# RFP Lund municipality

This procurement is for a total of 2 large municipalities.

Requirements below, each requirement is to be answered only with a **YES** or **NO**.

“The system” = RPA platform

# Server environment

## Operating system

* The system must have support for Microsoft Windows Server. The system must support the latest and previous version. Updates and patches are installed regularly.

**YES**

* The system must have support for virtualization with the help of the following platforms: VMWare (6.5 and later), Hyper-V (2012 R2 and later).

**YES**

* As database engine primarily Microsoft SQL Server is used. The system must support the latest and previous version. Updates and patches are installed regularly.

**YES**

* Web server is Internet Information Services (IIS). The system must support the latest and previous version. Updates and patches are installed regularly.

**YES**

## Backups

* There must be a description of which information must be backed up from the RPA system. For systems with requirements for redundancy there must be a description of redundancy and a plan for data continuity. The system must have support for failover functionality.

**YES**

## Disaster and recovery plan

* There must exist a documented plan for disaster recovery.

**YES**

## Monitoring

* The system must have support for Microsoft System Center Manager (SCOM) for monitoring. The status of the system and functions must be possible to be monitored via an open, documented, electronic interface through a central monitoring system.

**YES**

## Traceability/Logging

* All login attempts must be traceable. Each logging must contain at least user, time, IP address.

**YES**

## Send email

* The system must have support for Microsoft Exchange Server as email solution. All emails the system sends internally must have sender @lund.se or @malmo.se and be sent via SMTP Relay.

**YES**

## Antivirus

* If the system requires exceptions for virus scanning, the documentation must contain description of which exceptions must be made.

**YES**

# Client

## Authentication

* Single Sign On (SSO) is achieved mainly by SAML2 but also through AD/Kerberos integrated login. This requirement applies for login to the tools that create flows, processes in the RPA platform.

**YES**

* The level of access must be possible to control based on the authentication method used (strong authentication, one time password, etc.). AD/Kerberos/BankID/SAML2/SITHS/EFOS.

**YES**

## Qualified password

* It must be possible in the system to set complex rules for password requirements. E.g. length, requirements on lowercase, uppercase letters, numbers, special characters and also for change frequency.

**YES**

## Authorization/permissions

* Access to different parts of the RPA platform, including read and write access rights to information, must be controlled by a customizable role based access control system.

**YES**

* User accounts in the system must be possible to create, read and erase via an API.

**YES**

* Access groups/Permission groups must be possible to create, read, update and erase via an API.

**YES**

## Automatic logout of user account after certain time of inactivity

* Logout (alternatively disconnection of session and “clearing” of screen) can be performed by the primary access point (network login) alternatively by the application. The time period must be configurable. [Comment from Janne: I interpret this as if it’s possible to configure time period for when a user is logged out from Orchestrator and/or Studio.]

**YES**

## Web client

* If the system is to be made available through a web interface that is accessed via a web browser, it must work regardless of client operating system including mobile platforms.

**YES**

* The system must support the following web browsers: Internet Explorer and Chrome.

**YES**

* The system must be adapted continuously so that the latest and previous major web browser versions work.

**YES**

* The web interface must as far as possible follow Web Content Accessibility Guidelines (WGAG) 2.1 level AA.

**YES**

* Remedies must have been taken in order to assure that the application is not vulnerable when it comes to flaws mentioned in OWASP’s top ten list. (OWASP – The Open Web-Application Security Project)

**YES**

## Distribution of applications

* The Client has a client platform based on Microsoft Windows operating system. The applications are distributed mainly via APP-V 5.x technology, but also via MSI packaging or publishing via Citrix. If the system is made available via a program that is to be executed on a Windows client then the following requirement applies: The program must work on the latest and previous version of Windows. The program must be distributable according to above.

**YES**

# Data

## Transferring of data

* All data that is sent between different systems or between the system and the Client must be protected appropriately through encryption, most often this means using SSL/TLS encryption, and then it must be configured according to these recommendations: <https://github.com/ssllabs/research/wikiSSL-and-TLS-Development-Best-Practice> There must exist standard functions which encrypts all traffic between client and server.

**YES**

## Data

* All process development and data that is produced by the system is owned by the Client and must be possible to be published as open source code.

**YES**

## Erasing

* The system must have functionality for erasing of data, where the Client may control the time, interval and selection for erasure.

**YES**

## Export of data

* All data that is created by users in the system must be possible to fetch for further processing and archiving in the Client’s other systems through standard APIs and open formats.

**YES**

# Hosting

## Test environment

* A test environment must be possible to use in parallel with the production environment for testing of new or changed functions, modules and updates before a go-live.

**YES**

## Development environment

* A development environment must be provided.

**YES**

## Updates

* The Vendor must have a continuous plan for recurring function and security updates. At new updates, the Vendor must guarantee total hosting security. No robots are to be affected negatively.

**YES**

## Scalability

* The system must be possible to scale up to handle more load that what was initially calculated.

**YES**

# Security

## Storage of data

* If storage of data requires protection it must be implemented. Often this is about SQL Server databases and these can be encrypted with Transparent Data Encryption (TDE). This could also be about encrypting disks and this can be done by using Bitlocker. Also all connections to SQL must be protected with SSL/TLS.

**YES**

## Security breaches

* Security vulnerability scans of the system and sometimes penetration tests may be performed by the Client. If security breaches are discovered in the system, the RPA vendor must immediately fix this without any extra cost.

**YES**

## Information security

* Information security requirements according to the appendix “Information security requirements” must be fulfilled.

***Do not have this document***

# Functionality

## Citrix

* Some central systems (e.g. Procapita) are accessed via Citrix. Many processes use these systems and therefore the system must be able to handle automation via Citrix, e.g. by using OCR and simulation of key presses.

**YES**

## PDF

* Several processes include reading of PDF files (e.g. invoices in Raindance) or to create decisions and other documents in form of PDF files that are then sent to citizens or registered in other systems. The system must therefore be able to read and interact with PDF files.

**YES**

## Excel

* Excel is used frequently in many processes, both as input, temporary storage or end result in a process. The system must therefore be able to read, interact with and write to Excel files.

**YES**

## Word

* Word is used frequently to produce decisions and other documents and can also be used as input to processes. The system must therefore be able to read, interact with and write to Word files.

**YES**

## Web scraping

* Multiple systems at the Client are web based. Some processes include also collection of data from external web pages. Web browsers used primarily are Internet Explorer and Chrome. The system must have good support for “web scraping” and be able to identify objects with the help of tags, selectors or alike in these browsers.

**YES**

## Email via Exchange

* The system must have support to read email as input to a process and to send emails (e.g. status report after performed work). The system must be able to handle the following email solutions: Microsoft Exchange/Outlook and Exchange Online.

**YES**

## Windows applications

* The Client’s IT environment is mainly based on Windows and therefore many of the applications are Windows based applications. The system must be able to interact with Windows based applications. There must be support for identifying objects in the interface with the help of underlying ID/tags/selectors regardless of if the application is based on Java, .Net or other technology.

**YES**

## SQL Server

* The Client’s data layer is based on SQL Server so in certain processes it will be required that the system has support to read and write in this.

**YES**

## Optical Character Recognition

* Multiple processes include still physical documents. To be able to support these processes, the system must be able to read scanned documents.

**YES**

## API

* In certain cases it is possible that the RPA solution needs to be able to communicate with other systems via APIs. Even to ensure future integrations with e.g. chatbots, the systems must be able to communicate through e.g. APIs.

**YES**

## Logging

* The system needs a robust logging functionality (auditing) in order to ensure transparency in all automated processes. The possibility to trace what has happened in each step is important since the robot will handle critical data regards e.g. school choices and messages to users in care and welfare. The logging data (audit data) must be possible to export in a format so that it’s possible to visualize in other tools such as QlikView.

**YES**

## Version handling

* It is possible that many different persons will be involved in different stages of the development of automated processes. In order to ensure organized development and deployment and allow for rollback to previous releases at errors/bugs, the system must have support for version handling.

**YES**

## Secure handling of authorizations/credentials

* Multiple systems at the Client contains personal and other sensitive data. Authorizations, credentials that provides the system access must be stored in a secure way in order to avoid leakage of sensitive data.

**YES**

## Locked screen

* To avoid human interaction when a robot is executed on a computer and to avoid unauthorized persons to see what the robot is doing, there must be support for the robot to execute behind a locked screen (Windows).

**YES**

## Automatic login/logout

* The system must have support for automatic login/logout from the applications the robot interacts with so that the robot is only logged in during execution of a process.

**YES**

## Exception handling

* Many of the processes contain steps where indata may deviate from standard. It may also be possible that a system/application doesn’t behave correctly each time, so the system must have functions to handle both indata and system related exceptions in a good way.

**YES**

## Queuing

* In order to ensure good degree of usage, the system must have support for creating and fetching of transactions from a queue. The queue must be possible to place in a central server so that it is reachable from multiple robots at the same time.

**YES**

## Monitored and unmonitored robots

* At the Client there are both processes that are suitable for both unmonitored and monitored robots (unattended and attended). Therefore the RPA system must have support for both types of robots. With unmonitored robots is meant a robot that can work self-sufficiently without human interaction, e.g. according to a schedule or specific events/triggers that arise in an application. With monitored robot is meant a robot that is started by and interacts with a human.

**YES**

## Administration console

* In the system it must be possible to administer the robots with the help of a centralized administration console. The administration console must be able to show and handle for robots such as their status, which processes are executed, scheduling, authorizations and licensing.

**YES**

## Flexibility

* Certain processes have a great workload at certain periods (once a year, six months). The system must in a flexible manner make it possible to scale up and scale down the number of robots that work on a certain process according to needs.

**YES**

## Structured data

* The system must have support for handling structured data in a tabular form. For example by being able to extract and store structured data from a web site or another system, read data from CSV, JSON or other file formats for structured data.

**YES**

## Debug function

* The development environment must have a debugging function which enables immediate detection and correction of errors/bugs in a workflow.

**YES**

## Support for AI and ML based technology

* In order to ensure that the system is future proof, there must be functionality (or at least a plan for upcoming functionality) for integration of the RPA solution with technology which is based on Artificial Intelligence and Machine Learning. Examples of technologies that might be used are integration with chatbots, interpretation of free text, interpretation of speech, interpretation of other non-standardized indata and also learning capabilities which makes the robots better over time in handling deviations and exceptions in indata.

**YES**

# Other

## Language

* The system must have documentation in Swedish or English.

**YES**