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FSA Modernization Partner

**NSLDS II Reengineering
Detailed Design Executive Summary**

Version 1.0

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Document Control

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1 Introduction

Pursuant to Modernization Partner Task Order 94, Work Order #3 – NSLDS II Reengineering Detailed Design Phase, this is the deliverable entitled NSLDS II Detailed Design (94.3.3). This deliverable contains the detailed design documents that are the basis for the construction and implementation of NSLDS II Release 1. This summary is provided to give context for the NSLDS Reengineering effort, a brief description of the NSLDS II project, and short descriptions of the documents that comprise this deliverable.

This deliverable describes the NSLDS functionality made available to the Modernization Partner as of October 2002, and is based upon the System Requirements document for the NSLDS II Reengineering project that was published in July 2002. It is assumed that the NSLDS II Change Control Board (CCB) will discuss additions, modifications, and deletions to the legacy NSLDS functionality described within this deliverable. All changes accepted by the CCB will be treated as changes to scope and included in future releases of this documentation.

2 Legacy NSLDS Background

The legacy NSLDS is a comprehensive repository of information about Title IV Aid recipients and their loans, grants, lenders, Guaranty Agencies (GAs), servicers, and schools. It provides an integrated view of Title IV loans and grants during all stages of their life cycle from aid approval through disbursement, repayment, delinquency, and closure.

As NSLDS has evolved since its implementation in 1994, it has become much more than an analytical and reporting system and, today, supports key operational requirements. Specific capabilities include:

- Determining student eligibility for Title IV student aid – both prescreening and postscreening
- Calculating default rates for schools, guarantors and lenders
- Supporting financial management activities including:
 - Guaranty Agency LPIF and AMF payments
 - Budget formulation/execution and modeling
 - Reasonability of payments to guarantors and lenders
- Reporting student enrollment status
- Providing information to policy, research and other groups

The legacy NSLDS is an IBM DB2 database stored on an IBM 9672-R85 mainframe and includes transaction-level detail on loans and default rates, with referential relationships to students, GAs, lenders and school entities. It is a classic Online Transaction Processing (OLTP) design and includes normalized data structures in the 3rd normal form.

Legacy NSLDS is comprised of multiple databases created to serve different purposes.

- Active Database – Designed to hold loan-level information for open student/borrower accounts.
- Archive Database – Designed to hold loan-level information for closed student/borrower accounts.
- Online Statistical Abstract (STAB) Database – Created in response to research teams requesting a random and statistically valid sample of NSLDS data.

While the Active Database was designed to hold open loan-level information, it actually contains both open and closed loan-level information for student/borrower accounts. The Archive Database has never been populated with data.

3 Scope of NSLDS II Release 1

Currently, the legacy NSLDS is hampered by a number of challenges related to discrepancies between the quality and timeliness of its data and the system of record, as well as its operating costs. Given these challenges, a project to modernize the system – NSLDS II Reengineering – has been undertaken to retain the capabilities described above with the following objectives in mind:

- Improve financial integrity
- Reduce FSA costs associated with NSLDS and related operations
- Improve customer satisfaction through better quality and usability of NSLDS information, benefiting the Department and other NSLDS users in the financial aid community
- Balance FSA data needs with burdens placed on the financial aid community
- Improve usability of the NSLDS data repository through new tools
- Take greater advantage of data resources available within FSA and from the financial aid community

At the heart of NSLDS II Reengineering are five “big ideas”. These ideas for reengineering NSLDS will require radically changing some of the underlying processes, data structures and technical platforms supporting the existing system. The NSLDS II Reengineering Release 1 project is focused on the two ideas surrounding the NSLDS technical infrastructure and internal FSA sources of data. These two ideas are:

- **Data Warehousing**, which provides for restructuring of the NSLDS data repository to support modern data mart analytical tools
- **Internal FSA Direct Access**, which supports more timely, “snapshot-in-time,” views of FSA-maintained Title IV aid data and positions FSA systems to support a future FFEL and Perkins fetch capability by integrating NSLDS II more closely with the EAI Bus architecture

The remaining three “big ideas” will be addressed in the following phases of NSLDS Reengineering. These initiatives will build on the improvements achieved through NSLDS II Reengineering to further improve the data quality and customer satisfaction for NSLDS users. These three ideas are:

- **Outsourced Enrollment Tracking**, which provides for combining FSA and National Student Clearinghouse (Clearinghouse) enrollment data into a single repository and outsourcing Student Status Confirmation Reporting (SSCR) to the Clearinghouse
- **FP Data Feed Reengineering**, which aims at integrating Financial Partner’s (FP) data reporting with FSA’s FP payment processes including:
 - Interest subsidy and special allowance payments for lenders

- AMF/LPIF payments and reinsurance payments for guaranty agencies.
It also includes the potential creation or adoption of a FFEL fetch network to support future data exchange with FSA and NSLDS II.
- **Common Record Extension**, which provides for expansion of the Common Record to include servicing information
 - Use members of PESC as a forum to drive this effort, including XML standards, record formats, and edit rules
 - Sequence adoption by lenders, services, GA's, and schools

The reengineering of NSLDS is also integrated with other reengineering efforts planned and underway as part of the overall FSA Modernization effort. These efforts include, but are not limited to, projects like Customer Relationship Management for FSA (CRM4FSA), Common Servicing for Borrowers (CSB), and CPS Reengineering. Coordination of design and development across these efforts will be achieved through frequent interaction of the various project teams and FSA stakeholders to build common knowledge of processes, practices and integration points. This coordination will require long-term commitment and effort from each of the various initiatives and from FSA. In short, as initiatives are delivered, they should look to take advantage of common points of integration with their predecessors and to lay the foundation for those that follow.

In addition to addressing the major objectives of overall NSDLS Reengineering and the greater FSA Modernization effort, these “big ideas” support - in a much broader context - several key themes prescribed by the Bush Administration:

- **Unify** . . . government operations to reduce redundancy and consolidate into larger operations that promise economic gains (reduced unit costs) through economies of scale
- **Simplify** . . . the work processes of government so that less “new work” and less rework is needed to produce the desired result. This translates to lower unit cost
- **Best Practices** . . . adopt the most effective federal government practices (policies and work processes) to achieve better customer service and lower unit costs

4 Deliverable Contents

The content for the Detailed Design has been broken into the following major sections:

Interfaces Design – These documents define how and for what data NSLDS II interfaces with various systems, both internal to FSA and external to the Department. NSLDS II receives data from and/or provides data to the following internal FSA systems: Common Origination and Disbursement (COD), Central Processing System (CPS), Debt Collection System (DCS), Direct Loan Servicing System (DLSS), Financial Management System (FMS), Financial Partners Data Mart, Ombudsman, Postsecondary Education Processing System (PEPS), and the Student Aid Internet Gateway (SAIG). NSLDS II's external interfaces include Guaranty Agencies, Schools and their designated Servicers, and the Clearinghouse.

Internal System Procedures – These documents define the logic behind the NSLDS II system processes and calculations. The defined procedures include the Cohort Default Rate calculation, AMF and LPIF payments to Guaranty Agencies, Payment Reasonability, Student Transfer Monitoring, Federal Receivables, and aid eligibility Prescreening and Postscreening.

Reports Design – These documents define the reports that will be built and available to specific user groups in the NSLDS II system. These reports allow the Department of Education and/or the external financial aid community to request and access specific information stored in NSLDS II to support their business functions. Specifically, the Reports Design includes designs for the standard NSLDS Financial Aid Professional (FAP) website reports, benchmark reports, quality assurance/quality control reports, Data Provider Operational Support Unit (DPOSU) reports for both FSA and the Financial Partners, and ad hoc queries that were converted to reports. A user tutorial of the MicroStrategy reporting tool is also included.

Screens Design – These documents provide program specifications for the NSLDS II screens and application architecture for the Financial Aid Professional (FAP) and Student Access Financial Aid Review (SAFAR) websites. The FAP and SAFAR websites serve as the gateway for accessing and manipulating NSLDS data online. The Screens Design for the FAP website includes documents for the Login, Financial Aid, Enrollment, Transfer Student Monitoring, Organization, and Administration/Support modules. The Screens Design for the SAFAR website is contained in the Student Access module. Finally, the Application Architecture Design document defines the J2EE replatforming of the existing websites, detailing the application layer, business layer, and database mappings.

Technical Architecture – The technical architecture of the NSLDS II solution is explained in the Data Architecture and Data Conversion Detailed Design documents. The Data Architecture Detailed Design defines the data architecture of the NSLDS II Enterprise Data Warehouse (EDW) and Data Mart. This document contains the design, data model, and Data Definition Language (DDL) for the EDW and Data Mart, along with the mapping between the two databases. Additionally, the design contains a high level approach for the security and capacity of the NSLDS II system. The Data Conversion Detailed Design defines the data extract and load

process to transfer data from the legacy NSLDS database to NSLDS II Enterprise Data Warehouse and Data Mart.