



F E D E R A L
S T U D E N T A I D

We Help Put America Through School

FSA Modernization Partner

NSLDS II Reengineering
System Interface Detail Design:
Direct Loan Servicing System
Exit Counseling Request/Results Interfaces
I-DLSS-3

DRAFT

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Table of Contents

1	DIRECT LOAN SERVICING SYSTEM (DLSS)	3
1.1	SYSTEM SPECIFICS.....	3
1.1.1	NSLDS II.....	3
1.1.2	DLSS.....	4
1.2	EXIT COUNSELING	4
1.2.1	Interface Control Specifications.....	4
1.2.2	Interface Flow.....	5
1.2.3	Interface Flow Description.....	6
1.2.4	Source System Functional Specifications.....	6
1.2.5	Destination System Functional Specifications.....	6
1.2.6	Interface Assumptions.....	6
1.2.7	File Layout.....	7
1.3	DL EXIT COUNSELING RESULTS FILE.....	8
1.3.1	Interface Control Specifications.....	8
1.3.2	Interface Flow.....	9
1.3.3	Interface Flow Description.....	9
1.3.4	Source System Functional Specifications.....	9
1.3.5	Destination System Functional Specifications.....	10
1.3.6	Interface Assumptions.....	10
1.3.7	File Layout.....	11
APPENDIX A.....		17
APPENDIX B.....		18

Document Control

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1 Direct Loan Servicing System (DLSS)

DLSS will send detailed loan information for participants in FSA’s Direct Loan program to NSLDS II daily. Data sent to NSLDS II from DLSS includes loan status and activity information on the over 20 million loans administered as part of the Direct Loan program. The daily file includes only loans that have registered a change or modification since the last file was sent to NSLDS II.

NSLDS II will send student enrollment status information daily to DLSS for participants in the Direct Loan program. NSLDS II will receive student enrollment updates directly from the school or its servicer and will generate a daily file of enrollment updates for Direct Loan recipients.

Direct Loans will also send requests to NSLDS II for loan data (FFEL) to support its DL Exit Counseling program. NSLDS II will process requests and send the results back to Direct Loans. Borrowers visiting the Direct Loan Servicing (DLS) Website are able to view information about their non-Direct student loans through the Exit Counseling portion of the Direct Loan Website. The DLS Web Site retrieves this information from NSLDS II.

The NSLDS II and DLS Web Sites are required to use the Department of Education’s PIN vendor for verifying borrower authenticity prior to allowing borrowers access to secure areas of either site. This process involves routing the borrower to the PIN registration site, which prompts the borrower to enter their SSN, Date-of-Birth, first two characters of their last name, and PIN number. This information then is validated against the PIN registration database. Once the data has been successfully validated, the PIN registration site forwards an encrypted string to the originating system. When the originating system receives the encrypted string from the PIN registration site, it decrypts it, validates the data against it's own database, and then retrieves and displays the borrower’s data.

The DLSS interfaces include:

- DLSS Loan Data (**See Document I-DLSS-1**)
- DLSS Loan Data Error File (**See Document I-DLSS-1**)
- Threshold, Error Code, and Field Code (TEF) File (Loan Data) (**See Document I-DLSS-1**)
- DLSS Enrollment Update File (**See Document I-DLSS-2**)
- DLSS Exit Counseling Request (**Section 1.2**)
- DLSS Exit Counseling (**Section 1.3**)

1.1 System Specifics

1.1.1 NSLDS II

Item	Description
Production Platform (Vendor/Product Name/Version)	IBM/ Cluster 1600 Server/ 4 p-Series 660 Model 6M1 4 FastT500 Arrays
Operating	Unix/AIX/V 5.1

System <i>(Vendor/Product Name/Version)</i>	Parallel Systems Support Program (PSSP)
DBMS <i>(Vendor/Product Name/Version)</i>	IBM/DB2 Universal Database (UDB)/Enterprise Extended v. 7.2
Transmission Protocol	TCP/IP
Production System IP Address	TBD
Production System Location	Meriden, CT
Contracting Organization	Accenture – Modernization Partner
Developer Location	Modernization Partner Offices – Washington DC

1.1.2 DLSS

Item	Description
Production Platform <i>(Vendor/Product Name/Version)</i>	Digital / DEC Alpha
Operating System <i>(Vendor/Product Name/Version)</i>	Unix
DBMS <i>(Vendor/Product Name/Version)</i>	Oracle
Transmission Protocol	TCP/IP
Production System IP Address	TBD
Production System Location	Rockville, MD
Contracting Organization	ACS
Developer Location	Rockville, MD

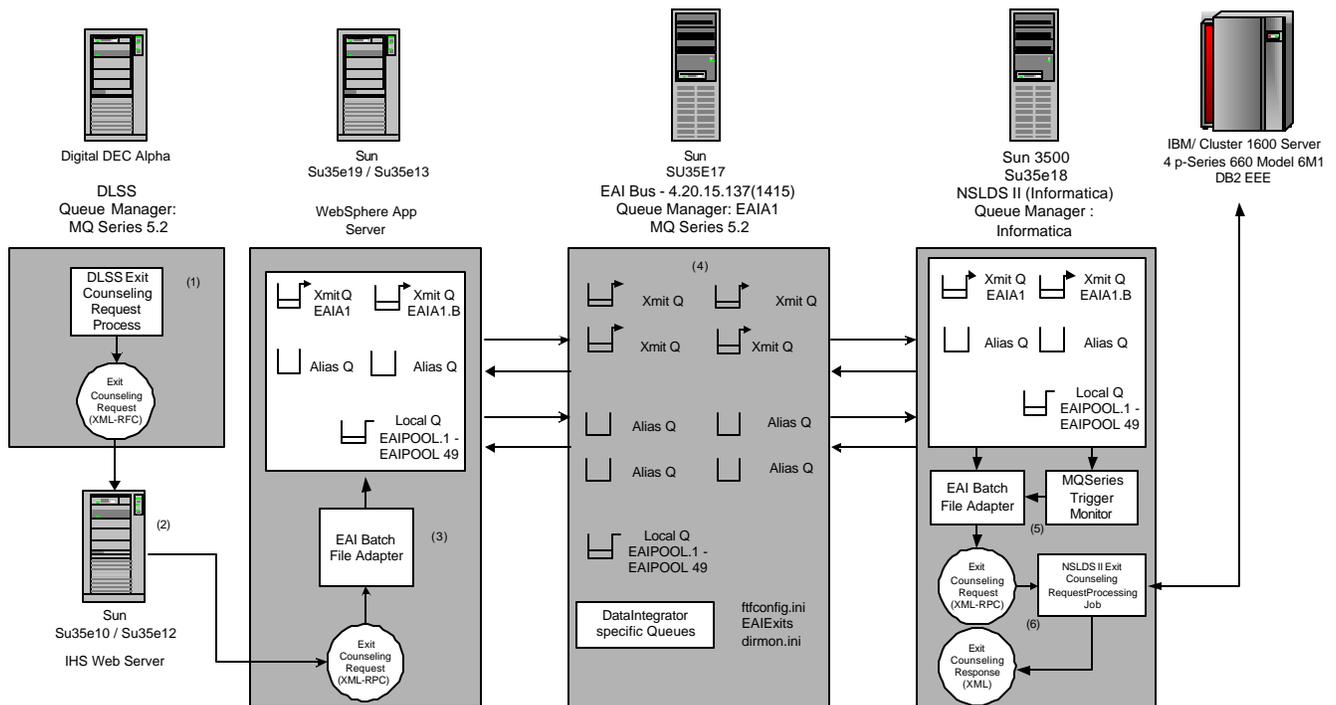
1.2 Exit Counseling

1.2.1 Interface Control Specifications

Interface Name:	Exit Counseling Interface
Interface Type/Direction:	Unidirectional, Batch Type
Interface Short Description:	<p>This document defines the processes utilized by the Direct Loan Website and NSLDS II to transport Exit Counseling Request data via the EAI BUS.</p> <p>This interface supports the DL Servicer's Exit Counseling program. The DL Website will send an XML-RPC request to NSLDS II for loan data for a specific DL borrower or group of borrowers. NSLDS II will process the request and send a file in XML format to the DL Website. Both interfaces will continue to use the EAI BUS for file transmission.</p>

	<p>This interface will utilize the ITA/WAS (WebSphere Application Server) and EAI BUS. Legacy components will be converted to Java Proxy components, and will be executed on the WAS server. A Java servlet will accept the request from the DL Website, and send the request to the EAI BUS. NSLDS II will receive and process the request, and send the data back through the EAI BUS to the WAS server. The Java servlet will send the data back to the DL Website as an XML file via an HTTP response.</p> <p>This interface occurs on demand, as data for specific students is requested.</p>
Requesting Application: or Source Application:	DLSS is the source of the Exit Counseling Request file
Responding Application: or Destination Application:	NSLDS II receives the Exit Counseling Request file and responds with the Results file
Detailed Technical Requirement References:	5.072
Interface Usage Frequency:	On-Demand
Interface Usage Volume:	50 Request a Day Peak
Output Media:	XML-RPC
Transmission Mechanism:	EAI BUS

1.2.2 Interface Flow



1.2.3 Interface Flow Description

1. The Direct Loan website server creates the request file and transfers it to The ITA – IHS server
2. The ITA – IHS server will process and transfer the request file to an ITA Websphere App Server
3. The EAI Batch File Adapter will move the file to the EAI BUS
3. The EAI BUS will route the file from the WAS server to the NSLDS II server
4. The EAI Batch File Adapter will move the file to NSLDS II
5. The NSLDS II (Informatica) Exit Counseling Request processing job will process the Exit Counseling Request and create an Exit Counseling Response

Invocation of EAI Batch File (receive) adapter may invoke the NSLDS II Exit Counseling Request Processing Job.

1.2.4 Source System Functional Specifications

#	Responsibility
1	DLSS will create the Exit Counseling Request in the form of an XML-RPC as outlined in section 1.2.7
2	An EAI batch file adapter will be supplied to initiate the file transfer from the DL Website to NSLDS II
3	DLSS will provide the EAI adaptor file transfer utility with the following input parameters: Input File Name -TBD

1.2.5 Destination System Functional Specifications

#	Responsibility
1	The EAI BUS will deliver the Exit Counseling Request to the NSLDS II server
2	The EAI Adaptor takes the following information as input: Queue manager name - TBD Queue name - TBD Sync point counter - TBD Output file name - TBD
3	The MQSeries Trigger Monitor may trigger the NSLDS II Exit Counseling Request processing job

1.2.6 Interface Assumptions

#	Assumption
1	MQSeries Queue Manager is installed / configured for the NSLDS II / DLSS environment
2	The EAI architecture will be configured to support the transfer of data from DLSS to NSLDS II

1.2.7 File Layout

The Exit Counseling Request will be laid out as an XML-RPC file in a HTTP POST operation. As a valid XML-RPC file the request will contain a header consisting of:

- http 'POST' command
- valid 'User-Agent'
- valid 'Host'
- 'Content-Type'
- correct value for the 'Content-Length'

As a valid XML-RPC file the request will contain an XML payload consisting of...

- <xml> tag containing a <methodCall> tag
- <methodCall> tag containing a <methodName> tag and a <params> tag
- <methodName> tag containing a valid function
- <params> tag containing 3 <param> tags
- <param> tags each containing a <string> tag containing one of the three parameters

The parameters contained in the <param> tags will consist of the following values which map to the NSLDS II STUDENTS table:

- The SSN of the student
- The Date of Birth of the student
- The First 2 characters of the last name of the student

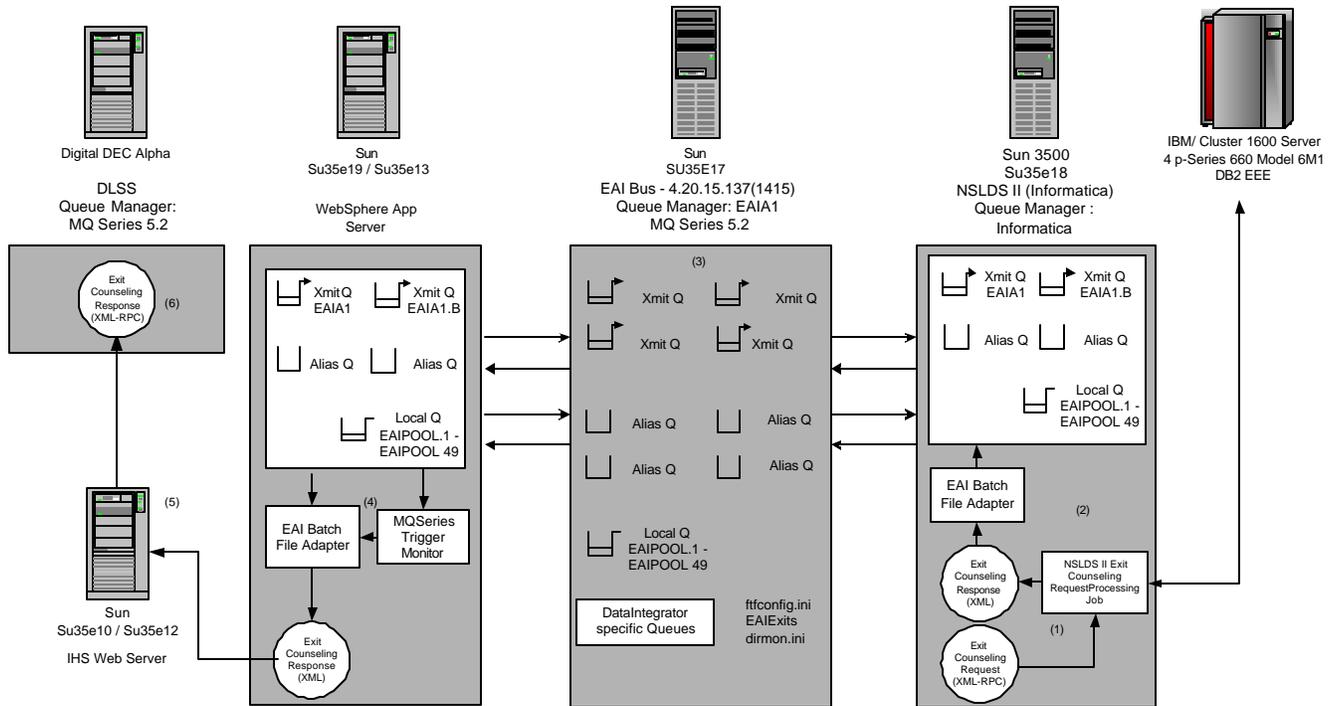
Refer to Appendix A for an example of an XML-RFC layout

1.3 DL Exit Counseling Results File

1.3.1 Interface Control Specifications

Interface Name:	Exit Counseling Interface
Interface Type/Direction:	Unidirectional, Batch Type
Interface Short Description:	<p>This document defines the processes utilized by the Direct Loan Website and NSLDS II to transport Exit Counseling Response data via the EAI BUS.</p> <p>This interface supports the DL Servicer's Exit Counseling program. The DL Website will send a XML-RPC request to NSLDS II for loan data for a specific DL borrower or group of borrowers. NSLDS II will process the request and send a file in XML format to the DL Website. Both interfaces will continue to use the EAI BUS for file transmission.</p> <p>This interface will utilize the ITA/WAS (Websphere Application Server) and EAI BUS. Legacy components will be converted to Java Proxy components, and will be executed on the WAS server. A Java servlet will accept the request from the DL Website, and send the request to the EAI BUS. NSLDS II will receive and process the request, and send the data back through the EAI BUS to the WAS server. The Java servlet will send the data back to the DL Website as an XML file via an HTTP response.</p> <p>This interface occurs on demand, as data for specific students is requested.</p>
Requesting Application: or Source Application:	NSLDS II is the source of the Exit Counseling Response file
Responding Application: or Destination Application:	DLSS receives the Exit Counseling Response file.
Detailed Technical Requirement References:	5.073
Interface Usage Frequency:	On-Demand
Interface Usage Volume:	50 Daily Request Peak
Output Media:	XML format
Transmission Mechanism:	EAI BUS

1.3.2 Interface Flow



1.3.3 Interface Flow Description

1. The NSLDS II system will process the Exit Counseling Request file and create the Exit Counseling Response file.
2. The EAI Batch File Adapter will move the file to the EAI BUS
3. The EAI BUS will route the file to the ITA Websphere App Server
4. The EAI Batch File Adapter will move the file to the WAS server
5. The ITA - IHS server will process the response file as needed
6. The ITA - IHS server will transfer the Exit Counseling Response File to the Direct Loan web server

1.3.4 Source System Functional Specifications

#	Responsibility
1	NSLDS II will process the Exit Counseling Request and save the Exit Counseling Response as an XML file
2	The data extracted will be laid out as in section 1.3.7 Each record will consist of: An "XML" block, containing one or more "NSLDS" blocks

	An "NSLDS" block will contain student information and one or more "LOAN" blocks. A "LOAN" block will contain loan information and a "CONTACT" block
3	An EAI batch file adapter will be supplied to initiate the file transfer from NSLDS II to DLSS
4	NSLDS II will provide the EAI adaptor file transfer utility with the following input parameters: Input File Name - TBD

1.3.5 Destination System Functional Specifications

#	Responsibility
1	The EAI BUS will deliver the Response file to the DLSS server
2	The EAI Adaptor takes the following information as input: Queue manager name - TBD Queue name - TBD Sync point counter - TBD Output file name - TBD

1.3.6 Interface Assumptions

#	Assumption
1	MQSeries Queue Manager is installed / configured for the NSLDS II / DLSS environment
2	The EAI architecture will be configured to support the transfer of data from NSLDS II to DLSS

1.3.7 File Layout

The Exit Counseling Response will be laid out as an XML file. As a valid XML file the response will contain:

- <xml> tag containing a <nslds> tag
- <nslds> tag containing NSLDS data and one or more <loan> tags
- <loan> tag containing loan data and a <contact> tag
- <content> tag containing contact data

Refer to Appendix B for an example of an XML Exit Counseling Response file.

Record Layout

Data Element	Element Type	Type	Description	Edits	Mapping
<XML>	XML block closing tag	XML tag	XML tag	NA	NA
<NSLDS>	NSLDS block closing tag	XML tag	XML tag	NA	NA
SSN	NSLDS block member element	Text	SSN of student requesting exit counseling.	NA	STUDENT / CURRENT_SSN
DOB	NSLDS block member element	Text	DOB of student requesting exit counseling.	NA	STUDENT / BIRTH_DATE

Data Element	Element Type	Type	Description	Edits	Mapping
LASTNAME	NSLDS block member element	Text	Last name of student requesting exit counseling.	NA	STUDENT / CURRENT_LAST
STATUSFLAG	NSLDS block member element	Text	Status flag of student requesting exit counseling. Dynamically generated. 'O' - (Other loans) Borrower is validated on NSLDS II and has FFEL, Perkins and/or DCS loans. 'D' - (Direct Loans only) Borrower is validated on NSLDS II but only has Direct Loans. 'N' - (No match found) Borrower is not validated on NSLDS II. 'S' - System error.	NA	NA
<LOAN>	NSLDS block member element	XML tag	XML tag	NA	N/A

Data Element	Element Type	Type	Description	Edits	Mapping
LOANID	LOAN block member element	Text	Loan ID of a loan for the student requesting exit counseling Null	NA	LOAN/LOAN_ID
LOANYEAR	LOAN block member element	Text	Loan year of a loan for the student requesting exit counseling	NA	LOAN/LOAN_DATE
AMTDISBURSED	LOAN block member element	Text	Amount disbursed of a loan for the student requesting exit counseling	NA	LOAN / D_TOTAL_DISBURSEMENT_AMOUNT
PRINCIPAL	LOAN block member element	Text	Principal of a loan for the student requesting exit counseling	NA	LOAN / OUTSTANDING_PRINCIPAL_BALANCE
INTEREST	LOAN block member element	Text	Interest of a loan for the student requesting exit counseling	NA	LOAN / INTEREST_RATE
INTASOFDT	LOAN block member element	Text	The interest as of date value of a loan for the student requesting exit counseling	NA	LOAN / OUTSTANDING_INTEREST_BALANCE

Data Element	Element Type	Type	Description	Edits	Mapping
<CONTACTS>	CONTACTS block open tag LOAN block member element	XML tag	XML tag	NA	NA
FIRSTNAME	CONTACTS block member element	Text	The first name of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATIO N_CONTACT / FIRST_NAME
LASTNAME	CONTACTS block member element	Text	The last name of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATIO N_CONTACT / LAST_NAME
ORGNOME	CONTACTS block member element	Text	The organization name of a contact for a loan for the student requesting exit counseling	NA	AA_NSLDS_A TTRIBUTES / ORG_NAME
ADDRESSLINE1	CONTACTS block member element	Text	The first line of the address of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATI ON_CONTACT / STREET_ADDR ESS_LINE_1
ADDRESSLINE2	CONTACTS block member element	Text	The second line of an address of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATI ON_CONTACT / STREET_ADDR ESS_LINE_2

Data Element	Element Type	Type	Description	Edits	Mapping
CITY	CONTACTS block member element	Text	The city of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATION_CONTACT / CITY
STATE	CONTACTS block member element	Text	The state of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATION_CONTACT / STATE
ZIP	CONTACTS block member element	Text	The zip of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATION_CONTACT / ZIP_CODE
PHONE	CONTACTS block member element	Text	The phone number of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATION_CONTACT / PHONE_NUMBER
PHONEEXT	CONTACTS block member element	Text	The Phone extension of a contact for a loan for the student requesting exit counseling	NA	ORGANIZATION_CONTACT / PHONE_EXTENSION
</CONTACT>	CONTACTS block close tag LOAN block member element	XML tag	XML tag	NA	NA

Data Element	Element Type	Type	Description	Edits	Mapping
CONTACTCD	LOAN block member element	Text	The contact code of a loan for the student requesting exit counseling Dynamically generated. "S" indicates a School "V" indicates a Servicer "L" indicates a Lender "G" indicates a GA	NA	NA
SCHOOLCODE	LOAN block member element	Text	The school code of a loan for the student requesting exit counseling	NA	SCHOOL/OPEID
INTERESTRATE	LOAN block member element	Text	The interest rate of a loan for the student requesting exit counseling	NA	LOAN / INTEREST_RATE
</LOAN>	LOAN block closing tag	XML tag	XML tag	NA	NA
</NSLDS>	NSLDS block closing tag	XML tag	XML tag	NA	NA
</XML>	XML block closing tag	XML tag	XML tag	NA	NA

2 Appendix A

Sample Exit Counseling Request File Layout in XML-RPC format:

Note: Bracketed segments [] should be replaced with system and process specific values.

POST HTTP/1.0

User-Agent: [NSLDS II User Agent]

Host: [Host name]

Content-Type: text/xml

Content-length: [length of message]

```
<?xml version="1.0"?>
<methodCall>
  <methodName>[name of method to be called]</methodName>
  <params>
    <param>
      <value><string>[Students SSN]</string></value>
    </param>
    <param>
      <value><string>[Students DOB]</string></value>
    </param>
    <param>
      <value><string>[Students first 2 characters of last name]</string></value>
    </param>
  </params>
</methodCall>
```

3 Appendix B

Sample Exit Counseling Response file in XML Format:

```
<xml >
  <NSLDS >
    <SSN>999111999 </SSN >
    <DOB>07-26-1965 </DOB >
    <LASTNAME >DO </LASTNAME >
    <STATUSFLAG>O </STATUSFLAG >
    <LOAN >
      <LOANID / >
      <LOANTYPE >NATIONAL DEFENSE LOAN </LOANTYPE >
      <LOANYEAR >02/07/1998 </LOANYEAR >
      <AMTDISBURSED >1,201.00 </AMTDISBURSED >
      <PRINCIPAL >309.00 </PRINCIPAL >
      <PBASOFDT >10/25/1998 </PBASOFDT >
      <INTEREST >0.00 </INTEREST >
      <INTASOFDT / >
      <CONTACT >
        <FIRSTNAME >STUDENT </FIRSTNAME >
        <LASTNAME >JONES </LASTNAME >
        <ORGNAME >UNIVERSITY OF CALIFORNIA - SANTA
          CRUZ </ORGNAME >
        <ADDRESSLINE1 >20 OAK STREET </ADDRESSLINE1 >
        <ADDRESSLINE2 / >
        <CITY >SANTA CRUZ </CITY >
        <STATE >CA </STATE >
        <ZIP >950646660 </ZIP >
        <PHONE >555-111-2222 </PHONE >
        <PHONEEXT >12345 </PHONEEXT >
      </CONTACT >
      <CONTACTCD >S </CONTACTCD >
      <SCHOOLCODE >00132100 UNIVERSITY OF CALIFORNIA - SANTA
        CRUZ </SCHOOLCODE >
      <INTERESTRATE >5.0 </INTERESTRATE >
    </LOAN >
    <LOAN >
      <LOANID / >
      <LOANTYPE >NATIONAL DEFENSE LOAN </LOANTYPE >
      <LOANYEAR >02/07/1992 </LOANYEAR >
      <AMTDISBURSED >1,200.00 </AMTDISBURSED >
      <PRINCIPAL >308.00 </PRINCIPAL >
      <PBASOFDT >10/21/1998 </PBASOFDT >
      <INTEREST >0.00 </INTEREST >
      <INTASOFDT / >
```

```
<CONTACT >
  <FIRSTNAME >STUDENT </FIRSTNAME >
  <LASTNAME >JONES </LASTNAME >
  <ORGNOME >UNIVERSITY OF CALIFORNIA - SANTA
    CRUZ </ORGNOME >
  <ADDRESSLINE1 >20 OAK STREET </ADDRESSLINE1 >
  <ADDRESSLINE2 / >
  <CITY >SANTA CRUZ </CITY >
  <STATE >CA </STATE >
  <ZIP >950646660 </ZIP >
  <PHONE >555-111-2222 </PHONE >
  <PHONEEXT >12345 </PHONEEXT >
</CONTACT >
<CONTACTCD >S </CONTACTCD >
<SCHOOLCODE >00132100 UNIVERSITY OF CALIFORNIA - SANTA
  CRUZ </SCHOOLCODE >
<INTERESTRATE >5.0 </INTERESTRATE >
</LOAN >
</NSLDS >
</xml >
```