



## STATEMENT OF WORK

### Professional Services for Application Data Integration Architecture and Design

#### 1. Scope

This Statement of Work (SOW) describes the requirements for: 1) documenting the current state of data integration for applications hosted on the infrastructure managed by the Division of Information Technology (MTIT) of the IAEA; 2) specifying the International Atomic Energy Agency's (IAEA) application data integration requirements for these applications and defining a suitable architecture; 3) designing the application data integration solution based on the selected architecture; and 4) providing inputs to help plan the implementation of the solution. With assistance from an internal team of IAEA staff for the gathering of relevant internal data, the IAEA seeks a Contractor to perform this work.

The IAEA's ERP system, called the Agency-wide Information System for Programme Support (AIPS), is based on Oracle products (E-Business Suite and Hyperion) and is currently hosted in Geneva, Switzerland at the UN International Computing Centre (UNICC). The remainder of the IAEA's application landscape is based mainly on Microsoft technologies (Windows Server, IIS Server, SQL Server, SharePoint, .NET and Microsoft Office applications). These are mostly hosted in Vienna, Austria, and increasingly in the Cloud, primarily on Microsoft Azure. A limited number of LAMP systems exist.

Active Directory is used to authenticate users of the IAEA internal network, whereas CA Identity Manager is currently used for external users. The current application data integration approach is based on database views, SQL Server linked servers, as well as SQL Server jobs for ETL tasks and SQL Server database replication.

#### 2. Applicable Documents

The following documents shall be applicable for the work to the extent specified hereinafter:

- The IAEA IT standards (Attachment 1)

In the event of conflict between the documents listed above and the content of this Specification, the content of this Specification shall take precedence to the extent of the conflict.

- IAEA Application Data Integration with ERP (Attachment 2) illustrates the current approach to application data integration at the IAEA using the integration with the ERP system as an example.

#### 3. Definitions, Acronyms, and Abbreviations



The following definitions, acronyms, and abbreviations shall apply throughout this SOW unless defined otherwise hereinafter:

CA - Computer Associates

COTS – Commercial off-the-shelf

ETL – Extract, Transform and Load

EBS - Oracle E-Business Suite

IIS – Microsoft Internet Information Services

LAMP – Linux, Apache, MySQL, PHP

MTIT – Division of Information Technology of the IAEA

SQL Server – Microsoft SQL Server

#### **4. Requirements**

The Contractor shall carry out the activities listed here below and provide the deliverables specified.

##### **4.1. Schedule and Place**

4.1.1. For the initial engagement kick-off and for any needed stakeholder interviews, the Contractor shall work on-site at the IAEA's Headquarters in Vienna, Austria, with assistance from the IAEA's internal team; and

4.1.2. The length of the total engagement shall be no longer than four calendar months.

4.1.3. Proof of concept shall be created and provided by the Contractor as indicated in 4.5.4. and 4.7.6.

##### **4.2. Profile and Qualifications**

The members of the Contractor's core team working on this engagement shall meet the following requirements:

4.2.1. Experience:

4.2.1.1. A minimum of 10 years of experience in medium to large-scale application data integration architecture, design and implementation;

4.2.1.2. Very good knowledge of application data integration best practices;

4.2.1.3. A minimum of 10 years of experience using technologies/tools implementing traditional and/or new integration patterns (e.g. messaging, microservices, orchestration, etc.);

4.2.1.4. A minimum of 10 years of experience in the data integration of applications based on Microsoft technologies (.NET, IIS, SQL Server, SharePoint);



4.2.1.5. A minimum of 10 years of experience in the data integration of applications based on Oracle technologies (EBS, Hyperion, Oracle database); and

4.2.1.6. A minimum of 2 years of experience in the data integration of applications both hosted on premises and in Microsoft Azure.

4.2.2. Abilities:

4.2.2.1. Fluency in English (oral and written); and

4.2.2.2. Strong facilitation, communication and presentation skills.

**4.3. Document the current state of data integration for applications hosted on the infrastructure managed by MTIT**

4.3.1. The Contractor shall interview the following stakeholders to understand the current state of data integration for applications hosted on the infrastructure managed by MTIT: 1) six to eight software development groups of the IAEA; 2) the ERP support group; 3) the MTIT database administration group. Between one and three members of each of these groups will be involved in the interviews.

4.3.2. The Contractor shall document the current state of data integration including all the integration and usage points for the applications identified in 4.3.1.

**4.4. Define an application data integration architecture for applications hosted on the infrastructure managed by MTIT**

4.4.1. The Contractor shall interview the following stakeholders and analyse the information provided by them to specify the IAEA's requirements for application data integration: 1) six to eight software development groups of the IAEA; 2) the ERP support group; 3) the MTIT's database administration group; 4) the MTIT's IT infrastructure group (systems and network engineers); 5) the IAEA's central information security group; and 6) the MTIT management team. Between one and three members of each of these groups will be involved in the interviews, and the management team has seven members.

4.4.2. The Contractor shall identify and document possible architecture options that can satisfy the IAEA's requirements for application data integration.

4.4.3. The Contractor shall include, for each of the options, costs and timeframes for the initial build, and the relative effort required to remediate the applications identified in 4.3.1.

4.4.4. The Contractor shall define and document criteria for evaluating the architecture options that have been identified. The criteria shall include rating of the options on information security.



4.4.5. The Contractor shall evaluate, with the IAEA's internal team, the architecture options and recommend the most suitable to satisfy the IAEA's requirements for application data integration.

4.4.6. The Contractor shall create the documentation pertaining to the application data integration architecture selected by the IAEA.

#### **4.5. Design the application data integration solution for the selected architecture**

4.5.1. The Contractor shall specify the IAEA's application data integration requirements.

4.5.2. The Contractor shall create a detailed design of a solution that is based on the selected application data integration architecture and that satisfies the specified integration requirements.

4.5.3. The Contractor shall provide the specifications of the parts of the solution that will not be custom-built; for example, COTS, open source software, service oriented architecture appliances.

4.5.4. The Contractor shall create a proof of concept of the solution to demonstrate how the critical requirements of the IAEA will be met.

#### **4.6. Provide inputs to support the planning of the implementation of the solution**

4.6.1. The Contractor shall create a document which will be used as the basis for the planning of the project that will implement the chosen application data integration solution. This document shall contain at the minimum:

4.6.1.1. Specialist products (as per PRINCE2) of the project;

4.6.1.2. Sequence of creation of the specialist products;

4.6.1.3. Identified risks of the project;

4.6.1.4. Technical skills required for the creation of the deliverables; and

4.6.1.5. Cost and time estimates for implementing the solution and decommissioning the current data integration solution, based on inputs collected from relevant parties.

#### **4.7. Quality control and monitoring of engagement progress**

4.7.1. The Contractor shall provide draft versions of the deliverables listed in section 5 (Deliverable Data Items) to the IAEA for review at least once, or as often as required.

4.7.2. The Contractor shall update the deliverables based on the quality control activities performed by the IAEA or by third-parties on the IAEA's behalf.



These activities include, but are not limited to, information risk assessments and technical reviews.

4.7.3. All work shall be monitored by the IAEA manager of the MTIT Data Integration Re-architecture project.

4.7.4. The Contractor shall provide the IAEA with formal updates on the progress of the engagement biweekly via a written status report, supplemented with Internet-supported or in-person meetings when deemed necessary.

4.7.5. The Contractor shall plan for two or three potential presentations to the IAEA's senior management.

4.7.6. The Contractor shall provide a proof of concept of the future application data integration solution to enable the IAEA to validate the solution.

#### **4.8. Formal acceptance of deliverables**

4.8.1. All the draft and final versions of the deliverables shall be provided in electronic format. Prior to acceptance of the final version of each of the deliverables, the Contractor shall organize a formal review meeting with the IAEA.

### **5. Deliverable Data Items**

The Contractor shall deliver the following data items:

- 5.1. IAEA's As-Is application data integration architecture;
- 5.2. IAEA's requirements for application data integration;
- 5.3. Application data integration architecture options for the IAEA;
- 5.4. Evaluation criteria of application data integration architecture options for the IAEA;
- 5.5. Selected application data integration architecture;
- 5.6. Design of the chosen application data integration solution;
- 5.7. Proof of concept of the application data integration solution demonstrating how the three most important requirements of the IAEA will be met;
- 5.8. Description of the non-custom-built parts of the chosen application data integration solution; and
- 5.9. Supporting document for planning of project to implement the chosen application data integration solution.

Professional Services for Application Data Integration Architecture and Design	 <b>IAEA</b> International Atomic Energy Agency	IAEA IT Standards (Excerpt)  Dated 2017-12-21
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## IAEA IT Standards (Excerpt)

### Professional Services for Application Data Integration Architecture and Design

#### 1. Best Practice Standards

Scope	Standard
IT Governance and Management	Control Objectives for Information and Related Technology (COBIT)
Service Management	Information Technology Infrastructure Library (ITIL)
Information Security Management	ISO/IEC 27000 Series
Project Management	PRINCE2

#### 2. Software Standards

##### 2.1 End-user

Configuration Item / Function	Manufacturer (product line)
Operating System	Microsoft (Windows)
Office Productivity Software	Microsoft (Office) & Office 365

##### 2.2 Applications (Off-premises)

Configuration Item / Function	Service Name	Vendor/Provider	Service Model
Enterprise Resource Planning (ERP)	AIPS	Oracle	PaaS
Recruiting Module	Taleo	Oracle	SaaS
Financial Management	Hyperion	Oracle	SaaS

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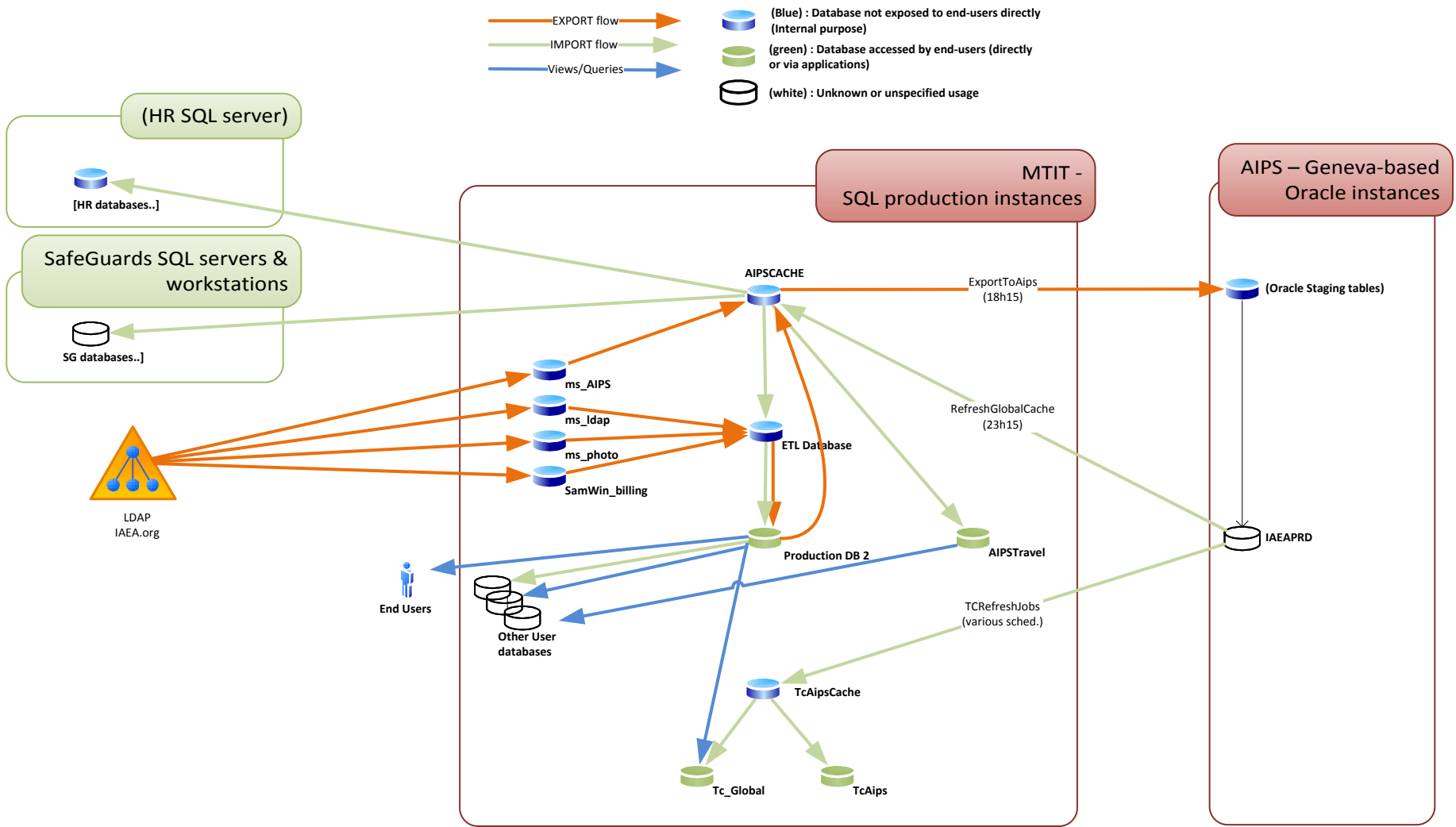
## 2.3 IT Infrastructure

Configuration Item / Function	Manufacturer (product line)
Collaboration Tool	Microsoft SharePoint
Database Management System	Microsoft (SQL)
Electronic Document Management	Open text (LiveLink)
Messaging	Microsoft (Exchange Server) & Exchange Online
Server operating system	Microsoft (Window Server)
Server operating system	SuSE Linux Enterprise (SLES)
Server operating system	RedHat Enterprise Linux
Server operating system	Solaris
Web Content Management	Drupal Open Source CMS
Web Server software	Microsoft (IIS)
Web Server software	Open Source (Apache)
Web Server software	Open Source (Tomcat)

## 2.4 Application Development

Configuration Item/Function	Manufacturer (product line)
Software development framework	Microsoft (.NET)
Software development framework	Open Source (Java)
Software integrated development environment (IDE)	Microsoft (Visual Studio)
ERP (AIPS) Development Tool	Oracle jDeveloper

High-Level Dataflow – Application Data Integration with IAEA ERP (aka AIPS)





## High-Level Dataflow – Application Data Integration with IAEA ERP (aka AIPS)

(Note: not current)

