STATEMENT OF WORK

Provision of software components/solution, including the related services for Application Data Integration Implementation

1. Scope

This Statement of Work (SoW) describes the requirements for two software components:

Lot 1 – an Enterprise Service Bus (ESB); and

Lot 2 – an Application Programming Interface (API) Manager;

Or a software solution that embodies the purpose and the functionality of the two above mentioned software components (Lot 3), to be deployed as part of the to-be application data integration architecture of the IAEA.

2. Background

The Enterprise Resource Planning (ERP) system of the IAEA, 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 Linux, Apache, MySQL, and PHP (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.

An analysis performed by the IAEA established that the current application data integration architecture is structurally complex, has data governance issues and it is difficult to maintain.

To address all these issues, the IAEA has developed a new application data integration architecture, the to-be architecture attached in Annex 1 of this SoW (see page no. 6). The software components/solution described herein are part of the to-be architecture.

3. Applicable Documents

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

Annex 1 – Illustrates the to-be application data integration architecture at the IAEA and highlights the architectural components to be procured, the ESB and the API Manager;

Annex 2 – Detailed requirements specifications for the ESB and

Annex 3 – Detailed requirements specifications for the API Manager.

4. Acronyms

The following acronyms shall apply throughout this SoW unless defined otherwise hereinafter:

ETL – Extract, Transform and Load;

EBS – Oracle E-Business Suite;

IIS – Microsoft Internet Information Services;

iPaaS – Integration Platform as a Service;

ISG – Integrated Service Gateway (component of Oracle ERP – AIPS);

LDAP – Lightweight Directory Access Protocol;

MTIT – Division of Information Technology of the IAEA;

NFR – Non-Functional Requirements;

REST – Representational State Transfer;

SaaS – Software as a Service; and

TLS – Transport Layer Security.

5. Requirements

The current IT landscape consists of source and consumer applications. The API manager and ESB will form the API driven integration platform where source systems such as AIPS (as well as other applications) will be the service provider for most of the services while other applications are going to be the consumers of the services. In certain scenarios when using the ISG, AIPS (through the ISG) will publish the services directly into the API manager. For other scenarios which will require data transformation/mediation, custom services will be created and deployed at the ESB layer first and then exposed through the API Manager. Therefore, all services will be deployed to the API Gateway and exposed to consumers via the API Manager Developer Portal. All the services will be exposed as REST APIs by the API Manager. The developers of consumer application will be able to view published APIs and the documentation via the API catalogue. Currently most of the consumer applications are .NET and SharePoint based applications and hosted on-

premise and on the cloud. These consumer applications would need to consume APIs published through the API Manager.

The detailed requirements specifications are provided in the Annexes 2 and 3.

5.1. Contractor's Requirements

The Contractor's core team personnel working on this engagement shall have:

- A minimum of ten (10) years of experience in medium to large-scale application data integration architecture, design and implementation;
- Very good knowledge of application data integration best practices;
- A minimum of ten (10) years of experience using technologies/tools implementing traditional and/or new integration patterns (e.g., messaging, microservices, orchestration, etc.);
- A minimum of five (5) years of experience in the data integration of applications based on the proposed software components/solution;
- A minimum of five (5) years of experience in the data integration of applications both hosted on premises and on cloud;
- Fluency in English (oral and written); and
- Strong facilitation, communication and presentation skills.

5.2. Enterprise Service Bus

The Enterprise Service Bus will be a transformation and mediation layer. AIPS is one of the main sources of data and will provide most of the data as services. As the data models are going to be of disparate nature at the source side and consumer side, there are going to be transformation requirements which would demand transformation of data from source format to consumer format and vice versa. All these data transformations, data enrichments, protocol translations, content/rules-based routings will be done at the ESB layer using ESB capabilities.

The ESB shall provide the following key capabilities:

- Service Design and Development;
- Service Deployment and Testing;
- Service Security;
- Messaging Infrastructure;
- Transformation and Enrichment of Messages;
- Routing;
- Service Orchestration;
- Service Monitoring;
- Service Governance;
- Scalability, Resilience, and High Availability (SaaS or iPaaS solution).

The detailed list of requirements specifications is provided in Annex 2.

5.3. API Manager

The API Manager component will consolidate data access through a common set of enterprise level APIs and ensure that the right security controls have been defined and enforced through APIs. It ensures that updated data is available to the consumers on a need basis and proper security controls are in place. This will also provide an opportunity to reduce data latency from 1-2 days to hours or minutes depending upon the data availability at source systems. This will help in bringing in the culture of reusability of services and getting away from point to point connectivity across the organisation.

The API Manager shall provide the following key capabilities:

- API Manager Subscription Model (Deployment, Upgrade, Support etc.);
- API Manager Life cycle (Management Portal, Developer Portal, API catalogue, Transformation, Monitor etc.);
- API Manager Governance (Plan, Security Policy, Access, Monetisation, Version, Analytics etc.);
- API Manager Security (TLS, AD-Integration, Certificates and Key Management, LDAP, authentication method etc.);
- API Manager NFR (High Availability, Performance, Scalability, Resilience, 3rd Patty Integration, Logging etc.).

The detailed list of requirements specifications is provided in Annex 3.

6. Installation and Training

The Contractor shall install, as required, the software components specified in this SoW at the IAEA headquarters in Vienna / UNICC in Geneva or provide access to the solution in the Cloud (for SaaS or iPaaS proposal).

The Contractor shall provide 3 days of training on the installation, operation and maintenance of the software components/solution to the relevant IAEA staff during or immediately after the installation. The training shall take place at the IAEA Headquarters in Vienna, Austria or remotely.

7. Pilot Integration Project and Acceptance

Phase 1: The Contractor shall provide a temporary license/subscription, at no cost, of the software components/solution proposed to be installed and parametrized as part of the pilot integration project. After the installation and parametrization of the software components/solution as per this SoW, the IAEA will run a pilot integration project which is expected to last for approximately three (3) months. The Contractor shall provide support and consultancy on the implementation of the pilot project, upon request by the IAEA.

Phase 2: Based on the results of Phase 1 and subject to the Contractor's performance during that phase, the IAEA will have the option, to be exercised at its discretion, to purchase the software components/solution, upon which the Contractor shall provide maintenance and support for a period of five (5) years.
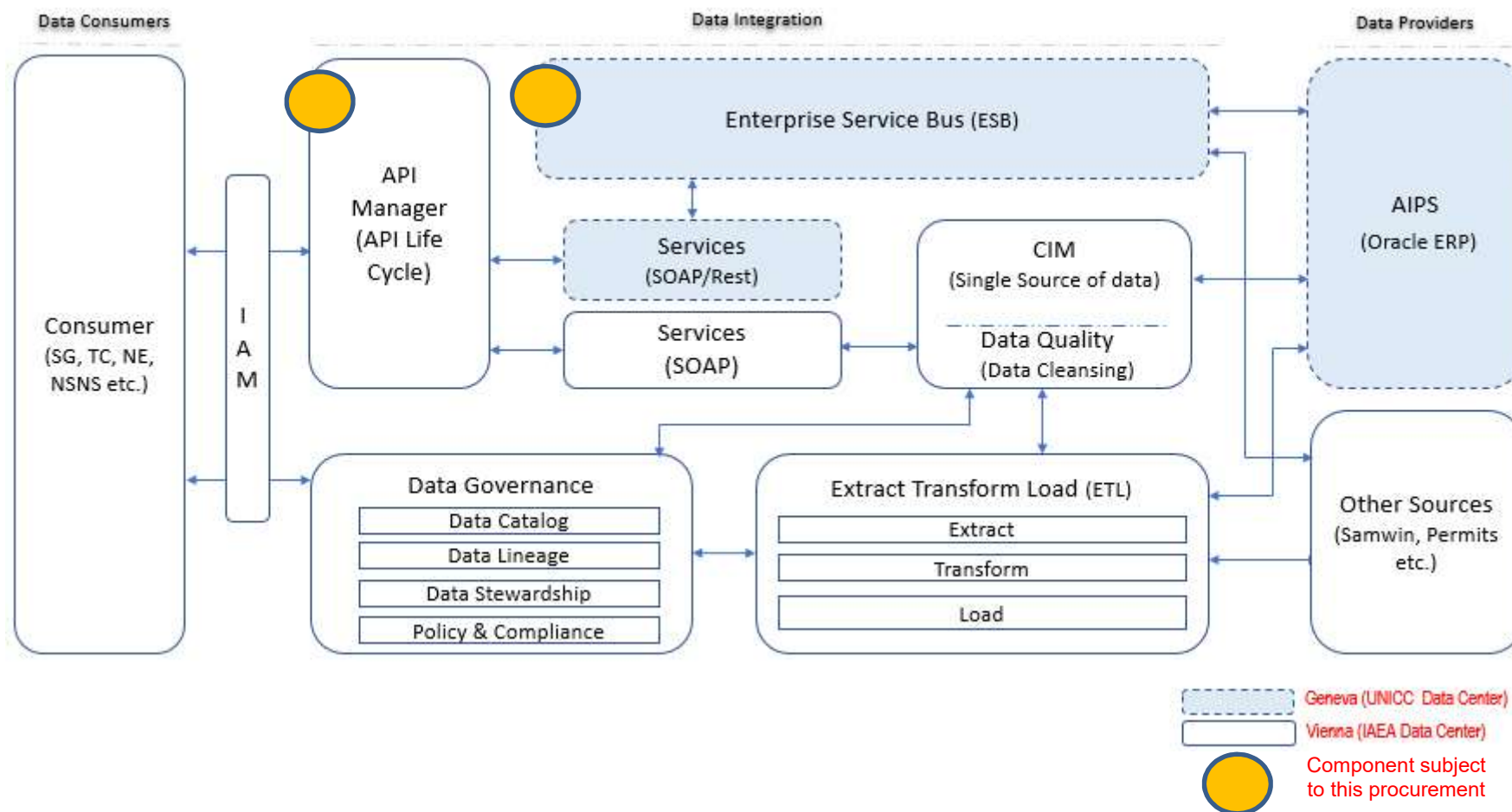
8. Deliverable Data Items

8.1 The Contractor shall provide a complete set of installation, operation and administrative manuals of the software components/solution in the English language, in electronic and/or paper format where appropriate. All documentation, operation and servicing manuals and technical drawings in the English language in electronic and/or paper format where appropriate.

8.2 Specification listing the hardware, storage, network, software and other requirements for the proposed solution (infrastructure sizing information) and including any existing limitations thereof.

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Annex 1 – IAEA To-Be Architecture

Annex 2 – Detailed requirements specifications for the ESB

MS Excel file provided separately.

Annex 3 – Detailed requirements specifications for the API Manager

MS Excel file provided separately.