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**Technical Specifications (In-Cash Procurement)**

# Technical specification for CAD plant Software Infrastructure and 3D Module Support and Administration I

This Specification concerns the execution of several deliverables aiming at the Improvement and User Support of the ITER AVEVA Suite excluding ENGINEERING and DIAGRAMS application Support. This shall enable AVEVA CAD design activities by designers for the Piping, Tubing, HVAC, Electrical, and Civil engineering discipline.

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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

This Specification concerns the execution of several deliverables aiming at the Improvement and User Support of the ITER AVEVA Suite excluding ENGINEERING and DIAGRAMS application Support. Deliverables by means of mainly user support and customization will ensure not only the enrichment of current competence of the AVEVA software administration and user group, but also the extension of setup of following AVEVA Infrastructure and AVEVA/E3D related established software. This shall enable implementation of ITER CAD design for the Piping, Tubing, HVAC, Electrical, and Civil engineering discipline.

# 3 Acronyms & Definitions

## 3.1 Acronyms

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

| Abbreviation | Description |
|---|---|
| CRO | Contract Responsible Officer |
| GM3S | General Management Specification for Service and Supply |
| IO | ITER Organization |
| PRO | Procurement Responsible Officer |
| CAD | Computer Aided Design |
| DO | Design Office |
| E3D | CAD Tool dedicated to 3D plant design |
| IDM | ITER Document Management system |
| IT | Information Technology |
| KoM | Kick Of Meeting |
| WU | Work Unit |
| DIAGRAMS | CAD Tool dedicated to intelligent Piping and Instrumentation Diagram |
| ENGINEERING | Tool dedicated to the management of component characteristic synchronize with DIAGRAMS and E3D |
| L1 Location | Contractor shall perform service at IO site |
| L2 Location | Contractor’s premises where the offices are at distance no longer than 1,500 Km from the IO Site |
| L3 Location | Contractor’s premises where the offices are at distance higher than 1,500 Km from the IO Site |

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# 4 Applicable Documents & Software's

## 4.1 Applicable Documents

This 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 | AVEVA E3D CAD Manual (8QZS2R) | 8QZS2R | 2.2 |
| 3 | AVEVA REFERENCE DOCUMENT INDEX | YNJF5H | 2.6 |
| 4 | AVEVA Administration | SLTV47 | Folder |
| 6 | IGP2 Datasheet on MDB and Model Tree | 4RFFS6 | 3.5 |
| 7 | Forms and Templates - Design Office | 29FWSJ | Folder |

## 4.2 Applicable Software and Programming language

In the frame of this technical specification, the contractor will have to deal with the following Software and programming language used by the ITER AVEVA CAD Infrastructure:

AVEVA E3D 3.1 (Model; Draw; Isodraft; Paragon; Propcon )
AVEVA ADMINISTRATION 2.1 (Admin; Lexicon)
AVEVA Pipe Stress Interface 3.1.0
AVEVA Model Simplification 1.3.1.0
AVEVA Integration Service 3.1
ATLASSIAN Jira
ATLASSIAN Confluence
ATLASSIAN Bitbucket

AVEVA ENGINEERING 15.7 as User
AVEVA DIAGRAMS 14.1 as User

Programming language and Tools:
Windows PowerShell
AVEVA PML Language
C Sharp

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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 general scope of work for this specification is to provide service to ensure the availability and stability of the ITER AVEVA Suite (DIAGRAMS, ENGINEERING and E3D) to user community and to provide CAD functionalities and methodologies which ensure reliability and efficiency of CAD plant design activities within AVEVA E3D in accordance with Project Standard and processes.

Definition of inputs and request for execution of a work unit shall be trigger by the ticket system

The specification foresees execution of the following tasks for this Scope:

- CAD Software support to on-site ITER users of E3D application. Answer to user's request through the IO CAD Ticket System related to: malfunction of the software, design methodology improvement request, new functionalities and automation improvement.

- Perform software implementation and architecture improvements within various areas of the AVEVA Suite (DB Infrastructure, data fusion, Piping design, Equipment Layout, MDS Support Design, Drawing generation, BOM generation, Catalogue structure, stencils production, Multi-CAD …).

- The technical specification of functionalities to be developed with the IO/IT Division or the publisher(s) testing and its deployment in production mainly for data publication and sharing.

- The creation or update of main 3D reference Administration documents required for ensuring sustainability of the platform within ATLASSIAN Confluence DO Space. Registration of software code modification within ATLASSIAN Bitbucket

- Creation/Modification of *How To.*

- Coordinate JIRA tickets resolution following ITER priorities and manage assignment within supplier team. This shall enable to minimize pending time on system production. A weekly review meeting shall be prepared towards TRO to monitor late, large or blocking tasks.

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The following rules apply for proper execution:

All communication with the submitter shall be documented through ticket comments.

ITER shall provide necessary inputs through tickets, documents, e-mails, meetings. The completion of the Work Unit shall be formalized by the acceptance of the deliverable by the IO/TRO.

If the problem or request description by the submitter is not clear enough, clarification has to be requested as soon as possible.

According to the definition of priority levels, tickets which are classified as critical prevent the user to continue the work. The contractor shall ensure that critical tickets are handled with first priority and without any delay.

After the submitter has confirmed the resolution or answer to the question, the ticket shall be closed.

Ticket status shall be monitor and corrected if needed.

As a result of a task, a *how to*, specification for customization (IDM) or a service request (in the editor support tool) to the software editor might be required.

All documents shall be formatted according to the relevant IO template (Forms and Templates - Design Office ) and approved using IDM documentation management system.

Due date for ticket validation is defined based on chapter 7. Ticket is considered as executable once all required information is provided for its resolution.

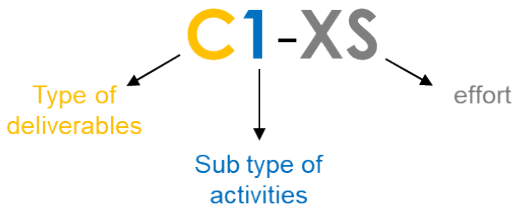
The contractor will submit as deliverable each month to IO for signature by IO/TRO the accounting of all tasks performed as explain in section 9.

### *5.1.1 Work Unit Description*

The execution of the contract is agreed and tracked by the validation of an identified contingency of Work Unit.
Each ticket is associated to a work unit type which describes:

- Type of deliverable
- Related field of activity
- effort

The following codification is given to Work Unit and is mandatory on each ticket to be identify:




The completion of the Work Unit shall be formalized by the acceptance of the deliverable by the IO TRO.
The delivery of the Work Units shall be done by the CAD Work Plan, this specification shall have a dedicated CAD Work Plan Item that shall be mentioned in the invoice. Each set of deliverables shall be formalized in the associated CAD Work Plan Sub-Items and shall be marked as completed by the IO – TRO before any payment can be made.
Type of deliverable and related activity type are given in below table:

| WU Type | WU Title | WU Description | Deliverable | Format |
|---|---|---|---|---|
| C1 | User Support | Question on AVEVA E3D tool or issue raised by user via IOCAD Ticket, resolved by support team via methodology providing and closed by submitter. | Ticket closed | IOCAD JIRA Ticket |
| C3 | User Access Right | Open or modify all necessary accounts and access right for user role to become effective. Ticket to be closed by submitter. | Ticket closed | IOCAD JIRA Ticket |
| C5 | Development | Coding activity on AVEVA platform (PML language, C Sharp) or related Infrastructure (PowerShell) including test report, registration to GIT platform, and documentation for takeover. Update of user how-to if impacted is required. Ticket to be closed by submitter once tested. | Ticket closed<br>Compiled code Released to PROD<br>source code register in GIT<br>developer documentation updated in Confluence<br>HowTo stored in IDM and review | IOCAD JIRA Ticket<br>PML, C#, PowerShell<br>Confluence Page<br>Office Document |
| C6 | Administration | Modification of the Application setup via AVEVA/ E3D, AVEVA/ADMIN, configuration files and other utilities. Update of user how-to if impacted is required. Ticket to be closed by submitter once tested. | Ticket closed<br>AVEVA Settings<br>HowTo stored in IDM and review | IOCAD JIRA Ticket<br>.db file<br>Office Document |
| D1 | CAD user documentation | HowTo, CAD Manual or Newsletters writing, publication and broadcast | Document stored in IDM and review | IOCAD JIRA Ticket |
| D3 | Reporting of activities | Perform monthly report of activity as described in section 9 | Document stored in IDM and review | |
| D4 | Specification | Develop functional software specification for AVEVA E3D or platform | Ticket closed<br>Document stored in IDM and review | IOCAD JIRA Ticket |
| D5 | Test Report | Perform test on AVEVA E3D or platform and report of investigation | Ticket closed<br>Document stored in IDM and review | IOCAD JIRA Ticket |
| T1 | Training | Providing Training session on AVEVA E3D | Ticket closed<br>Document stored in IDM and review | IOCAD JIRA Ticket |
| T2 | Certification | ensure certification of users on AVEVA E3D | Ticket closed<br>Timesheet stored in IDM and review | IOCAD JIRA Ticket |
| T3 | Awareness/Workshop | Providing dedicated workshop session on AVEVA E3D including material preparation | Ticket closed<br>Document and Timesheet stored in IDM and review | IOCAD JIRA Ticket |
| Q1 | CAD Data QC & data recovery | Specify CAD Data Quality rules, perform analysis on dataset, drive or perform resolution | Ticket closed<br>QC analysis and recovery description stored in IDM and review | IOCAD JIRA Ticket |

The Estimated effort in hour for completion of the ticket or work Unit is encoded as following:

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

### *5.1.2 Required Competencies*

The following AVEVA Software Suite competencies shall be provided with a level of **10+ years of proven experience** for at least one of the consultant for each domain of expertise of the below table:

| |
|---|
| **AVEVA Administration** |
| Administrative configuration (Database, team, DAC) |
| Compare Update configuration (CUB) |
| **AVEVA Lexicon** |
| UDA/ UDET |
| STATUS CONTROL |
| **AVEVA E3D - Model** |
| E3D Admin (colorization, auto-naming) |
| Equipment design |
| Pipe modelling |
| Structural design |
| MDS Supports design |
| Check customisation |
| Clash configuration |
| Search results utility and reports |
| M-CAD and Data-Exchange |
| **AVEVA Catalogue** |
| Specification |
| Piping and accessories component |
| Equipment template |
| Structure component |
| MDS Support component |
| **AVEVA E3D - Draw** |
| DRAW Admin (template, back sheet, title block, representation rules, …) |
| **Customisation** |
| PML Language |
| C Sharp applied to AVEVA Platform |
| Windows PowerShell |
| ATLASSIAN Jira and Confluence |
| ATLASSIAN Bitbucket |

### *5.1.3 Work plan*

The below table details activities and quantities per Work Unit type expected:

| Quantities of Work Units* | **Size** (see 5.1.1) | | | | |
|---|---|---|---|---|---|
| | **XS** | **S** | **M** | **L** | **XL** |
| C1-User Support | 146*** | 100 | 0 | 0 | 0 |
| C3-User Access Right | 50*** | 0 | 0 | 0 | 0 |
| C5-Development | 0 | 160 | 160 | 160 | 50 |
| C6-Administration | 220 | 410 | 410 | 200 | 0 |
| D1-CAD user documentation | 0 | 30 | 20 | 20 | 0 |
| D3-Reporting of activities | 0 | 36** | 0 | 0 | 0 |
| D4-Specification | 0 | 0 | 0 | 8 | 8 |
| D5-Test Report | 0 | 50 | 50 | 40 | 0 |
| T1-Training | 0 | 10 | 4 | 0 | 8 |
| T2-Certification | 0 | 0 | 0 | 0 | 0 |
| T3-Awareness/Workshop | 0 | 0 | 0 | 0 | 0 |
| T4 -Proximity support | 0 | 0 | 0 | 0 | 0 |
| Q1-CAD Data QC & data recovery | 0 | 40 | 40 | 40 | 20 |

*: Should the Work-unit listed in the present specification and the associated Report Deliverables be adjusted in content and priority, the TRO and the Contractor shall arbitrate together in order to reach appropriate measures. The changes and decisions shall be recorded. Work Units with null quantities above so far may be later requested through such agreement.

**: Details concerning monthly progress report are given in section 9.

***: Some User support & user Access Right request may require far less than an hour to be achieved. In this case, several Ticket shall be attached to the Work Unit.

### *5.1.4 Service Duration*

The estimated starting date of the tasks shall be after Contract signature. Implementation of the activities shall only start after the Kick off Meeting (T0). The expected duration of tasks is T0 + 36 months.

### *5.1.5 Workload*

The Workload is identified as per the aggregate Work Units following the table in section 5.1.3. These Work Units are for an estimated workload of 2520 working days within the 36 months.

# 6 Location for Scope of Work Execution

The nature of deliverable will require exchange with DO Support Team and IO users. It is recommended service are provide off-site at L2 location: Contractor's premises where the offices are at distance no longer than 1,500 Km from the IO Site. Nevertheless, ITER may request for period up to one week the partial transfer of activities on site. On-site activities may not exceed more than 5% of overall duration.

The Contractor may propose partially L3 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 / CEST resp.). This is done in particular to guarantee the access to the user support and to communicate with the DO Support Team.

Software setup & modification shall be performed on physical or remotely connected computers within the IO network for IT security reasons.

# 7 Work Unit Execution Delay

Tickets come in 4 Priority levels and the associated delay of resolution should be fulfilled once it is assigned to contractor and as soon as all required inputs are given by ticket requester:

| Ticket Priority \ Size | XS/S | M | L | XL |
|---|---|---|---|---|
| Critical | 1/2 | 2 | 4 | 10 |
| High | 3 | 6 | 12 | 30 |
| Medium | 10 | 20 | 40 | 100 |
| Low | 20 | 40 | 60 | 100 |

The delays above are given in working days, they could be revised for exceptional reasons (very large request put as critical, resource planning) after validation and planning review with the IO representative. Delay is explicitly for the submission of the output by the Contractor; it does not include time needed by requester to validate ticket closure following resolution provided.

# 8 IO Documents

Under this scope of work, IO will deliver the following documents by the stated date:

| Ref | Title | Doc ID | Expected date |
|---|---|---|---|
| 1 | AVEVA GENERAL/E3D JIRA Ticket Queue | NA | Daily Updated |

# 9 List of deliverables and due dates

The Supplier shall provide IO with the documents and data required in the application of this technical specification, the GM3S Ref [1] and any other requirement derived from the application of the contract.

A minimum, but not limited to, list of documents is available hereafter with associated due dates:

| Technical Design Family (TDF) | Generic Document Title (GTD) | Further Description | Expected date (T0+x) * |
|---|---|---|---|
| Review or Decision or Recommendations Report | Progress Reports | Applicable Monthly for scope of work | T0+1 till T0+36 |

(*) T0 = Commencement Date of the contract; X in months.

Supplier is requested to prepare their document schedule based on the above and using the template available in the GM3S Ref [1] appendix II (click here to download).

Progress Reports shall include:

1. A listing of all closed tickets by Supplier within the period between two reports including
   - JIRA IOCAD Reference
   - DO Queue/DO Service
   - Summary with Hyperlink
   - Status
2. A Created vs. Resolved Chart as proposed by IOCAD Ticket system for the last 2 months period.
3. A table of produced How To and Confluence Page Change
4. A Table of total Work Unit consumption

The completion of the Work Units shall be formalized by the acceptance of the related Progress Report by the IO/TRO.

# 10 Quality Assurance requirements

The Quality class under this contract is Design control – Class 2, [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.

# 11 Safety requirements

The scope under this contract covers for PIC and/or PIA and/or PE/NPE components, [Ref 1] GM3S section 5.3 does not applies as related to CAD software support.

## 11.1 Nuclear class Safety

No specific nuclear class Safety requirement apply.

### 11.2 Seismic class

No specific safety requirement related apply.

## 12 Specific General Management requirements

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

### 12.1 Contract Gates

The contract gates define in [Ref 1] section 6.1.5 are replace by Monthly Progress Report Review providing statistics on progress via Work Units executed so far.

### 12.2 Work Monitoring

Work Monitoring is performed by TRO and shared with contractors via use of ATLASSIAN Jira Dashboards (ex. AVEVA Tickets Overview ).

### 12.3 Meeting Schedule

Weekly Meeting between TRO and Suppliers will take place to establish priorities in Ticket treatment and larger development choice for completion.

### 12.4 CAD design requirements

This contract requires for CAD activities, [Ref 1] GM3S section 6.2.2.2 applies