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IT Technical Specifications

TECS_2024-04_CFT_Business Intelligence_Global Support

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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

These technical specifications address the set-up of a framework contract. The **IO CID** (ITER Organization Central Integration division) desires to acquire services in the field of **Enterprise Information Systems (EIS)** as a primary objective ("A-Service"), and in any other information technology areas as optional objective ("B-Service").

Once the framework contract is in place, IO CID will set up task orders through the following process for A-Service and eventually for B-Service:

This document relates to a new FRAMEWORK contract.

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
TRO	Technical Responsible Officer

3.2 Definitions

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

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4 Applicable Documents & Codes and standards

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	0.0

5 Scope of Work

5.1 General presentation

5.1.1 IT Organization

The IO CID division (IO/DG/SID/CID) is part of the Science & Integration Department (SID), which is under the Director General.

The IO CID Division has 3 sections:

- IT Systems and Operation Section (IO/DG/SID/CID/**ITSO**);
- IT Application and Development Section (IO/DG/SID/CID/**ITAD**);
- Data Management Section (IO/DG/SID/CID/**DAM**).

5.1.2 Sizing

The IO CID gives support to 1500 users over more than 20 buildings on the Saint-Paul Lez Durance site and 3000 remote users spread over the ITER project member's territory.

We have a modern datacenter, which is hosting the technical infrastructure mainly composed by:

- 300 physical and 400 virtual servers;
- 1 petabyte of highly available storage (SAN, mirrored between buildings and DAS);
- 6000 ports and full Wi-Fi coverage are provided by the network infrastructure;
- 100 meeting rooms fully interconnected for voice and video-conferencing; and
- A complete telephony infrastructure (VIOP, PBX, mobile phones).

The selected Contractor will have to guarantee an adequate and efficient IT service level support to all ITER project users. It will have to be able to face evolutions and improvement requests including but not limited to the:

- Increase in the number of users;
- Increase in the number of interfaces with different libraries/database/servers;

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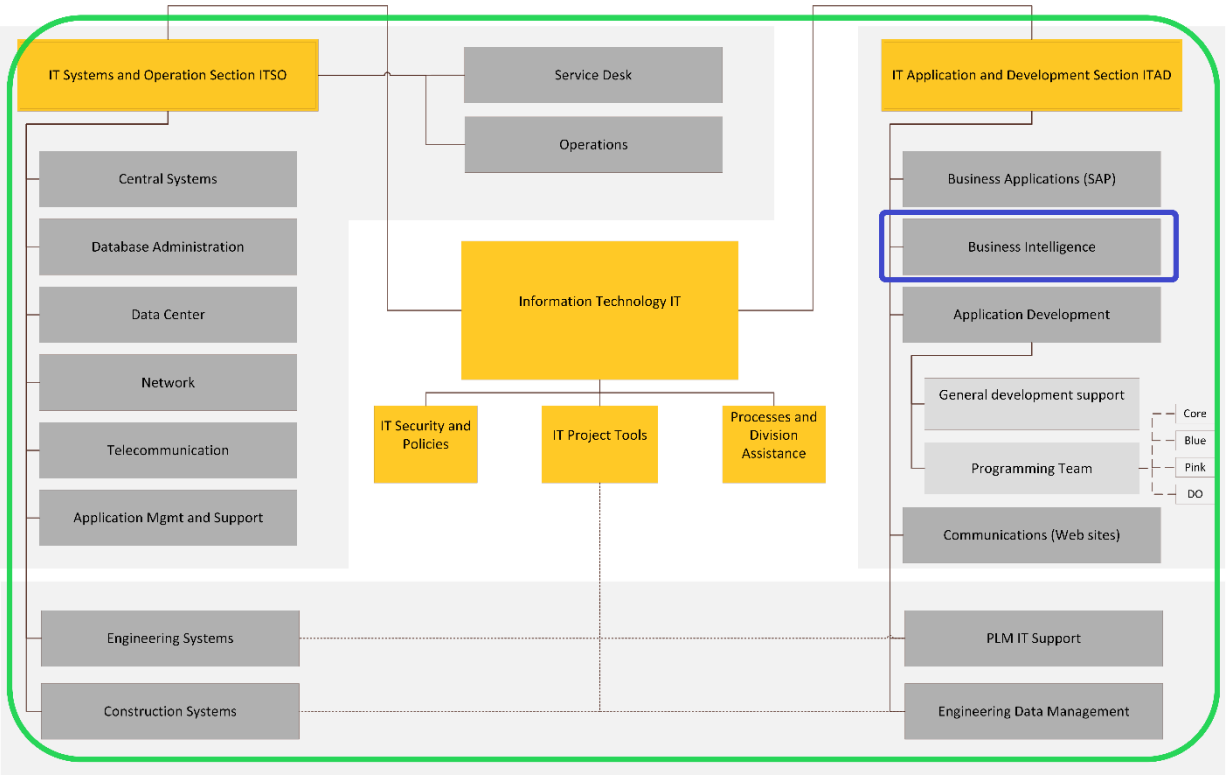
- Customization of all environments in use;
- Response time in user incidents or requests;
- ...

5.1.3 Scope



The scope of the A-Service is inside the blue rectangle. The optional B-Service scope covers all other CID areas.

5.2 A-Service

A-Service is mandatory. IO CID expects that the Contractor provides A-Service as requested in the Task Orders.

5.2.1 A-Service Scope

The scope of A-Service that the contractor is requested to provide, covers the business intelligence stack:

- Evolution and maintenance of Data Warehouse;
- Evolution and maintenance of Data Integration Service;
- Evolution and maintenance of Data Visualization Service: paginated reports, mobile ;reports, KPIs, dashboards and Power BI reports;
- Evolution and maintenance of Data Management service including Master Data Management Service;
- Evolution and maintenance of Data Analysis Service.

5.2.2 A-Service Activities

- Data modelling;
- Process modelling;

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- Designing and implementing data visualizations;
- Designing and implementing data integrations;
- Designing and implementing data analytics;
- Designing business rules;
- Designing and implementing data warehouse;
- Engineering Data Management;
- Writing software code;
- Testing and quality assurance;
- Writing technical documentation;
- Writing user documentation.

IO CID may also request to the Contractor to perform the following activities: Collecting user requirements;

- Performing business analysis;
- Project management;
- Team coordination.

5.2.3 A-Service Technical Environment

The current configuration of the server and of the development environment on which the contractor will have to work is:

- Microsoft SQL Databases (On-Prem and Cloud);
- Microsoft Data Tools (SSIS);
- Microsoft Power BI Server (SSRS);
- Microsoft Analysis Services (SSAS);
- Power BI and MS Reports builder;
- SAP Hana Database;
- MS Visual Studio;
- Microsoft Azure Cloud Services for the categories:
    - Analytics,
    - Databases;
- Oracle Databases;
- C#;
- VB.NET;
- Talend Open Studio;
- IIS;
- Atlassian tools: JIRA, Confluence, Bitbucket, Bamboo;
- MS office applications: Office 365;
- All modern browsers (Chrome, Edge, Firefox etc.);
- Git;
- Generic
    - Windows Server OS,
    - Windows Desktop OS,
    - iOS and Android,
    - Microsoft Teams.

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5.2.4 A-Service Programming Languages, Protocols, and Database technologies

- RDBMS;
- GraphDB (MSSQL, Neo4j, Apache Gremlin);
- NoSQL (Focus on Mongo / CosmosDB, Cassandra);
- Microsoft SQL (T-SQL);
- C#;
- C++;
- REST / gRPC;
- Python;
- Java;
- HTML;
- JavaScript;
- VB.NET;
- PL/SQL.

Please note that the programming languages are listed in order of importance.

5.2.5 A-Service Technical Profiles (Skills)

Here is a list of technical profiles covering the services mentioned in chapter 5.2.2:

- Business Intelligence Expert;
- Business Intelligence Developer;
- Business Analyst;
- Functional Specialist;
- Project Manager;
- Sprint Manager.

5.3 B-Service

B-Service is optional. IO CID will ask the Contractor to provide B-Service in case of emergency, or, when ITER project priorities change.

B-Service Scope, Services, Technical Environment and Programming Languages are not limited to the list below. Hence, IO CID is giving an overview of what it could request the Contractor to provide in addition to the A-Service.

5.3.1 B-Services Scope

- Plant Lifecycle Management;
- Service Desk;
- IT Security;
- IT Network;
- IT Telecommunications;
- Database administration;
- Systems Administration.

5.3.2 B-Service Activities

- User interface design;
- Software applications design;
- Testing and quality assurance;
- Building and release process;
- System maintenance;
- Configuration management;
- Change management.

5.3.3 B-Service Technical Environment

- SAP (ERP ECC8);
- Success Factors;
- Ariba;
- Exalead,
- Enovia/Catia V5;
- 3DExperience;
- RabbitMQ;
- SmartPlant;
- Primavera;
- AngularJS and Bootstrap.

5.3.4 B-Service Programming Languages

- Enovia/Catia API;
- Matrix PLM API;
- RabbitMQ API;
- Exalead API;
- Primavera API.

5.3.5 B-Service Technical Profiles (Skills)

Here is a list of technical profiles covering the services mentioned in chapter 5.3.2:

- System Administrator;
- Database Administrator;
- Service Desk Staff;
- Telecommunications Expert;
- Multi-CAD Expert;
- Engineering Data Expert;
- Construction Data Expert;
- Networks Expert;
- Communications Expert.

5.4 Estimated Duration

The framework contract will be set up for duration of five years (three firm years plus two times one optional year) with establishing task(s) order(s) according to the needs identified by IO CID.

6 Work Description

IO CID team decides the scope of work for Contractors, then both IO CID team and Contractors work on describing a detailed scope of each activity and finally IO CID team assigns individual tasks.

Below are a few examples of work description for activities mainly from A-Service that the selected Contractor will have to deliver in the frame of the contract:

Evolution and maintenance of a data warehouse:

- Collect user requirements;
- Analyze data availability;
- Analyze user request in relation to IO data warehousing strategy;
- Write technical specifications;
- Design entity-relationship data model respecting data warehousing principles;
- Write SQL script to create and maintain database objects;
- Design processes to synchronize (import) external data into data warehouse;
- Import external data using various techniques: SQL scripts, SSIS packages, Web Services, bulk upload, etc.;
- Update technical documentation.

Deliverable: operational data warehouse solution; updated project (project initiation document, highlight reports, exception reports, closure report, meeting notes, release notes, etc.), technical (developer guide, administration guide, operations guide) and service (user, internal) documentation; description of tasks as JIRA tickets; updated user documentation.

Evolution and maintenance of a data integration project:

- Collect user requirements;
- Analyze data availability and data quality;
- Analyze user request in relation to IO data integration strategy;
- Write technical specifications;
- Update technical documentation;
- Update data integration service documentation.

Deliverable: master data model (entities, attributes, business rules, attribute groups, integration views and permissions) deployed in the production environment; updated project, technical and service documentation; description of tasks as JIRA tickets; updated user documentation.

Evolution and maintenance of a paginated report:

- Collect user requirements;
- Analyze data availability and data quality;
- Analyze user request in relation to IO reporting strategy;
- Write technical specifications;
- Update data warehouse if necessary;
- Design user interface (visualization) for the paginated report;
- Create or update scripts to collect data for the paginated report;
- Test paginated report in the development environment;
- Deploy paginated report to the production environment;
- Update access permissions if necessary;

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- Update technical documentation;
- Update data visualisation service documentation.

Deliverable: integration package deployed in the production environment; updated technical and service documentation; description of tasks as JIRA tickets; updated user documentation.

Evolution and maintenance of master data project:

- Collect user requirements;
- Analyze data availability and data quality;
- Analyze user request in relation to IO data integration and data quality strategy;
- Write technical specifications;
- Create and maintain data sources and connections;
- Create and maintain project and package variables and parameters;
- Create and maintain control flows and data flows;
- Deploy projects and packages;
- Schedule and run packages;
- Manage catalogs (development, test, production) of projects and packages;
- Analyze and optimize performance of packages;
- Manage project and package security;
- Update technical documentation;
- Update master data service documentation;
- Update user documentation.

Deliverable: data integration project and packages deployed in the production environment; updated project, technical and service documentation; description of tasks as JIRA tickets; updated user documentation.

Evolution and maintenance of data analysis project:

- Collect user requirements;
- Analyze data availability and data quality;
- Analyze user request in relation to IO data analytics strategy;
- Write technical specifications;
- Create and maintain data sources;
- Create and maintain data source views;
- Create and maintain dimensions;
- Create and maintain measures and measure groups;
- Create and maintain attributes and attribute relationships;
- Create and maintain hierarchies;
- Create and maintain cubes;
- Update technical documentation;
- Update data analysis service documentation ;
- Update user documentation.

Deliverable: data analysis project (data sources, data source views, dimensions, attributes, attribute relationships, hierarchies, and cubes) in the production environment; updated technical and service documentation; description of tasks as JIRA tickets; updated user documentation.

7 Location for Scope of Work Execution

Contractor can perform the work at their own location or on-site.

8 IO Documents

No input is expected from IO, however documents will be provided if requested.

9 Deliveries, Acceptance and Performance

9.1 Deliverables

The Contractor shall propose an on-site / off-site team to perform the tasks described in each Task Order.

IO CID provides in-house developed tools to record descriptions of work completed, to log time spent and to record absence. These tools are mandatory to use as they provide a basis for accounting and invoicing.

- Descriptions of work completed: Jira work logs and Confluence pages;
- Logging of time spent: Jira work log weekly records;
- Records of absence: Confluence Team Calendars.

Monthly activity reports contain qualitative and quantitative detailed information about the issues the Contractor has been confronted to, about the solution proposed and implemented, the innovations introduced in the processes and the ideas to further improve the service. These reports shall be agreed and accepted from IO TRO to release the corresponding payment.

9.2 Acceptance of deliverables

- Coherence with requirements: does the Deliverable correspond to the specifications?
- Coherence with purpose: does the proposed Deliverable meet the objective and purpose?
- Completeness: does the Deliverable address all the required points?
- Level of detail: does the Deliverable address all points with the required level of appropriate detail?
- Consistency with the proposed architecture: the content of the Deliverable must be consistent with the principles of the basis of the system and the objectives requested;
- Formal aspects: Deliverables and their documentation shall be well written, understandable and exempt of language, drafting or typographical mistakes.

9.3 Performance Criteria

IO will evaluate and score the performance of the Contractor regarding Deliverables periodically (at least once a year). IO CID will focus on:

- Timeliness (max. 20 points): Did the Contractor produce Deliverables by the agreed deadline?
- Project execution (max. 20 points): Did the contractor follow a clear and transparent management process for completion of the Deliverables?
- Team Turnover (max. 10 points): Do the team members stay the same, or is there turn and frequent changes?
- Quality and demonstrated competence (max. 50 points).

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After evaluation, IO will provide a detailed report to the Contractor to give evidence of the performance of the service and eventually to allow the Contractor taking all the necessary measures to improve it, in particular:

- When the performance score is below 45 points, the Contractor will be required to apply urgent improvement measures. If nonetheless the Contractor's performance remains unsatisfactory, ITER will apply measures that could lead to termination of the current task order or of the whole Framework Contract;
- If the performance score is not higher than 65 points, the Contractor will be required to apply improvement measures where necessary;

A performance score of above 66 (above 85) points will have a positive (very positive) impact on the decision whether to issue the task order or renew the Contract.

10 Quality Assurance requirements

The organization conducting these activities should have an ITER approved QA Program or an ISO 9001 accredited quality system.

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

Prior to commencement of the task, a Quality Plan must be submitted for IO approval giving evidence of the above and describing the organization for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities (see Procurement Requirements for Producing a Quality Plan (ITER_D_22MFMW)).

Deviations and Non-conformities will follow the procedure detailed in ITER Requirements Regarding Contractors Deviations and Non Conformities (ITER_D_22F53X).

Documentation developed as the result of this task shall be retained by the performer of the task or the DA organization for a minimum of 5 years and then may be discarded at the direction of the IO. The use of computer software to perform a safety basis task activity such as analysis and/or modelling, etc. shall be reviewed and approved by the IO prior to its use, in accordance with Quality Assurance for ITER Safety Codes (ITER_D_258LKL).

11 Safety requirements

The scope under this Contract does not cover for PIC and/or PIA and/or PE/NPE components.

12 Specific General Management requirements

12.1 Initial Estimation of Workload

IO CID estimates the initial needs in terms of workload as the following:

- BI-DEV-J: Junior BI Developer – 3 FTE;
- BI-DEV-S: Senior BI Developer – 1.5 FTE;
- BI-EXP-S: Senior BI Expert – 2.5 FTE.

12.2 Technical Profiles and Experience

IO CID maintains two categories (Senior and Junior) based on number of years of experience in a required technical domain for each technical profile (5.2.5 and 53.5):

- Senior – with university degree and at least 8 years of experience in a required technical domain;
- Junior – at least 2 years of experience in a required technical domain.

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As an example, when a BI expert is provided with 12 years of experience then this profile is called Senior BI Expert.

13 Specific requirements and conditions

Unless specifically agreed, the Contractor shall render services duly detailed in a Task Order at both on site at IO premises and off-site.

The normal working hours at ITER are 40 hours/week, 5 days per week Monday to Friday and 225 days/year.

The ITER organization closes for one week around December 25. The Contractor shall include this week in the vacation planning for the on-site staff. Outside of the week of closure, the Contractor shall have at least 50% of its team available, unless a different arrangement is previously agreed by both parties.

At any time of a task order lifecycle, when requested by the IO CID, the Contractor shall be able to provide a specific number of days worked by its team.

The Contractor obligation is to ensure the service continuity all along the task order validity. IO CID will monitor the quantity and quality of the services provided by the Contractor. Especially, IO CID reserves the right to register and log the time and presence of contractors on site.

The Contractor is required to work in close collaboration with all current and future IO Sub-contractors.

For the execution of A-Services and/or B-Services, the Contractor must deploy in reasonable time the number of people (contractor's staff) with relevant profiles as proposed in the technical offer and agreed by IO CID.

The spoken and written language of all communications between the Contractor and the IO is English. Therefore, the Contractor shall deliver all documentation deliverables, reports, drafts and other documents written in English, and conduct or participate in meetings using English language.

In case of personnel change (turnover), when not requested by the IO CID, the Contractor covers the costs of on boarding time for the newcomers (i.e. two months of training). In case of IO CID requesting personnel change due to insufficient performance, the Contractor also covers the cost of on boarding. IO CID covers the on boarding time at the initiation of a new task order, unless it is a continuation of a previous task order.

The Contractor shall pay other needed education and training costs for their staff. Any travel, subsistence allowance, and other expenses shall be borne by the Contractor. IO CID and the Contractor shall agree on a case-by-case bases who covers costs for specific missions, when requested by IO CID.

The Contractor's staff on site and off-site shall follow IO CID internal processes using the IO CID tools for these activities:

- Periodic time and activity logging;
- Project management; and
- Ticketing follow-up.

The work environment of the off-site team shall be in accordance with the complexity of the tasks in general, and offer especially:

- A strong internet connection at least 15Mb/s download and 2.5 Mb/s upload with Marseille server (test can be performed by http://www.speedtest.net/).

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- A workstation station with double screen of at least 22 inches diagonal and processor at least i7 or equivalent (4 core, 3GHz) and memory at least 16GB, 64bit OS, web cam and headset.
- Accessibility to meeting room equipped with white board and projector for 10 persons.