration needs and manage the actions to streamline the Collaborative ITER design and construction. To this end, 2 types of instances are used:

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- Bilateral IO/DA Remote meetings are held weekly or bi-weekly with all DA DOs to review systematically the progress of CAD collaboration cases, identify potential issues and address them through tracked and monitored actions. In this sub-task, the contractor shall chair the IO/DA bilateral calls, monitor the progress of all Collaborative tasks and monitor the decided actions in the dedicated action management tool (DCIM for Design Collaboration Implementation monitoring).
- Regular Workshops with all CAD WG members (approximately yearly basis), aim at treating generic topics and defining main strategies for maintaining the ITER collaborations to high efficiency and qualitative levels. The contractor shall provide support for the CAD Working Workshops: Identification of relevant topics, collection of requests from all participants, Contribution to the agenda definition and its adoption by the workgroup, preparation and coordination of the workshop by itself. Contribution to the Minutes and conclusions of the workshops, establishment of the subsequent actions list, monitoring of their implementation and reporting on their completion.

5.3.4 *Out of scope for CAD Collaboration Assistance:*

- The execution of the CAD Exchanges implied by the CAD Collaborations are taken over by a group of dedicated resources (so-called CAD Exchangers) and are excluded from the scope of the CAD Collaboration Assistance..
- The daily actions to set-up and administrate the CAD Infrastructures enabling the CAD Collaboration, in particular the IT systems operations and administrations, or the CAD software administration are out of scope of this task, since they are taken over by specialized persons in the DO Collaboration team. Even though, the coordination, monitoring, and reporting of these actions, in interface with those CAD administrators, are included in the possible actions performed in the frame of this task

5.4 **Area of Activity # 3: Support to Diagrams and Drawings management, SMDD**

The contractor shall provide support and management expertise for Diagrams, Drawings and CAD Data to IO/ENGN/DO/CIS section to perform the following type of tasks.

- Development of interactions between SMDD on one side, and CAD Systems on the other side. It might also include the improvements of the SMDD application itself (new features). This contribution will be provided through a) the writing of business requirements lists, functional and technical specifications used by the IT developers to implement the required features in SMDD, including the preparatory steps, b) the follow-up of the IT developments from a business owner perspective (e.g. compliance assessment of the proposed solution with the requirements) , c) the testing of the features delivered by the IT developers and subsequent reporting, d) the drafting or update of the user documentation related to the newly developed features.
- Support to the SMDD users for the preparation and execution of their drawings submission in SMDD, including Quality checking and control
- User training, creation and maintenance of tool documentation (Training support, How To, etc...)
- Support to the integration of SMDD within the global ITER Data Management systems: These activities are similar in their nature with the tasks described in the first bullet above, and endeavour a broader scope of tools interactions, requiring from the contractor a good understanding of the data management in a PLM-like approach.

Out of scope:

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- All activities out of ENGD/DO/CAD Infrastructure Section (CIS) scope of work, e.g. code developments or other IT activities, are excluded from the scope of this task.
- The corrections of the original CAD data (Diagrams and Drawings sources), which can be possibly required to ensure a coherent, consistent and quality-wise acceptable data set are due by the technical divisions and therefore do not enter in the scope of this contract. However, the formulation of required corrective actions, as transmitted to the technical divisions, are part of the scope.

6 Location for Scope of Work Execution

The services shall be rendered at the Contractor's premises (where the offices are at distance no longer than 1,500 Km from the IO Site).

The Contractor may be granted some space at the IO Premises, to facilitate the interaction of the services. The Contractor shall have at least one person on site during ITER working hours.

The Contractor may propose partially an Off-shore scheme (More than 1,500 Km). In such case, the Contractor shall commit that the services are rendered and aligned with the timeframes and availability of the ITER Organization (8.30 a.m. – 5.30 p.m. CET and CEST resp.), this is done to guarantee the access to the user support and to communicate with the DO Support Team.

7 Work Description

7.1 Task Categories and Work Units:

Sections 7.2 – **Error! Reference source not found.** list the various Work Units (WU) to be used to manage task deliverables and invoicing in the scope of this contract.

7.2 Definition of Work Units for Area #1: CAD Exchanges Support

7.2.1 WU: Administrative part of the DET Process

Description: This task comprises, for all DETs, the following steps in the DET process: The reception of the DER, the preparation of the DET form, the clarification of information contained by the DER form, the creation of the DET folder in dedicated network place, the emissions of all communications being part of the DET process (except the acknowledgement communication) the storage of all communications within the DET folder and all traceability actions, the filling of the DET-Logs file, and the identification of all indicators inside the DET-logs. The average production time for this work unit is 1 hour.

Inputs: One mail from IO CRO, or by delegation from an IO CADEXchange team member, appended with the DET request form, and a proposed DET categorization, stands for the assignment of one DET to the contractor, for both the Administrative part and for the DET Data handling part (See chapters 7.2.2 to 7.2.4)

Deliverables: Any DET treatment contain an administrative part and a DET Data handling part. So, any DET treatment requested by IO through the inputs described above will trigger one WU for the administrative part, which is considered as fixed average time for its treatment, plus one WU for the DET Data handling, which is variable according to the categories described in chapters below.

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Associated WU:

Type: C1-XS: ‘ticket-like activities’ (even though DET activities are not monitored through ticketing system, but in a dedicated File-base structure) – and sub type ‘User support’

7.2.2 DET Data handling Action type 1

Description: This work-unit is applicable for the DETs with the following characteristics:

- Low volume of data on asynchronous export,
- or low volume synchronous for both directions of the exchange

This work-unit comprises the collection of the requested CAD data, the verification of the collected data with possible support of the appropriate DECO and RO, the storage of this data in the dedicated place for asynchronous exports, the generation of the data BOM for synchronous exchanges, the possible needed coordination of actions with the IO DECO (transfer of ownerships), the check of the synchronous exchange through BOM comparison.

Inputs: the mail from IO CRO, or by delegation from an IO CAD Exchange team member, as described as input in the chapter 7.1.1 (DET administrative part) stands also for the assignment of the DET data handling in this WU category

Deliverables: Traced outputs of the DET Data handling, i.e. Data transferred through this DET, associated BOM, DET communications stored in the DET folder, and as opportune the DET follow-up communications, represent the evidences of the technical delivery. The associated DET, identified through the DET number and its ‘completed’ status in the DET logs file, is identified as delivered WU within the monthly reporting

Associated WU:

Type: C1-XS: ticket-like activities, sub-type ‘User support’

7.2.3 DET Data handling Action type 2

Description: This work-unit is applicable for the DETs with the following characteristics:

- Mid-size volume of data on asynchronous export,
- or export of IO CAD data where the data identification is not supported by precise information (BOM/snapshot of Enovia tree) but the identification is to be performed by the contractor.
- or export with high traceability process (with all associated QA documentation structured in the IDM DET folder)
- or low-size volume asynchronous import (reconciliation)
- or Large synchronous export/import

This work unit comprises the identification of the data to be exported, the collection of the CAD data, the verification of the collected data with possible support of the appropriate DECO and RO, the storage of this data in the dedicated place for asynchronous exports, the generation of the data BOM for synchronous exchanges, the possible needed coordination of actions with the IO DECO (transfer of ownerships), the verification of the synchronous exchange through BOM comparison, and the reconciliation with resulting BOM generation for the asynchronous imports.

Inputs: the mail from IO CRO, or by delegation from an IO CAD Exchange team member, as described as input in the chapter 7.1.1 (DET administrative part) stands also for the assignment of the DET data handling in this WU category

Deliverables: Traced outputs of the DET Data handling, i.e. Data transferred through this DET, associated BOM, DET communications stored in the DET folder, and as opportune the DET follow-up communications, represent the evidence of the technical delivery. The associated DET, identified through the DET number and its ‘completed’ status in the DET logs file, is identified as delivered WU within the monthly reporting

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Associated WU:

Type: C1-M: ticket-like activities, sub-type 'User support'

7.2.4 *DET Data handling Action type 3*

Description: This work-unit is applicable for the DETs with the following characteristics:

- Huge synchronous package, or replications affected by replication technical failure
- Tricky reconciliations (because of large volume or data complexity or Reconciliator failure, to be justified by the contractor with the communication with IO reconciliation support)

This work unit comprises the identification of the data to be exported, the collection of the CAD data, the verification of the collected data with possible support of the appropriate DECO and RO, the generation of the data BOM for synchronous exchanges, the possible needed coordination of actions with the IO DECO, the verification of the synchronous exchange through BOM comparison, the monitoring of the replication issue solving, the interface with replication support and subsequent reporting to the IO CAD Collaboration RO, the reconciliation with resulting BOM generation for the asynchronous imports, the monitoring of possible needed reconciliation corrective actions (through IO support) and subsequent reporting to the IO CAD Collaboration RO.

Inputs: the mail from IO CRO, or by delegation from an IO CAD Exchange team member, as described as input in the chapter 7.1.1 (DET administrative part) stands also for the assignment of the DET data handling in this WU category

Traced outputs of the DET Data handling, i.e. Data transferred through this DET, associated BOM, DET communications stored in the DET folder, and as opportune the DET follow-up communications, represent the evidence of the technical delivery. The associated DET, identified through the DET number and its 'completed' status in the DET logs file, is identified as delivered WU within the monthly reporting

Associated WU:

Type: C1-XL: ticket-like activities, sub-type 'User support'

7.2.5 *DCIM Actions (Design Collaboration Implementation Monitoring)*

Description: This work-unit is applicable for the following actions:

- Contact with DA interfaces and/or RO about CAD Exchange strategies, new organization to be put in place for specific collaboration cases.
- CAD Collaboration issue solving, specific actions involving several CAD collaboration entities

The DCIM is an action-management tool based on Jira, allowing the joint remote works and reporting, as well as workflows and reviews.

This work unit comprises the reception a DCIM action (Jira object), the required interfacing actions with the persons identified in the DCIM action, the execution of possible technical tasks identified in the DCIM action, and the reporting in the DCIM action itself.

Inputs: DCIM action (the Jira ticket assigned to the contractor)

Deliverables: Action completed, and reported as such through the action management system

Associated WU:

Type: C1-S: ticket-like activities, sub-type 'User support'

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7.3 Definition of Work Units for Area #2: CAD Collaboration Assistance

7.3.1 Assistance for the IODO CAD Collaboration activities Coordination:

Description: A group of IO staffs and contractors within IODO/CIS has been created to endeavour all CAD collaboration matters. This sub-task aims at providing organizational assistance to the management of the activities taken over by this group. This assistance is formalized through the following actions:

- Assistance for CAD Data Exchanges coordination:
 - Weekly extraction of performances indicators related to the CAD Data exchanges. The same indicators are issued quarterly and yearly to append figures and dashboard to the quarterly and yearly DO reports.
 - The balancing of the CAD Exchange activities may imply during the periods of CAD Exchange activity peaks to take over the acknowledgement part of the Data Exchange Tasks (DET). In such periods, experience shows that the acknowledgement of DET may require in average 8 hours over one week, and this activity might be requested by the DO Collaboration Responsible Officer each third week.
 - Expected deliverables: For the acknowledgement of DETs requested to the contractor, the list of acknowledged DETs within the week is recorded in IDM. This IDM record is a deliverable to be approved by the DO Collaboration Responsible Officer
 - Associated Work Unit: D2-M: Documentation-like activity, sub-type 'Engineering expertise/consulting'
- Support to Coordination of CAD collaboration activities:
 - Support to the DO Collaboration Responsible officer to maintain the team's actions list up to date, and follow-up of these actions until their completion. To this end, the same DCIM tool as for the interfaces with DAs is used to track the IODO Collaboration team's actions. This tool allows a rather automatic weekly reporting of the IODO Collaboration team's activities.
 - Contribution to the Weekly, Quarterly and Yearly reporting of the CAD Collaboration team's activities. The contractor shall collate for these reports the information gathered in some of the previous bullets as follows:
 - Weekly reports collate a) the weekly CAD Exchanges performance indicators, b) the links to the DCIM actions reports issued within the work-units specified in the chapter 7.3.2 below, and c) the notable points of the DCIF activities report issued within the work-units specified in the chapter 7.3.3 below
 - Quarterly reports collates the current quarter's performance indicators for CAD Data exchange activities (appended with Dashboard which is automatically generated with Power Bi), the summary of the DCIF activities, the summary of the DCIM actions completed during the current quarter.
 - Yearly report has the same content as the quarterly reports, naturally extended to cover the full current year.

Expected deliverables and associated Work Units:

- Weekly reports as defined above are recorded in IDM and communicated to the DO Collaboration Officer on every Wednesday afternoon. This IDM record is a deliverable to be approved by the DO Collaboration Responsible Officer and officialises the delivery of one work-unit of type D3-L

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- Quarterly reports as defined above are recorded in IDM following the DO Collaboration Responsible officer's request within the quarter last days. This IDM record is a deliverable to be approved by the DO Collaboration Responsible Officer and officialises the delivery of one work-unit of type D3-M
- Yearly reports as defined above is recorded in IDM following the DO Collaboration Responsible officer's request within November. This IDM record is a deliverable to be approved by the DO Collaboration Responsible Officer and officialises the delivery of one work-unit of type D3-XL.

7.3.2 Collaborations: Bilateral IO/DA Remote meetings:

Description: These work units do not require a specific trigger from the IO TRO, since the 7 DAs are invited to attend to a weekly interface call, this process being held for years. Considering different schedules from IO and DA, in average 5 calls are held per week. The call itself, chaired by the contractor, without surrounding actions of organization and reporting, is organized to last about one hour with the DA DO representatives. Besides the call itself, the contractor shall take over the reporting of the calls through the DCIM tool, and the monitoring of the actions recorded within this tool. The completion of the calls during the week are reported through 3 ways:

- o Unitary reports of the calls, as automatically extracted from the DCIM tool, and recorded within IDM, such as [DCIM Report - With EUDA - 2021-Week 47 \(66LJNF\)](#)
- o Those unitary reports are communicated through mail to the DO management and to the DECOs of the PBS for which actions are identified in the report.
- o The links to theses unitary reports recorded during the week are appended to the DO Collaboration Activities weekly report (See work unit related to Assistance for the coordination of the IODO CAD Collaboration activities)

Expected deliverables and associated Work Units: For sake of simplifying the task order monitoring, the DO Collaboration Activities weekly report (as specified in chapter 7..3.1, work unit type D3-L) will include the reporting of the Bilateral IO/DA/Remote meetings, and so the Bilateral IO/DA remote meetings activity will not trigger a separate deliverable. Nonetheless, the DO Collaboration Activities weekly report will be checked with regards to the consistence of the reports of Bilateral IO/DA remote meetings.

7.3.3 Collaborations: Contribution to the Specification of CAD Collaborations:

Description: This sub-task consists in the maintenance and coordination of the activities to produce the Design Collaboration Implementation Form (DCIF), as well as the technical writing of the DCIF. It comprises the following actions:

- Collection, organization and traceability of the information needed to maintain the activity, such as: PA schedule and updates, TA schedule and updates, contracts to be issued. This implies the regular interfaces with the IO Procurement and Contract Division members in IO, and with the ROs issuing new contracts. All these information shall be compiled within a dedicated knowledge base providing a reference for the DO Section leaders and the DO Collaboration team to manage the DO actions suitably for the specific collaboration cases. Some initial collection of this data is available, and the finalization of this knowledge base is part of the contractor duties within this subtask.
- The review of the PA, TA and contracts technical specifications and the CAD requirements included within those documents. These reviews are reported to the DO Collaboration Officer and the DO section leaders by a general summary of the task and what they imply in terms of CAD Collaboration construction, concluded with an advice about how to tackle the CAD Collaboration needs in the frame of the reviewed

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specification. This summary also feeds the knowledge base described in the previous bullet; the contractor is in charge to input this information in this database.

- The technical redaction of the DCIF when required by the type and extent of the CAD works implied in the reviewed technical specification, alternatively a tailored set of CAD requirements specifically applicable to this task. The drafting of the DCIF is made according to the [Procedure for the Design Collaboration Implementation Form \(2E2MKW\)](#)
- The weekly reporting to the IO DO Collaboration RO of the achievements in the DCIF activity. This report includes a review of the DCIF activity schedule ensuring that all DCIFs are delivered in time, and the analysis of the possible activity issues and/or risks

Expected deliverables and associated Work units: The reviews of all PA, TA and Contracts specifications, as well as the production of the DCIF performed within one week are summarized in the weekly report to the DO Collaboration Responsible officer through a record in IDM. The production of this weekly report is subsequent to the inputs of the collected information during the week into the PA/TA/Contracts knowledge base. This IDM record is a deliverable to be approved by the DO Collaboration Responsible Officer and officialises the delivery of one work-unit of type D3-L. The noticeable points on the reviews and the DCIF activity report are appended to the Weekly Collaboration report as already specified above (7.3.1 / Work Unit type D3-L).

7.3.4 Collaborations: CAD Working Group Workshop Organization:

Description: This activity consists in providing support for the CAD Working Group Workshops, and it will be broken down in 3 phases with the associated deliverables:

- Preparatory phase: Identification of relevant topics, collection of requests from all participants, Contribution to the agenda definition and its adoption by the workgroup.
- Workshop's time: During the workshop itself, the contractor shall act as the secretary for the workshop: Supports the presentation, supports the required connections of presenters, collates and records the presentations, collects notes of the interventions, constructs the actions list decided by the workshop participants, supports the drafting of the workshop minutes, executive summary and conclusions. The workshop itself is usually a 3 days venue on ITER site. Due to sanitary measures imposed by the COVID-19 pandemic, it is highly probable that the next workshop would be organized in the format of 5 remote sessions of 3 to 4 hours held in the middle of the day, Cadarache time.
- Workshop's wrap-up: After workshop's adjourn, the contractor shall support the Workshop wrap-up by the following actions: To make the necessary editorial cleaning to the chronological minutes, the executive summary and the conclusions, publish them in IDM and follow-up their review and approval. The actions list will also be redorded and transferred to the DCIM actions management tool. The follow-up of these actions until their completion is also part of the contractor's duties

Expected deliverables and associated work units: To facilitate the deliverables monitoring, 3 synthetics reports summing the outputs of each phase of the workshop are expected to be identified as deliverable to be approved by the TRO for this sub-task. These 3 deliverables will be checked with regards to the consistence of all the outputs already mentioned within the chapter above. Those IDM records are deliverables to be approved by the DO Collaboration Responsible Officer and officialise the delivery of 3 work-units of type D2-XL.

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7.4 Definition of Work Units for Area #3: Support to Diagrams and Drawings management, SMDD

7.4.1 *Business requirements and functional specification of interfacing features Authoring tools/SMDD or SMDD additional features:*

Description: These work-units will be used for the definition of the refinement of business requirements and functional definition of the interfacing features between the CAD tools where the Diagrams and drawings are authored with SMDD. The general principles have already been generally defined in previous contracts, but the landscape on CAD platforms and Configuration Management tools or Engineering Data Management tools evolving quickly, those principle require a further detailed description and updates before implementation, leading to the types of tasks listed below. A contribution to the technical discussions to be held with the IT and Functional administrators of the CAD Platforms is part of the contractor's duties.

- Analysis and Initial proposal for Business Requirements update and Functional specification update, involving joint actions with the CAD platform's administrators.
- Assistance to the SMDD RO in the organization and reporting of these joint actions
- Final writing of Functional specification, and report of the associated required software functionalities to be developed throughout the next sub-tasks.

Expected deliverables and Associated work units: One Self-standing document approved by the CRO, standing either for one Business Requirements List, or for one Functional Specification, will represent one deliverable associated to one work unit of type D2-XL

7.4.2 *Writing of the technical Specifications supporting the development of functionalities identified above:*

Description: These work-units will be used for the writing of the technical specifications (and follow-up of their review until approval, including the integration of review comments) for the software functionalities identified either through the Functional specifications issued from the sub-task 7.4.1 above, or through the CRO's inputs. This sub-task comprehends the following type of activities:

- A contribution to the technical discussions to be held with the administrators of the CAD Platforms is part of the contractor's duties.
- Drafting of the Technical specification
- Organization of the review of technical specification by the CAD Collaboration Responsible Officer, the CAD Administrator of each interfacing CAD platform, and the IT system administrators.
- Finalization of the technical specifications subsequently to the reviews, and follow-up of their reviews, up to their approval.

Expected deliverables and Associated work units: One Self-standing document approved by the CRO, standing for one technical Specification, will represent one deliverable associated to one work unit of type D4-XL

7.4.3 *Follow-Up of the developments and Commissioning of the new features for SMDD*

Description: These work units will comprise the following elements: Contribution to the initial kick off required for each development, IT Tickets creation, explanatory meetings, prioritization

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and interface for scheduling of the developments, answers to requests from IT department for further details, progress reporting on these developments, tests and reporting of functionalities delivered by IT.

Expected deliverables and Associated work units: One report summarizing the activities described above, referencing all recorded documents (Specifications, MoMs, progress reports, Tests protocols, Tests results, and any other document relevant for traceability of the considered developments) will conclude the development follow-up, and will represent one deliverable associated to one work unit of type D5-L. Worth noting that, acknowledging the high number of interfaces in this sub-task, and the varying timeframe given to different developments, several work units could be issued for one development, after justification provided to the CRO.

7.4.4 Administration of SMDD

Description: These work-units will be used for the operational administration of the SMDD application: Endorsing the role of a “super-user” for the SMDD application system, the contractor will execute the administrative actions required for the daily operations of SMDD users: Creation of top folders, user rights management, preparatory actions for big submissions, etc... These work-units will be triggered through IO ticket systems. The proper operation of the ticket (assignment, redirection when opportune, closure, etc...) and the record of all relevant technical information in the ticket, is part of the contractor’s duties.

Expected deliverables and Associated work units: Those work units are triggered and monitored through a Jira ticketing system, the completion of the ticket represents one work unit of type C3-XS

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7.4.5 *Direct support to users on SMDD basic functionalities (Level 1 Support):*

Description: These work-units will be used for the direct support of SMDD users reporting issues or asking for guidance on the usage of the application basic functionalities. These work-units will be triggered through IO ticket systems. The proper operation of the ticket (assignment, redirection when opportune, closure, etc...) and the record of all relevant technical information in the ticket, is part of the contractor's duties.

Expected deliverables and Associated work units: Those work units are triggered and monitored through a Jira ticketing system, the completion of the ticket represents one work unit of type C1-S

7.4.6 *Support to the SMDD user for the preparation or execution of drawings submission in SMDD and associated Quality checking and control:*

Description: These work units will comprise the activities listed below, as following an SMDD user's request recorded through a Jira ticket:

- Identification of the Drawings submissions needs, identification of the specificities of each submission, so the submissions of diagrams and drawings together with the associated BOMs represent a consistent data set on configuration management standpoint: Diagrams and Drawings Title blocks content, identification, versioning, association to BoMs and components, etc...
- SMDD users can be from IO, from DA or from ITER design and construction contributors to provide advisory services for heavy submissions (hundreds of diagrams and drawings) Establishment of actions plans targeting a streamlined submission for the SMDD users
- Follow-up of the submissions performed by the SMDD users, technical support of the users on the handling of the dedicated software (SMDD)
- Prior submission by the users: Quality checking of the incoming data and linked data, Launching and follow-up of corrective actions.
- Post-submission: To perform checks of the submitted data, and provide recommendations for corrections. Construction of a statistic basis, based on sample surveys, allowing the control of quality and the establishment of the mid-term strategies for corrective actions and users 'education about Diagrams and Drawings management.
- The types of checks performed in this contract will be focused on formalism and compliance to diagrams and drawings standards, in particular:
 - o The identification of diagrams/drawings and the metadata associated to their identification(values in the title-blocks and associated metadata),
 - o The compliance of the drawings structure with configuration control principles: structure of the drawings and data, relation between Diagrams/drawings and represented components and parts, and consistency with the BoM required to be associated.
 - o The applied reviews Workflow and their compliance to the sign-off authority of Iter.
 - o The adequacy between the diagrams/drawings content and the design maturities in which they are located.
- All verification related to the design solution depicted by the diagrams and drawings are excluded from the checks to be performed in this contract, as they are the duty of the design verifier named in the Drawing title block. E.g.1: The contractor will check that tolerances are

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given for a Part drawing at design maturity 'Final Design', but the contractor is not requested to assess the tolerances themselves and their consistency with the design solution. E.g.2: The contractor will check that a diagram presented for a Preliminary design Review contains the components identification (Functional references), but the contractor is not requested to check that the components are logically organized along a piping line...

Expected deliverables and Associated work units: This task category can trigger several work units sizes depending on the number of drawings to be processed, as follows :

- C2-S : <10 drawings
- C2-L : <100 drawings or less in case of quality issues identified
- C2-XL : <500 drawings or less in case of quality issues identified

7.4.7 Definition of Methods and Guidelines for specific user cases:

Description: These work units will be used for the activities required to respond the needs listed below, and identified by an SMDD user's request recorded through a Jira ticket:

- Specific cases of submission/SMDD usage are regularly submitted to the SMDD administrators by the SMDD users. When opportune, the methods/guidelines answering at best the needs expressed by the SMDD user shall be documented by the contractor in a how-to document.
- Some current examples of specific user cases: Involvement of SMDD within the HIT(Holistic Integration Team) multi CAD approach, Support to the Integrated data loading (IDL) and in the BOM management for Handover to construction, System-to-System pilots....
- The relevance of producing a how-to will be decided by the IO SMDD Administrator, and submitted to the contractor through a dedicated IO ticket.

Expected deliverables and Associated work units: Those work units are triggered and monitored through a Jira ticketing system, the completion of the ticket represents one work unit of type C2-L

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8 Deliverable Quantities

The Estimated effort for completion of the ticket or Work Unit is encoded as follows:

Size	Estimated effort (hour)
XS	1
S	4
M	8
L	16
XL	40

The tables below show the expected quantities of tasks in each category for the duration of the contract, i.e. 36 months, with associated Work Units. See ref [7] for more information about Work Units, including an estimation of associated effort.

T0= Signature of Contract by both Parties (Section 5.1)

8.1 Quantities for Area of Activities #1: CAD Exchanges Support

CAD Exchange Support - WU quantities	Quantities covering an equivalent effort of 6 FTE over 36 months (T1= KoM)		
Work Unit Name	WU Type	Estimated effort (days)	Quantity
DET Administration	C1-XS	0.125	2550
DET handling Type 1	C1-XS	0.125	2250
DET handling Type 2	C1-M	1	210
DET handling Type 3	C1-XL	5	90
Execution of DCIM actions	C1-S	0.5	150

8.2 Quantities for Area of Activities #2: CAD Collaboration Assistance

CAD Collaboration Assistance - WU quantities	Quantities covering an equivalent effort of 3 FTE over 36 months (T2=KoM)		
Work Unit Name	WU Type	Estimated effort (days)	Quantity
Assistance for CAD Exchanges coordination	D2-M	1	48
Support to CAD Collaboration Coordination/Weekly	D3-L	2	138
Support to CAD Collaboration Coordination/Quarterly	D3-M	1	12
Support to CAD Collaboration Coordination/Yearly	D3-XL	5	3
Contribution to Specification of CAD Collaborations	D3-L	2	138
CAD Working Group Workshop Organization	D2-XL	5	9

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8.3 Quantities for Area of Activities #3: Support to Diagrams and Drawings Management and SMDD

CAD Collaboration Assistance - WU quantities	Quantities covering an equivalent effort of 3 FTE over 36 months (T3=KoM)		
Work Unit Name	WU Type	Estimated effort (days)	Quantity
Business Requirements and Functional Spec.	D2-XL	5	18
SMDD Technical Specifications	D4-XL	5	18
SMDD Developments Follow-Up	D5-L	2	60
Administration of SMDD	C3-XS	0.125	240
SMDD User Support L1	D3-L	0.5	300
SMDD Submission Preparation – Low Volume	C2-S	0.5	72
SMDD Submission Preparation – Low Volume	C2-L	2	18
SMDD Submission Preparation – Low Volume	C2-XL	5	12
Definition of Methods and Guidelines	C2-L	2	24

KoM of each area is defined in the tables above as (T1, T2 & T3)

9 Quality Assurance requirements

The Quality class under this contract is Design control – Class 2 and [Ref 1] GM3S section 8 applies in line with the defined Quality Class.

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, in accordance with [ITER_D_258LKL - Working Instruction for the Qualification of ITER safety codes](#)

10 Safety requirements

No specific safety requirement related to PIC and/or PIA and/or PE/NPE components apply.

11 Specific General Management requirements

Requirement for [Ref 1] GM3S section 6 applies completed/amended with the below specific requirements:”

11.1 Contract Gates

The contract gates are defined in [Ref 1] section 6.1.5, this scope of service call for the following technical gates:

- KOM per area
- Close-out Meeting per area

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11.2 Meeting Schedule

Meetings will be held to monitor task status, progress, and possible issues. A preliminary organization, initiated at the start of the contractors' activities, will include a weekly 1-hour meeting to review and manage tasks. During task execution, the CRO or the contractor may request to revise this initial organization to optimize it, which may vary between different areas of activity.

11.3 CAD design requirements

N/A

11.4 Other Requirements

Certain tasks will require proficiency in tools and processes, as described below:

11.4.1 For CAD Exchanges Support

- To execute this task with an acceptable level of autonomy, and to obtain the necessary database permissions, the contractor must be trained and certified on IO Enovia, PBS-A level
- The task implying many repetitive and serials tasks, a number of automations on are coded and adapted to the special needs of the CAD Exchange process, the automations tasks being requested through the DCIM actions (See 7.2.5). In this frame, some knowledge and experience in automating office tasks represent a significantly valuable capability of the contractor.
- Written and verbal English communications skills are required for collaboration with different teams and stakeholders.

11.4.2 For CAD Collaboration Assistance

The contractor shall demonstrate the following technical experience:

- Significant experience in Design Office / CAD Collaboration area: CAD design, geometrical configuration & integration, Exchange of CAD data, CAD Quality Assurance and Checking... Ideally this experience would have been grown in multi-national project(s), preferably in fusion and/or nuclear energy involving large components and structures,
- Experience in design activities coordination: definition & control of CAD Work-Plan, CAD activities supervision, definition of Key Performance Indicators, advanced CAD data-base management, CAD QC of internal & external deliverables, support of the proper usage of the CAD infrastructure.
- Experience in CAD design support activities and/or Information Technology would be an advantage: CAD designers support, software administration and support, IT Network administration or Follow-up.
- Ability to work effectively in a multi-cultural environment.
- Language requirements: Fluent in spoken and written English
- Computer and IT skills:
 - Knowledge of MS Office standard (Word, Excel, Visio, PowerPoint, and Outlook) is required;
 - Experience in design work involving an advanced CAD system, including CATIA V5, is required.
 - Experience with CAD data management and dedicated data-bases like ENOVIA V5, is required

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11.4.3 For Diagrams and Drawings Management

The contractor shall demonstrate:

- An in-depth knowledge of Diagrams and Drawings requirements, Component management and identification, Bill of Materials Management.
- A thorough experience about the best industrial practices for diagrams and drawings content, both in Mechanical design and in Plant design.
- A good conceptual knowledge of the CAD software and CAD Data management tools used in IO: CATIA and Enovia, AVEVA, SSD. “Conceptual” in this sentence means that the contractor shall demonstrate that he masters the concepts put in place in these software (Software philosophy, CAD Data structure, versioning and lifecycle, workflows, etc...), though he is not required to demonstrate an efficient CAD designer usage of these tools.
- A Drawings/Diagrams Data management expertise for the further developments and administration of SMDD.
- The basic knowledge of Configuration management would be appreciated
- The above capabilities and experiences have to be ensured by the contractor’s representative performing the task with a high level of autonomy, this need for autonomy being implied by the short reactivity time required for most of the work units.

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