**PART 2 – SECTION B**


**FUNCTIONAL REQUIREMENTS**

**Contents**

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**2.     OBJECTIVES**

2.1     The Solution shall enable the Authority and its stakeholders to digitalise and transform the student loan administration processes. The following are the key outcomes that the Authority wants to achieve in the Solution:

a) End-to-end digital service delivery through the entire loan administration lifecycle;

b) Operational efficiency via workflow automation and digitalisation;

c) Business intelligence and data reports for planning and review.

**3.     GENERAL REQUIREMENTS**

3.1     The Tenderer shall ensure that the proposed Solution shall be flexible to allow Users to make configurations to meet the Requirements Specification.

3.2     Design Considerations

3.2.1   The Solution shall be designed with adequate field validations and cross fields verifications to maintain data accuracy, validity and integrity within the Solution and the external system(s) the Solution interfaces with.

3.2.2   The Solution shall support validation rules on the field and record level.

3.2.3   The Service shall provide comprehensive search functions, with access control, for authorised users to query information captured in the Solution.

3.2.4   The Solution shall be able to limit access to certain fields, or values of a field based on the status of a workflow, user access, and other combinations.

3.2.5   To ensure data integrity of fields updated from external Single Source(s) of Truth (SSoT), ie. interfaced from internal or external systems, the Solution shall not allow users to manually override the values. The Contractor shall conduct detailed requirement study with users to identify the ideal design approach.

3.2.6   The Solution shall be designed to be parameter-driven to allow flexibility to accommodate changes without amendments to program (e.g. batch job scheduling, time out value, pre-set period for sending reminder notices, frequency of reminder notices to be generated, announcement messages etc.) and computations (e.g. business rules for billing rates, subsidy amount, etc.). These parameters shall come with effective dates and be configurable by the Administrator of the Solution.

3.2.7      The Contractor shall confirm all supportable file formats for export during the requirements gathering phase. The Solution may allow user to export queries, data, reports and documents to minimally the following formats, where applicable:

        a) MS Excel spreadsheet (.xls, .xlsx)

        b) CSV (.csv)

        c) PDF (.pdf)

        d) Any other text delimited file formats

3.2.8      The Solution shall allow the query result to be sortable, filterable and downloadable/exported into common format such as excel (e.g. xlsx) and pdf format.

3.2.9      The data captured within the Solution shall be fully integrated and accessible by all Solution functions to avoid the need for users to re-key the same information.

3.2.10    The Solution shall have the capability to configure data validations to ensure that correct (e.g., format of data, field length) and valid (e.g., against business logic rules, file extensions) data and files are captured.

3.2.11    The Contractor shall confirm the supportable file attachment formats during the requirements gathering phase. The Solution shall be at least able to support the following file formats as attachment:

        a) PDF

        b) MS Word, MS Excel

        c) JPEG, PNG, GIF, BMP

        d) ZIP

3.2.12    The Contractor shall carry out consultations with users to gather, discuss, and confirm the users' requirements. The Contractor may propose efficient solutions and workflows based on the users' requirements for the Authority's approval.

3.2.13    The Tenderers shall recommend existing product features that allow for areas of process automation during the requirements gathering phase.

3.2.14    The Contractor shall work with the Authority to determine the necessary user roles and design an appropriate user access matrix, including the business rules for auto-assignment of certain user roles (ie. public-facing access roles).

3.2.15    Both backend and frontend users shall be able to access the Solution via Internet.

3.2.16     The Solution shall be able to onboard any additional user roles or make any amendments to existing user roles as specified by the Authority.

3.3       Audit Trail

3.3.1     The Solution shall provide detailed audit trails (with date and time stamps to be captured based on the Solution's date and time) on actions performed (to be confirmed during requirement gathering phase) by all users in all modules.

3.3.2     The Solution audit trail shall record all significant activities in the Solution such as the creation / updating / deletion of records in the Solution. The audit trail log can then be retrieved and used for investigating any abnormal activities.

3.3.3     The Solution shall keep track of all changes made by the Users, including the values before and after the changes, the addition of new records and deletion of old records.

3.3.4     The Solution shall keep track of all the login / logout date / time of all the Users, including failed login attempts. The Solution shall allow automatic log-out if users are inactive for a specified period of time.

3.3.5     The Solution shall present the audit trail log in a user-friendly and human readable format. It shall allow the User to specify the date range, modules, actions and users for the extraction of the audit trail log.

3.3.6     The Solution shall allow audit trail log to be exported into CSV format and other commonly available formats.

3.4       Archival & Housekeeping

3.4.1     The Contractor shall propose a comprehensive housekeeping utility and put in place batch jobs to housekeep and archive the data according to the policies highlighted in the Government IM and the Authority's Archival and Housekeeping guidelines. Housekeeping is also needed to ensure that desired performance could be achieved and that resources are efficiently utilised.

3.4.2     The Contractor shall propose the necessary measures concerning periodic housekeeping, which includes the following where applicable:

         a) Schedule housekeeping for data tables;

         b) Schedule housekeeping for configuration tables; and

         c) Schedule housekeeping for application files.

3.4.3     The format of the archived data shall allow access to be made via popular tools (e.g. MS Excel) and not dependent on the Solution. All transaction data shall be kept on permanent basis. The number of

years for keeping audit trails of the Solution shall be determined by the Authority during requirement study phase.

3.4.4    The Contractor shall discuss and confirm with the Authority, and document the following:

a) The retention period for each type of information (includes audit logs);

b) The actions to be taken after the retention period, e.g. to transfer to offline media, to delete them, etc;

c) The format for offline data, period of storage of offline data, the types of storage media, e.g. tapes, diskettes, reports, etc; and

d) The process to restore archived data. The process shall be submitted to the Authority for approval before the Service Commencement Date.

3.4.5    The Solution shall generate a report on the outcome of each archival run after completion of the run.

3.4.6    The Contractor shall conduct detailed requirement study with users to study the archival policies and develop programs to housekeep records on a regular basis. Listing of such records shall also be generated on a regular basis.

## 4.       FUNCTIONAL REQUIREMENTS

4.1      The functional requirements are listed as high-level business process in Part 2 Section B, Annex A.  The Authority would be sharing the User Stories only after the Tenderers have returned the signed copy of the Non-Disclosure Agreement (NDA).

4.2      The Solution shall be designed to auto save at configured interval and user triggered save draft capabilities. The saved records and drafts shall be retrievable for editing.

4.3      The Solution shall ensure data captured undergo format checks and are validated against a set of rules/tables given and mandatory data fields shall not be left empty.

4.4      The Contractor shall ensure that the Solution prompts the Users for confirmation before data is saved or deleted.

4.5      The Contractor shall design the Solution such that important and frequently used displays shall be located within a normal user's vision.