

## ***ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER**

**Contract title: Supply Contract for AIS and AES Equipment**

**Lot 3: Delivery and support of Enterprise Service Bus (ESB) solution**

**Publication reference: EuropeAid/138-047/IH/SUP/RS**

**Column 1-2 should be completed by the Contracting Authority**

**Column 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the Contractor's technical offer

The tenderers are requested to complete the template on the next pages:

- Column 2 is completed by the Contracting Authority shows the required specifications (not to be modified by the tenderer),
- Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words “compliant” or “yes” are not sufficient)
- Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offered specifications.

1. Item Number	2. Specifications Required	3. Specifications Offered	4. Notes, remarks, ref to documentation	5. Evaluation Committee's notes
1	<p><b>Customs Authorization/Decision Management Information System Solution built on ESB platform with Relational Database Management System Qty:1</b></p> <p>The solution needs to enable the integration of data sources from a wide range of platforms across both SOA and non-SOA environments, including Web service security and integration.</p> <p>The primary aim of the solution is to establish and complete the technological infrastructure in order to deliver Customs Authorisation/Decision Management Information System.</p> <p>Solution needs to be built on a modern ESB platform with Relational Database Management System</p> <p>The solution needs to have functional capabilities or its equivalent as mentioned below:</p>			
1.1	<p>The Customs Authorisation/Decision Management Information System must provide a standardized method for interacting with key services to enable secure transaction processing. In this way, the Customs Authorisation/Decision Management Information System must eliminate the need for each connected Organization to re-implement the following key capabilities for secure transactions:</p> <ul style="list-style-type: none"> <li>○ User identification, authentication and authorisation.</li> <li>○ Secure messaging.</li> <li>○ Transaction routing and processing.</li> </ul>			

1.2	<p>The Customs Authorisation/Decision Management Information System has to provide a single integrated view, by standardizing the process for submitting transactions and documents and providing a single registration and single-sign on experience:</p> <ul style="list-style-type: none"> <li>○ Single, secure point of access.</li> <li>○ Enterprise Application integration.</li> <li>○ Secure transmission of information.</li> <li>○ Management of User identity and service authorisation.</li> </ul>			
1.3	<p>The user registration must be enforced in Customs Authorisation/Decision Management Information System to access e-Services. The registration ensures that a user's credentials (e.g., user name and password, certificate issued through a trusted authority) can be unquestionably tied to a real world identity.</p>			
1.4	<p>The solution must ensure that only an authenticated user has the right to access a particular e-Service.</p>			
1.5	<p>The solution must have the enrolment process where user selects the needed e-Service. The e-Service could be protected and user has to pass validation process that he is eligible for the e-Service. Validation process must use the known-facts mechanism.</p>			
1.6	<p>The solution must provide the necessary features for managing and securing the list of e-Services.</p>			
1.7	<p>The solution must have the transaction and messaging services that contain a transaction engine providing the following functionality:</p> <ul style="list-style-type: none"> <li>○ Service identification: In order to route a transaction request, the transaction engine must be able to determine which system(s) to route the transaction to. Transaction routing: The transaction engine shall be able to route a request to the proper recipient. Transactions may have multiple destinations or may come from multiple sources, depending on the specific process to be executed. The System shall be able to route transactions between all supported sources and destinations.</li> <li>○ Auditing and Tracking: The transaction engine shall provide information on the transactions, which have been processed, for auditing and tracking purposes.</li> </ul>			

<p><b>1.8</b></p>	<p>The solution must have the full capability to perform the integration with the existing back-end systems, through the different protocols and access methods currently supported by these systems. It shall also provide the ability to model and execute customised business processes and rules that coordinate (through appropriate workflow) the execution of an e-Service with back-end systems.</p> <p>Existing backend systems to be integrated are:</p> <ul style="list-style-type: none"> <li>• Legacy system (ISCS)</li> <li>• NCTS (New Computerized Transit System)</li> <li>• RMS (Risk Management System)</li> <li>• IPS (Inspection Protocol System)</li> <li>• AMS (Authorization Management System)</li> <li>• AEO (Authorized Economic Operators)</li> </ul> <p>Note: All exchange among systems should be based on XML messages.</p> <p>Also, in order to facilitate the integration between the systems, the ESB platform should contain the adapters that support the following protocols and standards:</p> <ul style="list-style-type: none"> <li>- FTP</li> <li>- SFTP (SSH File Transfer Protocol)</li> <li>- HTTP</li> <li>- HTTPS</li> <li>- POP3</li> <li>- SMTP</li> <li>- MSMQ</li> <li>- MQ Series</li> <li>- Windows SharePoint Services</li> <li>- SOAP</li> <li>- WCF-WSHttp</li> <li>- WCF-BasicHttp</li> <li>- WCF-NetTcp</li> <li>- WCF-NetMsmq</li> <li>- WCF-NetNamedPipe</li> <li>- WCF-Custom</li> <li>- WCF-CustomIsolated</li> </ul>			
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<b>1.9</b>	The solution architecture must support and provide a variety of authentication methods, credential types, identity providers, authorisation methods, trust models, etc. The solution must be flexible and allow adoption of various current and emerging security technologies without major redesign.			
<b>1.10</b>	The proposed solution must provide highly availability, be robust, fault tolerant and have a robust error handling mechanism.			
<b>1.11</b>	The solution must be flexible to allow multiple identity stores.			
<b>1.12</b>	<p>The solution must provide two or more different types of credentials (e.g. User ID and Password, weak authentication, and User ID based on Certificates, strong authentication)</p> <p>For the purposes of this call for tenders, the certificates for user strong authentication shall follow the X.509 v3 standard, whereas for electronic signature (non-repudiation) shall be based on X.509 v3 qualified certificates.</p> <p>(a) Certificates on user's Computer: (b) Certificates on Smart Cards or USB</p>			
<b>1.13</b>	The process for initial provisioning (identification and registration) of users has to be efficient, secure, and require minimum human interaction. A "self-service" feature driven by the users themselves.			
<b>1.14</b>	The solution must provide the ability for additional users within the Customs Administration of the Republic of Serbia to access and utilize e-Services on behalf of the Organization. The solution must allow users to assign (delegate) their rights in relation to service enrolments to other users or organizations.			
<b>1.15</b>	The solution must have the ability to perform the role of a Security Token Service (STS), as defined in WS-Trust, WS-Federation, and WS-Security standards. The solution can therefore participate in a federated network of Web services providing authentication, authorization, single sign-on and other functionality that facilitates effective integration, based on industry standards and specifications.			
<b>1.16</b>	The sensitive data must be encrypted using the Secure Socket Layer (SSL), with high key length, standard protocol, whenever appropriate.			

1.17	The solution must support the auditing of all activities.			
1.18	<p>The Customs Authorisation/Decision Management Information System must be able to handle transactions and messaging at two levels:</p> <ul style="list-style-type: none"> <li>○ At the transport layer – shall use SOAP/XML reliable messaging for all inbound/outbound communications;</li> <li>○ At the application level – shall track the status of messages to determine their state (delivered, responded to, error conditions, etc.), as well as conducting other required functions, such as appropriate authentication/authorisation of messages, audit etc.</li> </ul>			
1.19	<p>The solution must have the following:</p> <ul style="list-style-type: none"> <li>○ Submission Service Interface: This shall provide an XML Web Services (SOAP) interface allowing submission of messages.</li> <li>○ Request Processing Engine: This shall provide the capability to process and route requests as they arrive. Message Store: This shall provide temporary and permanent storage of messages that are exchanged through system.</li> </ul>			

<p><b>1.20</b></p>	<p>The solution must enable integration with other systems that use a variety of different mechanisms, embodied in integration adapters or connectors. The solution has to be integrated with back-end systems through the support of at least the following technologies and applications:</p> <ul style="list-style-type: none"> <li>○ SOAP: for communicating with Web Services. Common Relational Database Systems: Querying and updating proprietary databases such as Oracle Database, Sybase, DB2 or Microsoft SQL Server</li> <li>○ HTTP: simple posting of documents to Web servers, often in XML format.</li> <li>○ File drops: to local or network storage.</li> <li>○ Database Connectivity Standards: Querying and updating databases using access technologies such as ODBC or OLEDB.</li> <li>○ Custom API: The Customs Authorisation/Decision Management Information System shall provide the creation of custom adapters that will be able to connect to such APIs.</li> </ul>			
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1.21	The platform must be installed on Active/Passive clustering configuration.			
1.22	The ESB platform needs to have the orchestration components in order to host all predefined Customs Authorization/Decision Management Information System.			
1.23	The ESB should be a Commercial-Off-The-Shelves (COTS) software application.			
1.24	ESB must provide the base functionalities as a service broker; these capabilities will be SOA based.			
1.25	The ESB must support the endpoint run-time discovery and virtualization. The service consumer will not be required to be aware of the service provider location and endpoint details; it must be ensured that a new or modified service provider can be added to the ESB, without interruptions to the service consumer.			
1.26	The ESB must support loosely coupled service composition. The service provider and service consumer will not have to be aware of service interaction style.			
1.27	The ESB must support dynamic message transformation and translation. The mapping definition between distinct message structure and semantics will be resolved at run time.			
1.28	The ESB must support dynamic routing: run-time content-based, itinerary-based, or context based message routing.			
1.29	The ESB must ensure centralized exception management.			
1.30	The ESB must provide protocol transformation.			
1.31	The ESB must have multiple extensibility points to extend functionality for endpoint discovery, message routing, and additional adapters for run time and design time service support.			
1.32	All messages from the ESB must be stored in a single, unified storage space. It must be provided for all information types (files, logs, etc.), preferably in the form of a high responsibility relational database management system (RDBMS).			

1.33	Detailed audit-track functionality. Audit of the following actions must be provided: object creation, modification, deletion, registering the name/ID of the user (or authenticated actor) performing the action and the exact time of the action.			
1.34	Workflow support: The ESB must provide either built-in workflow support for UML based workflows or a mechanism with which UML-based workflows can be incorporated into the ESB. The workflow engine must be customizable.			
1.35	The bidder must provide maintenance and support for a period of 2 years which includes rights for new software versions, security and functionality patches and service packs.			
1.36	<p>RDBMS must achieve mission-critical confidence, breakthrough insight, and the cloud on their terms. It should meet industry requirements for high availability for mission-critical availability. RDBMS must support:</p> <ul style="list-style-type: none"> <li>○ Always-on Failover Cluster Instances and Log Shipping</li> </ul>			

1.37	<p>RDBMS has to have the ability to enable data warehousing with support of:</p> <ul style="list-style-type: none"> <li>○ Multi-instance support,</li> <li>○ Table and index partitioning,</li> <li>○ Data compression,</li> <li>○ Resource Governor,</li> <li>○ Partition Table Parallelism and Multiple File-stream containers</li> </ul>			
1.38	<ul style="list-style-type: none"> <li>○ RDBMS should deliver built-in BI through self-service analytics balanced with IT management interactive data exploration and visualizations and broad adoption.</li> </ul>			
1.39	<ul style="list-style-type: none"> <li>○ RDBMS needs to have a built-in support for complex data types, greater interoperability with varied platforms, and common tools, to quickly create and scale innovative hybrid IT solutions across server, private, or public cloud.</li> </ul>			
1.40	RDBMS should support for Hot Add Memory and CPU.			
1.41	The RDBMS should be installed on Active/Passive clustering configuration on two physical servers.			
1.42	The bidder must provide maintenance and support for RDBMS during period of 2 years which includes rights for new software versions, security and functionality patches and service packs.			

1.43

**General:**

*Activities resulting Enterprise service bus implementation*

**1. Project initiation stage**

**2. Envisioning**

- 2.1 Creation of vision document
- 2.2 Preparation of Master Project Plan

**3. Analysis**

- 3.1 Selection of services to be integrated
- 3.2 Final architecture for ESB Solution
- 3.3 Documentation for selected e-Services ready

**4. Design**

- 4.1 Acceptance test creation
- 4.2 Design of logic and integration with back-end systems
- 4.3 Design of Registration - Authentication - Authorization
- 4.4 Design of Transaction and Messaging platform
- 4.5 Design of standards and rules for interoperability
- 4.6 Design of security platforms

**5. Development**

- 5.1 Development of back-end adapters
- 5.2 Development of Registration - Authentication - Authorization system
- 5.3 Development of eService management module
- 5.4 Development of Transaction and Messaging platform
- 5.5 Development of eForms factory
- 5.6 Development of the messaging and transaction register
- 5.7 Development of security protocols

**6. Deployment**

- 6.1 Deployment of testing environment
- 6.2 Deployment of Production environment
- 6.3 Acceptance tests of ESB functionality
- 6.4 Transfer knowledge and training

**7. Operation**

- 7.1 Go-Live
- 7.2 Project closure report

	<p>The proposed solution should be scalable to allow the integration of the Legacy system (ISCS) with NCTS (New Computerised Transit System), RMS (Risk Management System, IPS (Inspection Protocol System), AMS (Authorisation Management System) and AEO (Authorised Economic Operators).</p> <p>Exchanged messages among all mentioned above systems are in XML format.</p> <p>All backend systems must provide documented interfaces or services for integration with ESB. For systems where this may not be a case, it is responsibility of the Beneficiary to provide method for interfacing with backend system. Such requirement may not be assigned to bidders for ESB platform.</p> <p>The installation must be performed by personnel having necessary Vendor certifications.</p> <p><b><i>Post-Completion Documentation</i></b></p> <p>The Contractor will be responsible for preparation of Technical Post-Completion Documentation describing the system implemented. It should include graphical description of interconnection between various elements, all hardware and software configuration details, start-up scripts and a description of mandatory maintenance procedures to be followed by the CAS during day-to-day operation of the equipment. The Post-completion Documentation will subject to the approval of the CAS and the Contracting Authority.</p>			
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	<p><b>Training</b></p> <p>The supplier must provide the education necessary for CAS staff to be fully trained on the usage and maintenance of all hardware and software components of the delivered solution. All training materials must be packaged for electronically delivery and accessible for on-demand requests. Training should include minimum 7 days for up to 40 staff. Training should be organized by certified professionals at CAS premises.</p> <p>The training system must include full documentation (localised into Serbian or English). All training materials must be controlled and updated by the Contractor and Vendor as needed to reflect the production state of the delivered items.</p> <p><b>Warranty</b></p> <p>One year warranty after provisional acceptance in accordance with the conditions laid down in Article 32 of the General Conditions.</p> <p><b>Commercial Warranty</b></p> <p>Two-year commercial warranty by the manufacturer that the supply will be free from structural defects due to substandard material or workmanship, under conditions of normal commercial use and service. Commercial warranty must remain valid for two years after standard warranty period expires in accordance with the conditions laid down in Article 32 of the Special Conditions.</p> <p><b>Place of Delivery</b></p> <p>The Solution should be delivered in the CAS Headquarters 2 (ICT Division) located in Belgrade 11070, Narodnih Heroja 63.</p>			
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