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| Annex 1  16 June 2017  File No. |

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| Requirements specification |

A Managed File Transfer system for digital legal deposit

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# General description

**A Managed File Transfer system for digital legal deposit at The Royal Danish Library**

In the context of the digital legal deposit of published material, the Royal Danish Library has a growing need to be able to offer the deposit of digital materials and their associated metadata in as flexible a way as possible.

One of the main requirements to the system is that it must give the Royal Danish Library’s content providers an option between two different types of deposit workflow, where there is a correlation between the content data and metadata:

* An automated digital workflow where a deposit can be set up so that it takes place continuously and automatically.
* A digital workflow where deposit can take place manually using file uploads and metadata input forms in a browser.

The automated workflow is first and foremost intended for those providers who continuously deposit larger quantities of digital material, such as e-books with finished metadata files. The manual workflow is first and foremost intended for content providers, who only rarely deposit and only deposit smaller quantities of digital material without the accompanying metadata in the form of files.

In connection with the setup of metadata input forms, it is important that this can be done using a GUI based web interface, so it does not require knowledge of HTML or the use of programming languages. It is also important that the setup for the further processing of the incoming data and metadata can be done using a GUI based web interface, so it does not require the use of programming languages.

Other very important requirements for the system are a) high data and communication security, b) receipt both for external and internal use, c) built-in GUI based workflow engine and d) option for integration with other systems using API’s.

We envisage a Managed File Transfer system that is a fully developed standard product that as a starting point does not require development from either the supplier or the Royal Danish Library.

The Royal Danish Library must comply with the ISO 27001 security data international standard and we are therefore setting a requirement that data security is taken into account with regards to the standard and that the system can meet these requirements.

# RDL infrastructure

The Royal Danish Library’s server infrastructure consists of approximately 400 servers, the majority of which are located in virtual environments. It is a requirement for the new Managed File Transfer system that it can run on Linux.

# Detailed description

## Minimum requirements

In general, all the system’s features and setups are to be supported by a GUI based user-friendly web interface that is supported by modern browsers (e.g., Edge, Firefox and Chrome) in the latest versions. This means, among other things, the workflow and web forms can be created without the use of programming languages and scripting languages.

* The system shall support the following types of data exchange:
  + Data exchange using the following protocols, SFTP, FTPS, FTP, SCP.
  + Data exchange using message queue (MQ), first and foremost, ActiveMQ that is used by The Royal Danish Library.
* The system shall support the following types of server communication:
  + Communication with AS2, e-mail and HTTP(S) server. For the HTTP(S) server, communication with web services (REST and SOAP) must be supported.
* It should be possible to deposit files and folders using Drag-and-drop in a browser.
* We expect that the system supports monitoring of folders on FTP servers, so that data can be retrieved from these when it is placed in the selected folder.
* Data stored in and processed by the system must be encrypted.
* Encryption and decryption of data must be possible.
* It should be possible to produce web forms for data input of metadata and uploading of data files using a GUI based web interface. The web forms that are produced must also be accessible through SOAP interfaces.
* The system must support the conversion of data formats, including specifically between Excel, CSV, JSON and XML data formats.
* The system must be able to connect to the most common databases (especially PostgreSQL) and make enquiries against these. Import and export of data between database and Excel, CSV, JSON and XML data formats.
* We expect it is possible to produce workflows that support the option to interact with external and internal systems, as well as being able to move and convert data and metadata. These workflows must be produced in an easy-to-use GUI based web interface.
* The system must support that events trigger actions as a step in the workflows.
* We expect that this system is able to activate features or workflows at specified times.
* Content providers should be able to get an overview of their deposits, as well as receive a receipt for the deposit (or failed deposit) of data and metadata. It must also be possible internally within the Royal Danish Library, to receive receipts in connection with deposits (or failed deposit) from content providers.
* It must be possible to access logs and generate reports about activities in the system. This applies to, among other things, summaries of deposited data and metadata, as well as the system’s performance.
* Compression and decompression of data must be possible. As a minimum, the following package formats must be supported: ZIP, GZIP and TAR.
* Automatic production of checksum for deposited files should be possible. As a minimum, MD5 and SHA algorithms must be supported.
* It must be simple to be setup as a content provider in the system.
* Integration with Active Directory must be supported, so we can manage user access to the system via the AD’s groups.
* It should be possible to integrate the system with the Danish Nemlog-in, e.g., by the system supporting SAML Protocol.
* It is a requirement for the system to send software updates as soon as possible if security problems are discovered in the system.
* The system must be able to run locally (on-premise).
* The future users, who will be both system administrators and collection managers, shall receive a minimum of 2 days of training in the use and configuration of the system.

## Options

* It must be possible to transfer attachments to e-mails via the system instead of through the e-mail protocol, by which the transfer of larger files than normal is permitted, as well as to increase security.
* As an option, a quote is wanted for help with the installation of the software on the Royal Danish Library’s infrastructure
* As an option, a quote is wanted for ongoing maintenance of the installation in the form of upgrades of the software when new versions of this are released.

# Project definition

The project can be considered as completed when:

* Software is supplied with functionality that conforms to the contract.
* Training of users has been carried out.
* A possible service agreement is drawn up concerning installation, configuration and upgrading of the system between the supplier and the Royal Danish Library. Of course, it depends on the solution – see the Service Agreement section.

# Service Agreement

A offer is wanted for a draft service agreement regarding installation, configuration and upgrading of the system. For the economics associated with this, please see the Economy section.

# Economy

The offer must include a comprehensive description of the system’s economy, i.e. acquisition costs and ongoing operating costs.

Acquisition costs shall be specified in the software (one-time licenses, etc.), training, as well as all other one-time costs.

Continuous operation is calculated as annual costs and specified in any ongoing licence costs and service subscriptions/hotline/service agreements.

If there is a choice between levels of support, the consequences of the different levels are to be illustrated.

An indication of the cost of a service contract is also requested, where the supplier carries out the installation and configuration of the system, as well as being responsible for the future maintenance of the system in the form of upgrades.

The hourly rate in addition to any applicable service agreement is also to be stated.

# Requirements for the solution

The offer shall specify the conditions attached to the solution.

The supplier must complete *Annex 1a – Bill of Quantities* with their own comments and specify whether it is possible to meet the requirements fully, partially or not at all.