



Business Case

Project Name: Electronic Promissory Note Processing

Channel: Schools, Students, Financial Partners

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Project Description

Describe the need for change (the business problem to be addressed).

As part of their implementation of the Government Paperwork Elimination Act (GPEA) and the Electronic Signatures in Global and National Commerce Act (E-SIGN), the Channels seek funds from the IRB to implement electronic promissory note processing by July 2, 2001. This initiative will allow borrowers to sign their promissory notes using the SFA-issued PIN. SFA will provide this electronic capability directly to its Direct Loan borrowers, and will provide PIN verification to other lenders (in FFEL and Perkins) if those lenders are interested in using the SFA-issued PIN.

This initiative has been divided into two phases:

Phase I has begun, and will continue for approximately one year after implementation on July 2, 2001. It is the initial implementation for which funds are sought in this business case.

Phase II begins October 1, 2001. During its development phase, additional work will be done using the information gathered in the first three months of Phase I. Items to be addressed during phase II will include the following:

- long-term storage of and access to the electronic notes and how that relates to the electronic records management task currently underway as well as the possible application of the EAI Bus;
- volume studies to prepare for electronic note processing for potentially all notes in the 2002-2003 program year;
- the integration of electronic note processing into the Common Origination and Disbursement task;
- the feasibility of developing a Perkins loan electronic promissory note and process;
- impacts on Debt Collection System (DCS);
- and the creation of an electronic PLUS note and a process for joint consolidation loans to be e-signed.

We estimate that as many as 250,000 Direct Loan promissory notes could be electronically signed during the first three months of operation (FY 01), with as many as one million more signed electronically during the rest of Phase I.

It is difficult to estimate the number of potential "hits" the PIN site will have from the FFEL and Perkins loan communities. Using the information available, we estimate that as many as one million "hits" from FFEL borrowers alone could be logged by the PIN site during Phase I.

There are other documents collected by SFA that are candidates for execution electronically. We believe that the work that will be done as a result of this business case is easily transportable to other applications.

What is the purpose of the initiative?



Functionality to be implemented will include an enhanced PIN site that will capture an “audit trail” of PIN verification requests; a web page for borrowers to use to consent to electronic promissory note processing, to review and sign their notes, and for schools to enter parameters for their students using electronic signature notes; a “home page” for borrowers who need access to any Direct Loan--related service; and improved trading partner handoffs for ready access to electronic notes when they are needed.

To comply with E-SIGN, SFA will issue standards for electronically signed documents and record retention. The electronic promissory note initiative will implement those standards for documents collected by SFA.

This initiative has been coordinated across all SFA business channels to create and implement an enterprise-wide electronic promissory note solution. The solution integrates and leverages e-signature processes already in use and under development within SFA.

What is the scope of the initiative, including what it is not?

The initiative implements electronically signed promissory notes, but does not produce solutions for other student aid documents to be signed electronically. However, the promissory note is the most significant document currently signed by students that does not have an electronic equivalent—both the FAFSA and several deferment/forbearance forms already have electronic equivalents. There does need to be additional work done on “business to business” documents which schools and lenders submit to SFA; it is hoped that the information gathered in this initiative will have some bearing on that business process as well.

The lessons SFA learns and the systems SFA develops to implement electronic promissory notes are transferable to numerous other forms, processes, and customers. For this solution, the electronic promissory note will be electronically signed with the SFA PIN. To prove that a loan was actually made, we will also need evidence of disbursement from the lender, the servicer, or the school, together with evidence the borrower either actually received that disbursement or gave express consent to the disbursement, as well as the electronically-executed promissory note. Corroborating evidence from the school, lender and/or servicer will be used in conjunction with the SFA PIN to complete a viable e-signature to withstand litigation. The option for a borrower to use a paper promissory note must still remain in effect, so this initiative will not eliminate paper promissory notes.

Collections personnel will need both the electronic promissory note itself and a hard copy print of the executed note, together with credible proof of disbursement, to support any dispute about the loan in an administrative hearing, and in bankruptcy and district court litigation.

This initiative does not include any of the add on activities discussed in Phase II of this effort, including joint consolidation and PLUS loans where we do not, in most cases, have PINs for parents and spouses.

What is the start date and end date of the initiative?

When legislation was signed in June 2000, work began in Loan Origination, Loan Consolidation, and Loan Servicing. However, detailed requirements did not begin to be gathered until November of 2000. Expected implementation of the initiative is July 2, 2001. See detailed milestones.



What other business areas/external groups are affected by the implementation of this initiative and how are they affected?

Students will need to have a PIN, access the note site, read and enter information, and sign the note using their PINs. They will need adequate technology to do that. They also need to be able to decline to do it, and receive a paper note instead.

Schools will need to counsel their students on the availability of electronic notes, set parameters in the web page on contacts and processes, and make minor changes to their internal processes.

Lenders in FFEL (and schools who choose to implement this in Perkins) will need to develop their own internal PIN/authentication method, using the SFA standards, or use the SFA PIN site for verification. They will also need to develop counseling materials, and web sites, to help students with the process.

Other parts of SFA that are potentially affected include CFO, because of its electronic records management task; and CIO, because of its control of the Virtual Data Center—the home of the PIN site and the database that will store the electronic records as well as the Loan Origination/Loan Consolidation Systems, which will capture the data through their web pages.

What systems are impacted by the implementation of this initiative and how are they impacted?

The following extant systems will be affected by the implementation of the electronic promissory note initiative:

PIN SITE (CPS) will need to be enhanced to capture more data about the reason a PIN verification is being requested, and the location making the request. The PIN site already verifies PINs for Loan Origination (DLOS), Loan Consolidation (DLCS), and Loan Servicing (DLSS).

DIRECT LOAN ORIGINATION SYSTEM (DLOS) already allows borrowers to do entrance counseling on-line, and verifies borrower's PINs during that process. However, new functionality will need to be developed to allow schools to set up parameters for electronic signatures for students at their schools; it will allow students to consent to e-sign, read their notes and be counseled on borrowing, and actually sign their notes using their PINs. Borrowers will also be able to print a copy of their signed note, or save it to disk. The transactions that verify PINs with the PIN site and pass data to DLSS will need to be modified slightly. The new e-notes will be stored in a secure database of their own, where they will be available for retrieval by Department employees or contractors with appropriate security.

DIRECT LOAN CONSOLIDATION SYSTEM (DLCS) already allows borrowers to apply using the web, but additional functionality will be necessary to allow the signing and storing of an electronic note. The transactions that verify PINs with the PIN site and pass data to DLSS will need to be modified slightly. As with DLOS, the new e-notes will be stored in a secure database of their own, where they will be available for retrieval by Department employees or contractors with appropriate security.

DIRECT LOAN SERVICING SYSTEM (DLSS) already allows borrowers to complete certain deferment and forbearance forms on-line, and verifies the borrower's PIN during the process. DLSS will need to be modified to receive the modified transactions from DLOS and DLCS indicating that a note was signed electronically and where that note is now stored. The customer service staff at Servicing will also need to view the notes on-line. In addition, it will create functionality to capture the references entered by the borrower during the e-note process. Finally, so as to make all borrower functions have a common "look and feel", DLSS will create a new Direct Loan Home Page, from which borrowers can go to any Direct



Loan area that affects them, including servicing, consolidation, entrance and exit counseling, and signing an electronic note.

DEBT COLLECTION SYSTEM (DCS) may need to modify its interface with DLSS to be able to take an indicator that the note was signed electronically and where that note resides. The customer service staff will also need to view the notes on-line.

What business processes are impacted by the implementation of this initiative and how are they impacted?

Business processes of **SCHOOLS** will need to be modified. In phase I, that modification will be minimal. Most schools will have already sent out and received paper notes before the July 2 implementation. This is useful, because it limits the potential volume of e-note transactions at the beginning of production. Schools will need information to counsel borrowers on their options (SFA intends to provide a brochure). Schools also want to set up parameters in the note web page so that borrowers can easily complete their notes electronically while still functioning within the normal business process of the school. For instance, some schools do not care if the students sign notes before they know whether they will actually get a loan; most schools do not want borrowers to sign notes until they have originated loans as part of their award process. In Phase II, after more extensive focus groups with schools, it is possible that their business processes will change more. But even in Phase I, they will receive and process fewer pieces of paper, thereby saving time and money.

Business processes of **LENDERS** may need to be modified to send and receive transactions from the PIN site, if they choose to use the SFA PIN. They also may need to modify their accounts payable systems to pay SFA for their PIN hits.

All parties to the transactions (students, schools, lenders, and SFA) can expect to save time and money as this process becomes the dominant way that notes are signed.

Other initiatives:

In Phase II of this initiative, extensive requirements analysis will need to take place with the **COMMON ORIGINATION AND DISBURSEMENT (COD)** team to ensure that all of the work being done in Phase I can be easily transferred to COD when it becomes operational. The design of Phase I is being done with that transfer in mind.

In Phase II of this initiative, extensive requirements analysis will need to take place with the **ELECTRONIC RECORDS MANAGEMENT (ERM)** team to determine whether these notes need to be stored as part of the ERM solution. The design of Phase I is being done with that solution in mind.



Technologies Used

List the proposed technologies that will be used to implement this project.

The timeline for this project requires that SFA use existing web and system technology used by the affected legacy systems: CPS PIN site, Direct Loan Origination web page, Direct Consolidation Loan web page, and Direct Loan Servicing System web page. The legacy technology will be adapted to provide this new service to SFA customers.

Name/type	Proposed use	Has technology been used at SFA before? Where?	Does Technology fit SFA's Architecture Standard? Explain.	Does SFA have the technical expertise to implement this technology? Why?
Loan Origination /Consolidation				
HP Servers – L class T600s	Web servers Database engines	Yes, LOS contract	Yes	Yes, expertise using technology in legacy system Operational
SSL 128 bit encryption, CheckPoint Firewall, RSA B-Safe Database at VDC protected at database level by CA-Unicenter tools	Security for Web Database security	Yes, LOS contract	Yes. Meets Standards	Yes, expertise using technology in legacy system Operational
Database applications Informix	Database structure	Yes, LOS contract	Yes. Meets Standards	Yes, expertise using technology in legacy system Operational
UML/Rational Rose suite of software products	Development tools for web analysis and design.	Yes, LOS contract	Yes. Meets Standards	Yes. SFA has internal expertise and contractor support. Operational
Direct Loan Servicing				
Oracle RDB	D/B to store eMPN Data	Yes. DLSS.	No. Legacy.	Yes. Already operational.
Compaq ALPHA	DLSS – existing hardware	Yes. DLSS.	No. Legacy.	Yes. Already operational.



Compaq COBOL ACMS DECforms	Development tools	Yes. DLSS.	No. Legacy.	Yes. Already operational.
Compaq OpenVMS	Access and data security – C3 cert.	Yes. DLSS.	No. Legacy.	Yes. Already operational.
Direct Loan Servicing Web Site:				
SQL Server 7	D/B	Yes. DLSS Web Site.	No. Legacy.	Yes. Already operational.
Compaq Proliant Windows NT	DL Servicing – existing hardware	Yes. DLSS Web Site.	No. Legacy.	Yes. Already operational.
M/S Visual Interdev ASP Active Server Pages HTML, XML, VB Com Objects TP Web Connector	Development Tools	Yes. DLSS Web Site.	No. Legacy.	Yes. Already operational.
SSL 128 bit encryption, CheckPoint Firewall, RSA B-Safe	Security software	Yes. DLSS Web Site.	No. Legacy.	Yes. Already operational.
CPS-Pin				
SQL Server 7	D/B	Yes. Web Site.	No. Legacy.	Yes. Already operational.
Compaq Proliant Windows NT	Web servers	Yes. Web site.	No Legacy.	Yes. Already operational.
SSL 128 bit encryption, CheckPoint Firewall, RSA B-Safe	Security software	Yes.	No. Legacy.	Yes. Already operational.



Benefits

Provide a narrative discussion to explain why SFA is doing the initiative and what project objectives or expected outcomes can be quantified and how can they be measured. Demonstrate that the initiative supports the goals and objectives of SFA, how it supports these goals and objectives, to what extent it helps SFA achieve these goals and objectives and when these benefits will be realized.

Reduce Unit Cost – To be determined in Phase II

Quantified Benefit (\$)	How will benefit be measured/realized?	When will benefit be realized?
<p>Reduced cost for the receipt of an electronic note versus a paper note in imaging cost.</p> <p>DLO and probably DLC can expect to realize reduced costs in promissory note vault storage, p-note printing costs, warehouse costs associated with paper p-notes, shipping costs associated with paper p-notes, postage and shipping associated with mailing paper notes to borrowers, envelope costs, etc.</p> <p>DLO-eliminate costs for promissory note research and retrieval for DLSS use.</p>	<p>Each e-MPN will result in a savings of the unit cost for imaging a paper p-note.</p>	<p>Immediately</p>
<p>Reduced costs for inputting eMPN reference data into existing DLSS.</p> <p>Easier access to eMPN reference data will reduce Skiptracing costs.</p>	<p>Negotiated savings can be realized for each eMPN that is needed.</p> <p>Reduced costs associated with acquiring an image for an eMPN.</p>	<p>Upon completion of negotiations and contract modification.</p> <p>Immediately</p>
<i>Assumptions</i>		
<p>DLO is using an estimate of 250,000 eMPNs for the first three months of operations. DLSS potential savings must be negotiated with the legacy operating partner.</p>		



Increase Customer Satisfaction

Quantified/Qualitative Benefit	How will benefit be measured/realized?	When will benefit be realized?
The option to e-sign Loan Consolidation applications will end one of the borrowers' principal complaints about using DLC's on-line web enabled application. (DLC)	Customer surveys	Immediately
Borrowers will be able to view and/or print a copy of their electronic promissory note at any time using the DLSS Web site. (DLSS)	The number of borrowers using this option can be tracked.	Immediately
The Direct Loan Servicing Web site will be modified to include a "Direct Loan Student Entry Point". This new page will provide a common look and feel for borrowers needing to access their eMPN. This page will link borrowers to various Direct Loan borrower-based sites, including the new eMPN site's URL.	Borrower satisfaction can be measured using existing online customer satisfaction survey tool on the DLSS Web site.	Immediately upon implementation.
Schools will not have to order, store, process and track paper notes. Also reduces the amount of errors when misplacing paper notes. (DLO)	Customer satisfaction surveys	Immediate savings upon implementation
Borrowers will be able to instantly approve their note and have it registered in the Loan Origination System. (DLO)	Customer satisfaction surveys	Immediate savings upon implementation



Increase Employee Satisfaction

Quantified/Qualitative Benefit	How will benefit be measured/realized?	When will benefit be realized?
Inherent ease of tracking electronic application submissions and the associated electronic promissory note simplifies management of the portfolio. (DLO-DLC)	Internal employee satisfaction surveys.	Immediately
Availability of web trending data provides insight into the consumer interest in Direct Consolidation Loans and the user size and frequency of activity against the on-line application and electronic signature process site.	Internal employee satisfaction surveys.	Immediately
Repayment staff enjoys the benefits of increased customer satisfaction and reduced cost. More efficient and timely skip tracing provided by automated capturing of references may help reduce delinquency rate, reduce defaults, and improve the standing of the Direct Loan Program. (DLSS)	Internal employee satisfaction surveys.	Immediately
Reduces the chance of errors from data entry of MPN IDs and SSNs, which will allow for a quicker loan reconciliation process. (DLO)	Internal employee satisfaction surveys.	Immediately
<i>Assumptions</i>		

Estimated overall dollar amount of all benefits listed above.

Quantified Benefits					
BY	BY+1	BY+2	BY+3	BY+4	Total
<u>\$50K</u>	<u>\$100K</u>	<u>\$125K</u>	<u>\$125K</u>	<u>\$125K</u>	<u>\$425K</u>
<i>Assumptions</i>					
DLO: 250,000 eMPNs in BY and 800,00 eMPNs each following year. # of EMPNs *x \$0.08845 each. On-going cost savings relative to imaging cannot be determined until MPN and eMPN process and costing under COD are established.					
DLSS: Assume successful negotiations with ACS. The first increment of savings, \$10K in BY, may be invested to provide skip-tracing CSRs with PC type terminals to access eMPN reference data. Actual savings cannot be determined until requirements are finalized and implementation costs are determined.					



PHASE I Costs

Provide costs, including those to implement the initiative and the costs to support it over its useful life. Useful life of Phase I is for approximate one calendar year.

E-SIGN:							
Cost Estimate by FY							
	BY-1	BY	BY+1	BY+2	BY+3	BY+4	
	FY00	FY01	FY02	FY03	FY04	FY05	TOTAL
E-SIGN:							
Development							
Direct Loan Origination *	500,000	500,000*					1,000,000
Direct Loan Consolidation *	1,000,000						1,000,000
Direct Loan Servicing *		500,000					500,000
Debt Collection Servicing							0
VDC **		457,000					457,000
CPS ***		1,000,000					1,000,000
Modernization Partner ****		278,000					413,000
Operations							
Direct Loan Origination							0
Direct Loan Consolidation *		100,000	200,000				300,000
Direct Loan Servicing							0
Debt Collection Servicing		100,000					100,000
VDC **		116,000	148,000				264,000
CPS							0
E-SIGN Phase I Total	1,500,000	3,051,000	348,000				4,899,000
Requested Funding		2,051,000	348,000				

Footnotes

Development

Funds currently obligated for this activity: \$500K DLO, \$500K DLSS, \$1,000K LC, \$150K Mod Partner

- * DLO can fund the \$500K from its development budget and therefore does not require additional FY 01 funding
- ** VDC costs are associated with CPS-Pin site expansion and include obtaining two new N class servers, or double CPUs on existing servers as required by potential FFELP volume increase as well as projected Fall 2001 FAFSA volume increase.
- *** CPS development cost is estimated at \$1,000K for requirements and development needed to revise PIN site.
- **** Modernization Partner cost breakdown is as follows:

- 1, ITA Integration/Coordination, (Management and Coordination with other Initiatives \$ 113,000
- 2, Threat Risk assessment and Security accreditation \$ 165,000
- TOTAL \$ 278,000**

Brief description of Mod Partner Activities:

1. Provides necessary services to coordinate/leverage work with other initiatives such as eServicing, COD, and ITA R2 Build-out
2. Provides for the build-out and testing of backend adaptors to DLOS/DLCS systems budgeted for with EAI Phase 2
3. Front-end adaptors and business rule development for setting up necessary queues within the bus
4. Design, build and testing of backend adaptor to eProm database ensuring single point of entry for the enterprise.



Operations

- * DLC costs associated with increased customer service demand to help borrowers with e-note process.
- ** VDC operations costs associated with CPS Pin-site monthly maintenance charges and an estimated 100,000 mailings of PINs to student applicants.

Total Cost of Ownership

What is the level of required enhancement after implementation?

Undetermined at this time. This will be a Phase II activity.

What is the life span of this initiative?

One Year to be followed by Phase II enhancements and addition of other systems and functions.

Alternatives

Discuss what could be done in place of this initiative and describe the consequences of each alternative.

Alternative	Consequence
Remain as-is	Fail to comply with the E-SIGN legislation. Face potential loss of market share as some schools may leave DL for FFELP lenders using e-notes.
Non-technology solution	Not applicable as this is a technology mandated application. No non-technology solution is plausible.
Enhance an existing system	Legacy systems are being leveraged with new technology application.
Implement on a smaller scale	We are approaching this initiative with a phased implementation plan in order to reduce the potential number of initial users.



Risks

Risk	Description of Risk	Mitigation Strategy
Financial	Litigation to invalidate loans due to potential improper development of the system and promissory note.	Involving OGC guidance in all aspects of system requirements development and being cautious when deciding record design and process.
Technology	<ul style="list-style-type: none"> - Improper storage of e-pnotes - Poorly designed re-call process to create paper version of e-pnote - Make sure only valid borrowers are signing their notes and only borrowers can alter their own data - Premature introduction of EAI bus during extremely brief implementation schedule could result in project failure. 	<p>Phased approach to implementation provides time to focus on the linkage, recall, and printing system requirements to ensure the as-needed availability of these records.</p> <p>Well developed and planned implementation strategy and process for the use of the EAI bus during Phase II of the project.</p>
Scope	Too many borrowers elect to use the e-note option and overwhelm the available system resources.	Target Phase I implementation date has been chosen partially to control the number of potential users.
Management	Significant risk to meeting July '01 start date if management does not approve BC and authorize funds during early February. Every day of delay in starting will result in fewer borrowers having the opportunity to use the new functionality and resultant loss in expected benefits.	Work closely with Senior Management to answer all questions satisfactorily and obtain on-schedule approval for the project.

Acquisition Strategy

Sources (Indicate the prospective sources of supplies or services that can meet the need of this project. List the most likely offerors for the requirement, and/or the manufacturer and model of the equipment that will most likely be offered).

Task Orders to legacy contractors during Phase I activities.

Competition (Describe how competition will be sought, promoted, and sustained throughout the course of the acquisition, including any performance requirements that will be required).

Legacy operating partners were obtained using competitive open procurements.



Contract Considerations (For each contract contemplated, discuss contract type selection; use of multiyear contracting, options, or other special contracting methods, ex: performance-based).

Task Orders to legacy operating partners are generally constructed in two phases. Phase One is a Time and Materials task to develop the requirements. Phase Two is a firm fixed price task to code, test and implement the requirements developed in Phase One.



Schedule/Milestones (including acquisition cycle)

#	Milestone	Start Date	End Date
DLC			
1	Phase I - Requirements gathering	2/5/01	2/28/01
2	ED/SFA Review of Requirements Gathering Summary, Q&A and EDS Respond back	3/1/01	3/16/01
3	Phase II - Detailed Design, ED/SFA Review and Acceptance	3/19/01	4/6/01
4	Construction- through- Unit Testing	4/9/01	5/11/01
5	Integration & Intersystem Testing (Internal)	5/14/01	6/8/01
6	ED/SFA IV&V and SAT Testing	6/11/01	6/22/01
7	Implementation	6/23/01	7/31/01
8	In production	8/1/01	
DLO			
1	Requirements Close	6/00	2/16/01
2	Development Completed	2/19/01	5/8/01
3	Beta Testing with School	5/11/01	5/18/01
4	System Acceptance Testing	5/21/01	6/8/01
5	Intersystem Testing	6/11/01	6/27/01
6	Production Readiness Review	6/28/01	6/28/01
7	Implementation	6/29/01	7/2/01

CPS			
1	Requirements Close	6/00	2/16/01
2	Development Completed	2/19/01	5/8/01
3	Beta Testing with School	5/11/01	5/18/01
4	System Acceptance Testing	5/21/01	6/8/01
5	Intersystem Testing	6/11/01	6/27/01
6	Production Readiness Review	6/28/01	6/28/01
7	Implementation	6/29/01	7/2/01



#	Milestone	Start Date	End Date
DLSS			
1	Requirements Close	6/00	2/16/01
2	Borrower "Common Entry Point" Prototype	2/01/01	02/28/01
3	Borrower Focus Group Testing	2/01/01	3/18/01
4	Development and Unit Testing	3/01/01	5/21/01
5	System Acceptance Testing	5/21/01	6/8/01
6	Intersystem Testing	6/11/01	6/27/01
7	Production Readiness Review	6/28/01	6/28/01
8	Implementation	6/29/01	7/2/01