IDM UID
SWAFCG
VERSION CREATED ON / VERSION / STATUS
02 Nov 2016 / 1.0 / Approved
EXTERNAL REFERENCE / VERSION

Technical Specifications (In-Cash Procurement)

Technical specification CATIA-ENOVIA QA and QC

The present technical specification defines the needs of CIO/DO in CATIA/ENOVIA QA and QC tasks as well as in the implementation of DO processes such as CAD collaboration and Catalogues production

Table of Contents

1 Purpose

The present technical specification defines the needs of CIO/DO in CATIA/ENOVIA QA and QC tasks as well as in the implementation of DO processes such as CAD collaboration and Catalogues production

The present scope is divided in 3 phases. Phase 1 and 2 will be options release at the closure of the previous one.

2 Scope

2.1 The ITER Project

The ITER project aims to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes and to gain the knowledge necessary for the design of the next stage device.

The ITER project is organized as an international research and development project jointly funded by its seven Members; the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA.

ITER is being constructed in Europe, at Cadarache in southern France, which is also the location of the headquarters of the ITER Organization (IO).

During ITER construction, most of its components will be supplied "in-kind" by the ITER Members. These in-kind contributions are being managed through a Domestic Agency (one per ITER Member) located within the Member's own territory.

The working language of the ITER Project is English.

More details about the Project Organization, The Domestic Agencies, the IO location and other different aspects of the Organization are available on the website: www.iter.org.

2.2 Scope of the Task

The scope of the task is to provide experimented contribution in the management of the IO CAD database (ENOVIA)

The task based on Work-units (WU) approach includes:

a) CATIA/ENOVIA QA and QC tasks
b) Implementation of specific IO Processes
c) Contribution to issue solving

2.2.1 CAD Scope

The task deals with all IO CAD data. As a consequence the task will be performed directly in the database.

2.2.2 CAD context

N/A

2.3 Out of Scope

N/A

3 Definitions

CCT : CAD Core Team
DA : Domestic Agency
DECO : DEsign COordinator
DET : Data Exchange Tasks
DER : Data Exchange Request
FR : Functional Reference
IO : ITER Organization
RO : Responsible Officer
WP : Work Package
WU : Work-Unit

- 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 section 7.2

5 Estimated Duration

The contract will be place by phase:

- Phase 1: 12 months duration
- Phase 2: 12 months duration
- Phase 3: 6 months duration

Duration of the phase are accounted from Contract signature.

This duration is indicative as the actual implementations of Work-units will define the actual duration.

IO does not commit in ensuring the continuity of the requests and a stable work-load for the contractor.

6 Location of Services

All services described and requested in section 2 and 7 shall be performed at IO premises, in order to ensure the same access to the database than DECOs

7 Work Description

7.1 General

This task will be implemented through Work-units.

Each Work-unit consists in a well-defined task based on clear inputs and always leading to the same deliverable.

The Work-units will be launched by DECOs or relevant DO RO/CCT through email including required inputs.

Estimated Work-Units durations are only indicative

PBSA certification is mandatory to cover the tasks described in the present specification.

7.2 Work-units description

The present section defines only the possible work-units and consists in typical tasks description.

Exact distribution of the phases is in section 11.

The Work-units defined in the scope of this contract are as follows:

7.2.1 CATIA/ENOVIA QA/QC, DO processes related to DECO – Phase 1, 2 & 3

Indicative quantities are given in section 11.

The detailed processes related to the Work-units are described in the following documents:

ITER_D_282BVV - ITER CAD Quick Reference Guide - CV5 EV5

ITER_D_2FBLRJ - CAD Data Promotion Checklist

ITER_D_2DWU2M - Procedure for the Management of CAD Work & CAD Data (Models and Drawings)

ITER_D_AC4CZT - How to use Mass Promotion tool with xls input

ITER_D_EFHRTC - How to Use the CONTEXT Branch Log E-Ticket

WU type	Name/Scope	WU Criteria	Input	Deliverables	Estimated duration (Hours)	Maximum time of delivery
A.1	Cursory Check	Up to 5 WP	B.o.M or Enovia tree or filter capture	- All reports according to the Promotion Check-list	1	4 hours
A.2	Cursory Check	Between 6-15 WP	B.o.M or Enovia tree or filter capture	- All reports according to the Promotion Check-list	4	1 day
A.3	Cursory Check	Above 15WPs * Note: For more WPs, combination of WUs will be used	B.o.M or Enovia tree or filter capture	- All reports according to the Promotion Check-list	8	2 days

B.1	Promotion	Up to 10 WP InDraft/Incheck /Approved (as one unit) - Using Mass production tool * Note: For more WPs, combination of WUs will be used	B.o.M or Enovia tree or filter capture	- All CAD part promoted B.o.M With status identification/ Enovia screenshot /filter capture	0.5	4 hours
B.2	Promotion	Up to 10 WP InDraft/Incheck /Approved (as one unit) - Manual promotion (in case of failure of the mass production tool) * Note: For more WPs, combination of WUs will be used	B.o.M/Enovia tree or filter capture	- All CAD part promoted B.o.M With status identification/ Enovia screenshot /filter capture	1.5	1 day
B.3	Remote Promotion	Up to 10 WP InDraft/Incheck /Approved (as one unit) - Using Mass production tool * Note: For more WPs, combination of WUs will be used	B.o.M or Enovia tree or filter capture	- All CAD part promoted B.o.M With status identification/ Enovia screenshot /filter capture	1	1 day
B.4	Remote Promotion	Up to 10 WP InDraft/Incheck /Approved (as one unit) - Manual promotion (in case of failure of the mass production tool) * Note: For more WPs, combination of WUs will be used	B.o.M/ Enovia tree or filter capture	- All CAD part promoted B.o.M With status identification/ Enovia screenshot /filter capture	3	2 days

C.1	Context branch update	Synchronization 1 unit -10 WPs * Note: For more WPs, combination of WUs will be used	B.o.M/ Enovia tree or filter capture	- Context branch updated - E-Ticket issued	0.5	4 hours
C.2	Context branch update	Update instance relocation, design change. Maintenance Enovia branch to be consistent with In-work branch (Plant design) and PBS	B.o.M/ Enovia tree or filter capture	- Context branch updated - E-Ticket issued	1	1 day
D.1	Context definition	N/A	Description of the task to be performed	- B.o.M of the required context, Enovia tree - Possible comments	1	1 day
E.1	"DECO" prep. of CAD Exchange – Design data	1 unit = up to 10 WP	Description of the task to be performed	- TSO performed - B.o.M of the data to be exchanged	1	1 day
F.1	Meeting attendance (as DECO representative)	Meeting below 1Hour	Invitation	- Minutes of meeting	1	N/A
F.2	Meeting attendance (as DECO representative)	Meeting between 1 and 2 hours	Invitation	- Minutes of meeting	2	N/A
G.1	CAD Data QA correction	Amount below 10 WPs (1 Unit) * Note: For more WPs, combination of WUs will be used	Enovia tree + Correction to be performed	- Corrections performed - .ppt highlighting corrections performed	2	1 day
G.2	CAD integration correction / update	For 1 area	Scope description clearly highlighting context and objectives	Updated integration supported by report	8	2 days

H.1	ENOVIA Tree update	Amount below 10WPs * Note: For more WPs, combination of WUs will be used	Enovia tree	- Updated Enovia tree/B.o.M	0.5	4 hours

It has to be noted that W.U type G.2 can consist in CAD model simplification aiming at analysis (using SpaceClaim software)

7.2.2 CAD Collaboration

Indicative quantities are given in section 11.

The related DET procedure: Procedure for the design office activities related to CAD Data Exchange Task (2NCULZ)

The templates to be used:

DET template forms are available per organization:

Data Exchange Task (DET) Template for CNDA (QCJJC3)
Data Exchange Task (DET) Template for EUDA (QEEYFY)
Data Exchange Task (DET) Template for INDA (QB542S)
Data Exchange Task (DET) Template for IO (QPY8YS)
Data Exchange Task (DET) Template for JADA (QCLB83)
Data Exchange Task (DET) Template for KODA (QD3URB)
Data Exchange Task (DET) Template for RFDA (QE6CMP)
Data Exchange Task (DET) Template for USDA (QEFEUP)

A how-to describes how to fill the form: How to fill a DER - plus the DET process (25MAL5)

WU type	Name/ Scope	WU Criteria	Input	Deliverables	Estimated duration (Hours)	Maximum time of delivery
I.1	CAD exchange: DET execution - Large Context	Up to 30 WP * Note: can be managed as result of Enovia search, and in interface with DECO	DER passed by the CAD exchanger	- DET form completed - DET BOMs, and zipped data set for the asynchronous exchange.	12	3 days
I.2	CAD exchange: DET execution - Design Data	Up to 50 WP * Note: As complementary action of the E.2	DER passed by the CAD exchanger	- DET form completed - DET BOMs, and zipped data set for the asynchronous exchange.	4	3 days

7.2.3 CAD catalogues production

Indicative quantities are given in section 11.

Based on Tickets assign to contractor from the 3D Catalogue Request Tickets , Produce or modify CATIA Plant Catalogue to fulfil ticket request.

Based on evolution or modification of the Plant CAD Standard Part contingency, Update the relevant documentation under 01 PLANT Catalogue Documentation which include *description sheet* for each standard part family and catalogue browser for each discipline (ex: Piping Equipment Catalogue Browser (2EYYKE))

Associated user guides:

00 - Standard components catalogue supply (436B5D)

01 - 3D Catalogue Request management (439XB9)

02 - Standard components CAD and documentation production (2EWCHG)

03 - Catalogue publication (453QNZ)

WU type	Name / Scope	WU Criteria	Input	Deliverables	Estimated duration (Hours)	Maximum time of delivery
J.1	CAD Catalogue production	See tickets examples in Appendix A	CAD Catalogue ticket	CAD Family of part and associated documentation created	24	10 days
J.2	CAD catalogue maintenance	See tickets examples in Appendix A	CAD Catalogue ticket	CAD Family of part and associated documentation updated	4	5 days

8 Input Data

Input data are defined per type of Work-units in section 7.

9 Responsibilities

9.1 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, schedule the processes (including CAD).

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 Work Packages, to agree and define all the correction actions to take in place.

9.2 Contractor's responsibilities

The Contractor shall nominate a technical single point of contact that will in particular receive all Work-units requests and provide as feedback an accurate delivery date.

The Contractor shall ensure that he complies with the provisions of the Contract in particular with the following:

- The Contractor shall guaranty 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 be in charge of the training & coaching of all its resources.
- The contractor shall provide an organization suitable to perform the work as describe in this specification;
- The contractor shall work in accordance with the QA plan approved by IO;
- The contractor shall perform the activities accordingly to this specification taking into account all relevant additional documents and IO processes into account (hand books, export control, intellectual properties, …); The Contractor shall be responsible to produce and manage, using the ITER software platform, all the documents listed in chapter 8.

Prior to the start of work on each activity, the Contractor shall review the input technical information provided to it by IO for completeness and consistency, and shall advise the IO representative of any deficiencies it may find. The contractor shall not be responsible for errors in the input technical information which could not be reasonably detected during such review; duration of this review will be agreed between Contractor and IO representative and will have no impact on the delivery schedule.

10 Work Monitoring

The Contractor will provide a weekly report of its activities highlighting in particular:

- Consumption of Work-units
- Average, shorter and longer time of implementation per type of Work-units
- Possible issues
- Possible proposals for improvements

Schedule is defined according to the requirements stated in section 10 and the individual requests of Work-units.

The Contractor has to maintain a detailed schedule of the Work-units launched and planned. This schedule should be permanently available and will be the basis for the TRO to define possible priorities

11 List of Deliverables / Outputs

11.1 Phase 1

WU type	Name/Scope	Estimated duration (Hours)	Maximum delivery	Indicative quantity
A.1	Cursory Check	1	4 hours	1800
A.2	Cursory Check	4	1 day	500
A.3	Cursory Check	8	2 days	220
B.1	Promotion	0.5	4 hours	1250
B.2	Promotion	1.5	1 day	650
B.3	Remote Promotion	1	1 day	450
B.4	Remote Promotion	3	2 days	250
C.1	Context branch update	0.5	4 hours	1800
C.2	Context branch update	1	1 day	1000
D.1	Context definition	1	1 day	700
E.1	"DECO" preparation of CAD Exchange – Design data	1	1 day	700
F.1	Meeting attendance (as DECO representative)	1	N/A	400
F.2	Meeting attendance (as DECO representative)	2	N/A	110
G.1	CAD Data QA correction	2	1 day	550
G.2	CAD integration correction / update	8	2 days	36
H.1	ENOVIA Tree update	0.5	4 hours	390
I.1	CAD exchange: DET execution - Large Context	12	3 days	21
I.2	CAD exchange: DET execution - Design Data	4	3 days	21
J.1	CAD Catalogue production	24	10 days	21
J.2	CAD catalogue maintenance	4	5 days	20

Should the Task quantities listed above and the associated deliverables be adjusted in content and priority, ITER and the Contractor shall arbitrate together in order to reach appropriate measures. The changes and decisions shall be recorder and formalized (e.g. using minutes of meetings).

11.2 Phase 2

WU type	Name/Scope	Estimated duration (Hours)	Maximum delivery	Indicative quantity
A.1	Cursory Check	1	4 hours	1800
A.2	Cursory Check	4	1 day	500
A.3	Cursory Check	8	2 days	220
B.1	Promotion	0.5	4 hours	1250
B.2	Promotion	1.5	1 day	650
B.3	Remote Promotion	1	1 day	450
B.4	Remote Promotion	3	2 days	250
C.1	Context branch update	0.5	4 hours	1800
C.2	Context branch update	1	1 day	1000
D.1	Context definition	1	1 day	700
E.1	"DECO" preparation of CAD Exchange – Design data	1	1 day	700
F.1	Meeting attendance (as DECO representative)	1	N/A	400
F.2	Meeting attendance (as DECO representative)	2	N/A	110
G.1	CAD Data QA correction	2	1 day	550
G.2	CAD integration correction / update	8	2 days	36
H.1	ENOVIA Tree update	0.5	4 hours	390
I.1	CAD exchange: DET execution - Large Context	12	3 days	21
I.2	CAD exchange: DET execution - Design Data	4	3 days	21
J.1	CAD Catalogue production	24	10 days	21
J.2	CAD catalogue maintenance	4	5 days	20

Should the Task quantities listed above and the associated deliverables be adjusted in content and priority, ITER and the Contractor shall arbitrate together in order to reach appropriate measures. The changes and decisions shall be recorder and formalized (e.g. using minutes of meetings).

11.3 Phase 3

WU type	Name/Scope	Estimated duration (Hours)	Maximum delivery	Indicative quantity
A.1	Cursory Check	1	4 hours	850
A.2	Cursory Check	4	1 day	240
A.3	Cursory Check	8	2 days	100
B.1	Promotion	0.5	4 hours	600
B.2	Promotion	1.5	1 day	300
B.3	Remote Promotion	1	1 day	200
B.4	Remote Promotion	3	2 days	110
C.1	Context branch update	0.5	4 hours	850
C.2	Context branch update	1	1 day	450
D.1	Context definition	1	1 day	330
E.1	"DECO" preparation of CAD Exchange – Design data	1	1 day	330
F.1	Meeting attendance (as DECO representative)	1	N/A	150
F.2	Meeting attendance (as DECO representative)	2	N/A	50
G.1	CAD Data QA correction	2	1 day	250
G.2	CAD integration correction / update	8	2 days	16
H.1	ENOVIA Tree update	0.5	4 hours	180
I.1	CAD exchange: DET execution - Large Context	12	3 days	10
I.2	CAD exchange: DET execution - Design Data	4	3 days	10
J.1	CAD Catalogue production	24	10 days	10
J.2	CAD catalogue maintenance	4	5 days	10

Should the Task quantities listed above and the associated deliverables be adjusted in content and priority, ITER and the Contractor shall arbitrate together in order to reach appropriate measures. The changes and decisions shall be recorder and formalized (e.g. using minutes of meetings).

All documents shall be submitted in English.

12 Acceptance Criteria

All deliverable shall be reviewed in the IO system:

- IDM for relevant output
- ENOVIA for relevant output

An IDM/DWM folder to store the input and related output will be specified at the kick-off of each activity.

The process of acceptance is driven by IO internal process of approval, until this process is completed, modifications can be requested of the Contractor. The IO approval process involves all the interfacing system concerned.

The form of deliverable is according to the formalized in Section 11. Any deviations, if not previously agreed, may lead to the deliverable being refused.

A BOM of the CAD data produced and used as context in the frame of Task (when required) shall be delivered by the contractor identifying the delivered life cycle state of the data.

The Acceptance of the CAD data will be performed by the IO-DO in accordance with the promotion process (Procedure for the Promotion of CAD Data from In-Work to Draft Status (28LVHH))and the criteria as defined in CAD Requirements & Deliverables Relative to Functional Design Milestone (P49NTN).

The maximum time for IO acceptance / comments is 20 working days after the storage (+IDM email) of the deliverables in IDM. After this period if no action has been performed by the IO, the deliverable shall be considered as accepted.

Non-CAD deliverables (graphics, Powerpoint Documents, etc) will be reviewed upon delivery by the IO RO/RE and will be accepted if compliant with the requirements advised by the RO at the start of the task, all these document shall follow a IDM workflow.

In case of non-compliance / conformity of a deliverable or a set of deliverables, the Contractor shall correct them and re-submit them for review and acceptance; resubmission shall be at contractor's cost.

12.1 Requirements for the Models to be checked

See section 11

13 Payment Conditions, Amendments and Liquidated Damages

See general and special contractual conditions.

14 IO CAD requirements

The Contractor shall ensure that all designs, CAD data and drawings delivered to IO comply with the Procedure for the Usage of the ITER CAD Manual (2F6FTX),

The reference scheme is for the Contractor to work in a fully synchronous manner on the ITER CAD platform (see detailed information about synchronous collaboration in the Specification for CAD data Production in ITER direct contracts (P7Q3J7).
This implies the usage of the CAD software versions as indicated in CAD Manual 07 - CAD Fact Sheet (249WUL) and the connection to one of the ITER project CAD data-bases. Any deviation against this requirement shall be defined in a Design Collaboration Implementation Form (DCIF) prepared and approved by DO and included in the all-for-tender package. Any cost or labour resulting from a deviation or non-conformance of the Contractor with regards to the CAD collaboration requirement shall be incurred by the Contractor itself.

CAD Requirements & Deliverables Relative to Functional Design Milestone (P49NTN) introduces CAD methodologies and details on required CAD deliverables for deliverable based Task aiming at Functional Design stage completion. **The non-respect of these requirements can lead to withhold of deliverable acceptance.**

On the top of the software listed in the documents above, the contractor shall be able to perform activities using the following software:

- CATIA Equipment and system modules
- AVEVA E3D
- SpaceClaim
- AutoCAD

15 Specific requirements and conditions

The contractor shall ensure:

15.1 Resources availability:

As stated in section 7.1, PBSA certification is mandatory to perform the task.

Due to the criticality of the task and the expertise required contractor shall be able to provide:

- Minimum 6 PBSAs as part of the main team
- Minimum 1 PBSA as back up
- Minimum 3 DESA with more than 6 months experience as DESA as back-up

15.2 No conflict of interest:

- As part of the task consists in CAD data checking on behalf of IO, the contractor shall not be involved in any other CAD activity in IO.
- The contractor selected will be disqualified for any other CAD task for IO.

16 Quality Assurance (QA) requirement

16.1 Overview

The Contractor should have ISO 9001 accredited quality system. Otherwise the Contractor shall have QA Program approved by the IO.

The general requirements are detailed in ITER Procurement Quality Requirements (ITER_D_22MFG4).

Prior to commencement of the work, a Quality Plan which complies with Procurement Requirements for Producing a Quality Plan (ITER_D_22MFMW) shall be submitted to IO for approval with evidence of the above. The Contractor's Quality Plan shall describe the organisation for tasks; roles and responsibilities of workers involved in; any anticipated sub-contractors; and giving details of who are the independent checkers of the activities.

Where any deviation is requested or non-conformity has happened from the Technical Specification, Contractors Deviations and Non Conformities the ITER Requirements Regarding Contractors Deviations and Non Conformities (ITER_D_22F53X) shall be followed.

Documentation developed as the result of this task shall be retained by the Contractor of the task for a minimum of five (5) years and then may be discarded at the direction of the IO.

IO will monitor implementation of the Contract's Quality Plan. Where necessary, IO will assess the adequacy and effectiveness of the quality system specified in the Quality Plan through surveillance or audit. Where condition adverse to quality is found during monitoring, IO may request to the Contractor to take corrective action.

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 Quality Assurance for ITER Safety Codes (ITER_D_258LKL). Where applicable, Software Qualification Policy (KTU8HH v1.2) shall be taken into consideration to ensure quality and integrity of software prior to application.

16.2 Task classification

Quality Class for this Activity according to *Quality Classification Determination*: QC3

17 Safety requirements

ITER is a Nuclear Facility identified in France by the number-INB-174 ("Installation Nucléaire de Base").

For Protection Important Components and in particular Safety Important Class components (SIC), the French Nuclear Regulation must be observed, in application of the Article 14 of the ITER Agreement.

In such case the Suppliers and Subcontractors must be informed that:

- The Order 7th February 2012 applies to all the components important for the protection (PIC) and the activities important for the protection (PIA).
- The compliance with the INB-order must be demonstrated in the chain of external contractors.
- In application of article II.2.5.4 of the Order 7th February 2012, contracted activities for supervision purposes are also subject to a supervision done by the Nuclear Operator.

For the Protection Important Components, structures and systems of the nuclear facility, and Protection Important Activities the contractor shall ensure that a specific management system is implemented for his own activities and for the activities done by any Supplier and Subcontractor following the requirements of the Order 7th February 2012 [20] (Please refer to ITER_D_4EUQFL - Overall supervision plan of external interveners chain for Protection Important Components, Structures and Systems and Protection Important Activities).