

ATTACHMENT "A"

State Longitudinal Education Data Warehouse (SLED)

Request for Information

Dear Information Technology Vendor:

Subject: Request for Information (RFI)

1. Introduction

The District of Columbia Office of the State Superintendent State Longitudinal Data Warehouse Program (SLED)

2. Introduction

The Office of Contracting and Procurement (OCP), on behalf of the Office of the State Superintendent of Education, (OSSE) is contemplating issuing a solicitation to procure, customize and implement a statewide longitudinal education data warehouse and associated systems referred to as the State Longitudinal Education Data Warehouse program. Before the actual issuance of a solicitation, OCP requests information from you in order to finalize the Government's technical requirements. In addition, responses received from you will assist in determining what procurement vehicle will be best suitable for the future solicitation. Specifically OCP, on behalf of OCTO, is seeking:

- Identification of successfully implemented like-kind systems in jurisdictions and organizations with similarly complex structural and information environments.
- Recommendations regarding Best Practices for the SLED program implementation, including information architecture, analytic information design for reporting, data analysis, as well as business practice.
- Assistance with the design and implementation of an effective, scalable SLED program.
- Guidance on the potential scope and duration of the Implementation Phase.
- Timeline (Gantt chart format) for a turn-key project broken down into critical path phases.
- Information on Estimated cost of turn-key solutions, including design, all project costs, delivery, implementation, training, maintenance and support.
- Recommendations regarding the processes and procedures for integrating additional data into the SLED as requirements change and additional data becomes available.
- Estimates of the degree of effort in incorporating additional data.

The SLED is to be an integrated solution to solve several enterprise level challenges facing educational reform in the District.

OSSE sees this program not merely as a technology project, but also as a culture change project. In order to provide an excellent education for students in the District of Columbia, we know that we must dramatically improve the way we set priorities, make decisions, interact with our stakeholders, and evaluate our performance. OSSE recognizes that the technology aspects of this program will be much less complex than the human development and change management responsibilities this program will require of District leadership. Therefore, information on the best means of dealing with change management issues in such a project will be just as important as information on technology best practices.

The SLED will become the main repository of current and historical education data relating to students and teachers in publicly funded schools in the District of Columbia. It is intended to be used to answer a wide range of questions, starting from arranging the best program for an individual student, up to finding what practices yield the best results for educating all students citywide. It will also enable the educational staffs at both the LEA and SEA level to complete the large number of reports required by both the Federal and District governments in less time.

The SLED system warehouse will be populated with information extracted from a wide variety of information systems distributed around the district. It will standardize student academic information currently stored in various local education agencies (LEAs) and enable users to track longitudinally student information over multiple years and across every DC public education institution.

OSSE seeks to enable the sharing of critical information spanning a student's lifelong public education experience in DC, from early childhood through grades K to 12, college and other post-secondary education, and into adult education and initial years of employment. This

information should assist in meeting educational needs through better planning, trend analysis, performance projections, program evaluation, and stakeholder empowerment.

The reporting tools for the data warehouse should be designed to provide user-friendly database queries that produce standard and customized reports for various stakeholders. Among other purposes, stakeholders should be able to use the data warehouse to identify which LEAs and schools are meeting AYP, which schools and classrooms are closing the achievement gap, analyze the value of various education programs, determine which schools work best for particular types of students and identify teacher and other educational best practices that are improving student achievement.

The SLED program is divided into eight separate but related subprojects, each of which is outlined in Section 1.5. OSSE is seeking information only on solutions that may be integrated with each other for this program. The information received from respondents will be considered to be in the public domain so that it can be used in an RFP that will be disseminated in the future. After reviewing the information received from this RFI, OSSE anticipates issuing a Request for Proposal (RFP) to initiate a formal competitive bid process to interested vendors.

2.1 Problem Statement

Below are listed the key problems that drive the establishment of the SLED program. In Section 5, several requirements relating to other less critical problems are also listed as tasks to be undertaken.

1. There is no single automated system in place to ensure that every P – 12 student who enrolls in an Local Education Agency (LEA) has a single unique identification number that remains consistent throughout the student's academic experience in the District of Columbia, irrespective of migration in and out of the state or between LEAs within the state.
2. There is no single system that tracks the movement and attributes of students within the state, as well as their progress from early childhood through adult and postsecondary education.
3. There is no single system that tracks the movement and attributes of teachers within the state.
4. There is no single automated system that **combines** education data at the state level to assess student, teacher, school and program performance; produce required state and federal reports; and provide access to timely, accurate and consistent data on public education in the District of Columbia.
5. There is no single automated system that unifies special education data at the state level to implement its General Supervision Responsibilities and to provide a unified IEP format to all LEAs in the District of Columbia.
6. There is no single automated system for the state to use to collect required LEA level reporting information for Enrollment, special education, federal grants, and NCLB data.

2.2 Program Vision

The Statewide Longitudinal Education Data Warehouse Program will enable a new culture that empowers educators, administrators, parents, researchers, policy makers, and private organizations by providing the data to make informed decisions that maximize student learning and achievement in their interaction with public school students in the District of Columbia.

2.3 Program Mission

Create a state longitudinal education data warehouse system that will constitute a unified data repository for all District of Columbia public education data systems that will support improved instruction, planning, management and evaluation.

2.4 Program Goals

The goals of the state longitudinal education data warehouse program are:

1. Provide education data that will allow stakeholders at the state level and outside the state to make data-driven decisions to design programs and policies, improve student achievement, and meet student needs.
2. Allow for trend analyses of enrollment and other demographics for LEAs schools, programs and classes.
3. Assess which programs and curricula are improving student learning.
4. Assess what attributes of teachers contribute to student achievement.
5. Reduce data entry efforts across multiple diverse systems.
6. Improve data quality by implementing quality control measures that ensure data integrity, consistency and accuracy.

2.5 Program Description

The data warehouse program is divided into the following projects:

1. **Unique Student Identifier (USI)** - Establish an automated process to assign and maintain a Unique Student Identifier (USI). An accurate USI system will correctly identify each learner and match student level data from multiple systems.
2. **Direct-Certification for the USDA Free and Reduced Meal Program** - The system will allow for the automatic collection of individual level data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA) and then match the student data to determine if the IMA data certifies those students as “categorically eligible” for free school meals based on their FSP/TANF eligibility.
3. **Student Tracking System (STS)** - Develop a Student Tracking System (STS) by integrating student Information Systems (SIS) to allow for timely determination of student attendance, enrollment and demographics.
4. **Teacher Tracking System (TTS)** - Develop a Teacher Tracking System by integrating teacher associated data. This system should also manage unique identifiers for teachers as they move through the education system in the District of Columbia.
5. **Statewide Longitudinal Education Data Warehouse** - Gather, cleanse, analyze, model and integrate diverse data that are determined to be relevant to the educational process. This system should include a user friendly set of reporting tools for basic users as well as ad hoc reporting and querying tools for power users.

6. **State Special Education Management System** - Unify special education data at the state level to implement its General Supervision Responsibilities and to provide a unified IEP format to all LEAs in the District of Columbia.
7. **Integration**- OSSE will be seeking a solution that can integrate the previous 6 program components
8. **Project Implementation and Change Management Services**- OSSE anticipates that this project will require content matter experts in education policy, system implementation, training, and change management.

2.6 Acronyms

The following acronyms are used throughout this document:

Acronym	Name	Definition
DC CAS	DC Comprehensive Assessment Test	Annual Test with scores reported USED for NCLB and AYP Compliance
DCPCS	District of Columbia Public Charter School	N/A
DCPCSB	District of Columbia Public Charter School Board	N/A
DCPS	District of Columbia Public Schools	N/A
DME	Deputy Mayor for Education	N/A
EDEN	Education Data Exchange Network	N/A
FERPA	Federal Educational Rights and Privacy Act	Imposes limits on disclosure of student records by educational agencies and institutions. States must ensure data is being collected, shared and used in ways that comply with this federal law.
HSMP	Health Services Management Program	Allows for information sharing and cross-querying between data systems located at different health related city agencies.
IEP	Individualized Education Program	
LEA	Local Education Agency	This is the DC Public Schools and the DC Public Charter Schools
NCLB	No Child Left Behind	Federal Law requiring accountability for student/LEA

		progress and HQT (Highly Qualified Teachers)
OCTO	Office of the Chief Technology Officer	Provides technology expertise and guidance
OST	Out-of-School Time	
OSSE	Office of the State Superintendent of Education	District of Columbia's state education entity
SEA	State Education Agency	The OSSE has SEA responsibilities for federal grants and programs
STS	Student Tracking System	System used to track student data and mobility
SSES	State Special Education System	Special Education System to be used by all LEA's; it will allow the State to track special education services provided to students, monitor student progress and product appropriate reports
UDC	University of the District of Columbia	N/A
US	United States of America	N/A
USI	Unique Student Identifier	Each student should have one (1) identifier.
USED	U.S. Department of Education	N/A

3. Education Environment

3.1 Mayor Education Initiative

On July 12, 2007, Mayor Adrian A. Fenty proposed, and the Council of the District of Columbia passed, the Public Education Reform Amendment Act of 2007 granting the Mayor governance over the District of Columbia public school system. The State Education Office (SEO) became the Office of the State Superintendent of Education (OSSE). The new legislation assigns the OSSE operational authority for State Education Agency responsibilities..

3.2 DC Public School System and Public Charter School

As part of the Public Education Reform Amendment Act of 2007, the Public Charter School Board became the sole authorizing authority for Public Charter Schools in the District of Columbia.

3.3 Current SLED Program Governance

In the interest of sustaining participation and ownership by as broad a coalition possible in the District of Columbia, OSSE has chartered several stakeholder and work groups to develop this project.

Executive Stakeholders- The Executive Stakeholders are principal leaders of children, youth and adult serving agencies in the District of Columbia responsible for the collection, management, support and reporting of client and institutional-level data. It consists of the Mayor, the Deputy Mayor for Education, the State Superintendent for Education, the Chancellor of the DC Public School System, the Chair of the Public Charter School Board, and the Chair of the University of the District of Columbia.

Steering Committee- The Steering Committee is comprised of a multi-sector group of organizations, including representatives of the Executive Stakeholder agencies and representatives of major education data producers and users of student, school, local education agency, and postsecondary institution data.

Core Project Team- The Core Project Team is composed of members that are dedicated to the project's success by carrying out the daily functions of the project.

Change Control Board (not yet in operation)- Information Technology systems are never static. The data warehouse will need to be enhanced as federal and state laws change, education programs are enhanced and education systems improve. The sole purpose of the Change Control Board is to stay close to the needs of the end users and update the data warehouse program team on changes that need to be incorporated over time.

3.4 Technical Environment

The following are some of the presently known systems that may have an impact on development decisions for transporting data to the data warehouse. As requirements gathering efforts evolve, this list may grow.

System	Definition	Operating System	Database	Owner
ENCORE	Special Education system	1. One Windows 2000- to be upgraded to Windows 2003 2. One Windows Server 2003 Enterprise Edition	Sql 05	OCTO
DCSTARS	Student Tracking System	Currently Windows, may migrate to Linux in the next couple of months.	Oracle 10g	OCTO
WINSNAPP	Food and Nutrition System	Windows	Sql	DCPS Food and Nutrition Services
OLAMS	DC Public Charter School Board sponsored Student Tracking System			PCSB

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PowerSchools	Student Information System			Some PCS's (see table of SIS use by LEA in the appendix)
Project Webstars	Out-of-School Time (OST) system for almost 200 grantees. Specific focus on middle school grades.	Web-based. Developed by Cityspan.		DC Children and Youth Investment Trust Corporation
Blackbaud	Student Information System			Some PCS's (see table of SIS use by LEA in the appendix)
MEAD	Education Audit Data System		Sql03	OSSE
OneApp	Grant Programs for Students Attending Colleges and Universities	Windows, .Net application	Sql03	OSSE
Early Childhood Education Admin. (ECEA) Db #1	Contains ECEA daycare information	Windows	Access	DHS
Early Childhood Education Admin. (ECEA) Db #2	Contains transition information when the children move from daycare to Pre-school (4 years old).	Windows	Access	DHS
Educator License Information System (ELIS)	Teacher Certification and Licensing		Access	OSSE- OELA
Candidate Performance Assessment System (CPAS)	Contains various data (college grades, assessment scores/data, course taken, GPA, etc.) of those persons who are aspiring to be teachers (referred to as candidates).	Windows	Domino	OSSE-OELA

4. Business Processes

The following business processes and/or systems can be modified or automated in the respondent's information for this program:

- Assignment of Unique Student Identifiers
- Certification and Verification of Free Lunch Eligibility
- Assignment of Unique Teacher Identifiers
- Data Cleansing
- DCSTARS
- ENCORE
- Federal, State and School Reporting
- MEAD
- Student Data Entry
- Special Education Business Processes
- Special Education Determinations
- Special Education Hearings
- Student Enrollment Registration
- Student Transfers
- WINSNAPP

5. Scope

5.1 In-Scope and Out-of-Scope Analysis

OSSE is very aware that the systems envisioned under the SLED program represent a massive undertaking from a project management, integration, and (most importantly) culture change perspective. In an effort to clarify the aspects of this program that OSSE sees in and out of scope, the SLED program Steering Committee created the following table.

In-Scope	Out-of-Scope
DCPS Student Data	Health Information
DCPS Teacher Data	Children Court Records
DC Charter Schools Student Data	DC Private Schools with exception of

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	Non-Public Private Placement students
DC Charter Schools Teacher Data	DC Independent and Parochial Schools
Integrating Education Related Systems to Transport Data to the data warehouse	Non-DC Public and Private Schools with exception of Non-Public Private Placement students
Define Business Process Changes that Impact Systems that Integrate with data warehouse (implementing projects to resolve these changes will need to be determined by the Steering Committee)	Non-Education Related Systems
Investigate the Usefulness of Current Educational Systems	Business Process Changes that do not Impact Systems that Integrate with the data warehouse
Role-Based System Access for Stakeholders	Ability to link to college majors or postsecondary training programs, except for CTE
Data from Pre-Kindergarten through college	Financial data
Transferring Data to and from UDC	Student record matching with Department of Labor employment data
Electronic high school transcripts	
Link to postsecondary institutions through OneApp and National Clearinghouse (Universities share data on students based upon SSN)	
Online IEPs	
Individual Student Graduation Plans, including fields that capture chosen student Programs of Study (e.g. International Baccalaureate [IB], an Advanced Placement or University of Cambridge course sequence)	
CTE reporting	
Public and Non-Public Placement Information of students who are at schools that are not in DC (for special education and CFSA wards in other jurisdictions)	
Electronic Transcripts to Colleges and Universities	
Connect to HSMP	
Learner Achievement Data at All Levels (DCCAS, Formative Assessments, GED, SAT etc.)	
Transferring student information	

between charters and DCPS	
Capturing student information from OST systems	
Integrate Systems	
Possible determinants of test scores--students per teacher, teacher's education and years of experience, time on task, amount spent per pupil on supplementary materials, whether computers are available and used in different ways	
Link employment information (Career-Technical Education and workforce and economic development data) with educational data.	

6. Requirements

High Level Requirements for Program Components that are Critical to Projects (CTQ's) Success

The following CTQ's must be met for the project to be deemed successful:

6.1 Unique Student Identifier (USI)

6.1.1 This system must establish an automated process to assign and maintain a Unique Student Identifier (USI). An accurate USI system will correctly identify each learner and match student level data from multiple systems as LEAs enroll, transfer, and exit students. This system should possess data cleansing capabilities (option to interface with Trillium as the cleansing tool) and recommended business practices to ensure that state level data has the maximum integrity practicable.

One piece of specific information sought in this request is how the state might integrate into this solution the ability to assign and follow unique student identifiers for children beginning from birth. This should include examples of the workflow and processes required.

The LEA environment consists of, but is not limited to, the following Student Information Systems: DCSTARS, PowerSchool, Blackbaud, and SASI. The solution should take into consideration that the LEA enrollment is a decentralized function. This means that students are not enrolled by a central office. Instead, each LEA administrator has the responsibility for enrolling students. As a result, the solution must not be SIS dependent, which means that regardless of the SIS in use in the LEA environment the USI functionality should be in place to create unique student identifiers. The USI solution should have the ability to interface with various SIS's.

This solution should contain the following:

1. Assign a unique state-wide student ID based on a school submitting a specific set of student demographic information.

2. The unique ID must never be reused (100% unique per student, no duplicates)
3. The USI should not be able to be reassigned to another student.
4. Ability to easily create reports that identify all students and their respective ID, duplicates and non standard USI numbers.
5. No web client installations are acceptable.
6. Training should be provided to OSSE and OCTO staff and additional vendor support is optional.
7. Hosting options to host internally or at the vendor site.
8. Open source solution to allow OCTO/OSSE to make changes to application where need be.
9. Solution should be able to be accessed by a variety of business intelligent tools (reporting tools).
10. The intent of this solution is to feed into the data warehouse.
11. Adhoc reporting feature
12. Have the ability to tie the USI to various SIS's and other disparate systems throughout the enterprise. This will allow the same student that is in one system to be linked to attributes for this student in other systems.

6.2 Direct Free Meal Certification for the USDA Free and Reduced Meal Program

The proposed solution will enable the Office of the State Superintendent of Education to automatically collect, via the State Longitudinal Education Data Warehouse, student- level data required for all schools enrolled in the National School Lunch Program as mandated by the Child Nutrition and WIC Reauthorization of 2004, from the student information systems (SIS) located at all public Local Education Agency (LEA) within the District of Columbia.

The system should allow for the automatic collection of individual level data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA). The data from IMA provides data for all children who are members of households receiving assistance under the Food Stamp Program (FSP) and Temporary Assistance for Needy Families (TANF). The system will then match the student data to determine if the IMA data certifies those students as “categorically eligible” for free school meals based on their FSP/TANF eligibility.

The matches should be flagged as students that are categorically eligible to receive free school meals. School level reporting should provide each school with the ability to run reports that identify those students that are categorically eligible at their particular school. These school level reports should only contain the list of students at the particular school that is running the report. Need to show percentages of students that are categorically eligible. State reports should be able to be created to identify all students that are categorically eligible and which schools they attend. OSSE intends to use this automated functionality to “directly certify” students for eligibility in the USDA National School Lunch, Breakfast and Snack Programs.

6.3 Student Tracking System (STS)-

In conjunction with the USI solution, the solution should provide an automated system to track students in the District of Columbia and all of their associated student level data. This would include demographic information, enrollment, school attendance, graduation, free and reduced meal data, and programs attended. Need the ability to track students across various different systems.

6.4 Teacher Tracking System (TTS)-

The state needs a single automated system to manage unique teacher identifiers and to track their associated data. This would include the classes they teach, the locations where they teach, their years of experience, their certification/licenses, grades of teachers their degrees earned, and when they leave the system. Need the ability to track teachers across various disparate systems.

6.5 Statewide Longitudinal Education Data Warehouse

OSSE considers the State Longitudinal Data Warehouse the flag ship of the SLED program. The longitudinal data warehouse should serve as the integration point for all of the information in the program. The Data Warehouse will have many stakeholders, from teachers, principals, parents, students and education research entities to the Chancellor, State Superintendent of Education, and Mayor. The Data Warehouse must integrate the current silo systems that exist within the District, and place that data in a structure where each variable can be compared and analyzed.

The key capabilities of this system include the tools to extract data from a wide range of source systems, transform it as needed for validity and compatibility, and load it into a common data repository. Key capabilities also include the ability to generate and modify easily a large number of standard reports, tools that enable the creation and saving of customizable queries of any data field in the system, and tools for producing graphical representations of data. Reports (including graphical representations) must be available in easy-to-understand formats accessible via a web browser.

The system should include a process to establish an extraction, transform, and load (ETL) process to automatically transport the data from existing systems to the state. This ETL process must include data cleansing (optional interface with Trillium as the cleansing tool) and error reporting capabilities to maintain a high level of data integrity within the system and to help the state coordinate data cleansing activities with feeders to the system. Ideally, the ETL process will be invisible to the front end users of the transactional systems. This process would ideally occur often in order to provide users with near real time information.

The system must possess querying and reporting tools for two main sets of users. Most users of the system will want user friendly, easy to understand reporting tools to serve up a common set of reports. This front end could also include simple report creation capabilities.

The smaller but more sophisticated consumers of data for the system will demand ad hoc querying and reporting tools to relate a multitude of variables in the system. These tools should facilitate cohort analysis, longitudinal analysis, regression, correlation, value added assessment.

Conducting this more sophisticated analysis will require the storage and processing capacity to manage extensive amounts of data.

This solution should have the ability to scale to the 10 elements of the Data Quality Campaign (<http://www.dataqualitycampaign.org/>):

1. A unique statewide student identifier that connects student data across key databases across years
2. Student-level enrollment, demographic and program participation information
3. The ability to match individual students' test records from year to year to measure academic growth
4. Information on untested students and the reasons they were not tested
5. A teacher identifier system with the ability to match teachers to students
6. Student-level transcript information, including information on courses completed and grades earned
7. Student-level college readiness test scores
8. Student-level graduation and dropout data
9. The ability to match student records between the P-12 and higher education systems
10. A state data audit system assessing data quality, validity and reliability

A description of some of the priority business requirements from different user groups follows:

User Community	High Level Requirements
OSSE & Deputy Mayor for Education	AYP reports, EDEN Compatible reports to the US DOE, school profiles, value added analysis, longitudinal analysis, and NCLB compliance reports, IDEA reports, SPP reports, CSPR reports, CAR reports, and HQT reports.
OSSE Policy & Research	Student History (including HST assessments, grades, attendance, promotion/graduation data, discipline, teacher and program information, language skills, health information, family information, poverty data etc.). Teacher History (including education, training, certification, work history, courses taught and attendance). School Profile (including aggregate assessments, courses and programs offered, special resources, facilities data and Risk Behavior Survey data) and program budgets. Ability to perform ad hoc reporting.
Parents	Student history, teacher qualification qualifications and school profile. Reports comparing school profiles. All viewable data should be available in multiple languages, especially Spanish.
Teachers	Assessment, achievement, student profile data,

	school profile data, HST item bank, ad hoc reporting.
NGOs & Community Based Organizations	Assessment, achievement, student profile data, school profile data, program budgets, promotion/graduation data, value added analysis, ad hoc reporting, longitudinal analysis.
Special Ed	All IEP data, student history, ad hoc reporting, longitudinal analysis.
Post-Secondary Ed	Student history, school profile
Principals	Student history, teacher history, HST item bank, ad hoc reporting, longitudinal analysis.
Teacher Trainers	Student demographics, assessments and achievement, teacher histories, HST item bank, school profile, ad hoc reporting, longitudinal analysis.

6.6 State Special Education Management System

OSSE seeks to create an integrated state special education system that will unify special education across District LEAs. This system should collect student level IEP information such as disability code, interventions, response to interventions, timelines, interruptions or violations in service, IEP encounters, IEP participants. It should also provide the state with the capacity to provide LEAs with a standardized IEP form for case management.

6.7 Integration

As stated before, OSSE will be seeking an integrated solution. The first priority is integrating the various systems with a unique student identifier (section 5.1) across the various systems. The second priority is the Direct Meal Certification for the USDA Free and Reduced Meal Program (section 5.2). The schedule for the development of the remaining items of the SLED program will be decided as the program proceeds and experience is gained. Any proposed solution must allow for the data contained in each component to be shared with the other systems. It is vital that integration be open, to allow OCTO to integrate future systems as they become available. Please provide information on the training and documentation that would be employed in any specific solutions.

6.8 Project Implementation and Change Management Services

OSSE recognizes that the scale of scope in the program is immense and involves cutting edge technology from the data services market. It is therefore anticipated that this project will require content experts in education policy, system implementation, training, and change management. OSSE sees these “human development” capabilities as more critical to the success of the program than the selection of the technical components themselves. Therefore, any information provided should detail the best practices in training, change management, data entry skills development, data integrity management, and system governance best practices that will improve the benefits to student achievement that OSSE seeks with this program.

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OSSE would also like to request information on suggested roll-out schedules for this program. We are aware that different states have chosen to implement different components of their state longitudinal warehouse and that there have been mixed results based on that sequencing. Please provide case studies, white papers, best practices, or policy roadmaps that demonstrate the best current thinking on roll-out strategy. This should include what scale of project implementation is feasible and desirable for a five year roll-out timeline.

7. ATTACHMENT 1: RESPONSE TO REQUEST FOR INFORMATION EXECUTIVE SUMMARY AND QUALIFICATIONS

Section A: Problem Solving Approach

Please provide answers to the following questions.

1. Provide a clear identification and description of your organization.

2. Provide a clear and concise summary of your organization's qualifications and experience as it relates to this Request for Information.

3. Provide a brief explanation of your interest in publicly funded longitudinal education data systems.

8. ATTACHMENT 2: RESPONSE TO REQUEST FOR INFORMATION DETAILED INFORMATION

Section A: Problem Solving Approach

Please provide concise answers to the following questions in the space provided.

1. Describe your recommended approach for addressing the needs of the SLED Program as outlined in this Request for Information.

2. Reference any studies or reports that support your recommended approach. Where appropriate, include URLs for online documentation.

3. Identify best practices being employed in similar state/district education agencies.

4. Identify trends in public education policy and instruction that may affect the design or use of longitudinal data systems

5. Describe the method you would use to determine the cost of carrying out each phase of the program.

6. Describe your recommended approach to effective stakeholder communications, training and organizational change management (e.g., business process reengineering). Describe your recommended approach to measuring the effectiveness of each.

Section B: Architectural Approach

Please list and describe tools and techniques you would recommend for integrating heterogeneous and distributed information systems into the education data warehouse.

7. Physical Integration: ETL technology for predefined batch schedule. List preferred tools and technology to define and implement an Enterprise data warehouse where operational data is extracted, transformed, and loaded into a central data warehouse.

List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

8. EII Integration (On-Demand Pull): List preferred tools and technology to create an integrated view of the data residing in heterogeneous data sources. Should be able to query the integrated view to access the integrated data from the heterogeneous sources in near real time.

List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

9. Event-Driven Integration (On-Demand Push): List tools and technologies to populate the data warehouse with information in real time when predefined business critical events occur in operational systems.

List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

Section C: Education Business and Data Domain Analysis

Please list and describe the tools and techniques you would recommend to analyze and document state/district level education business and data meet the following business needs. NOTE: Consider implementing federal education data standards and models.

12. List tools and techniques for conducting and documenting education business reference modeling.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
13. List tools and techniques for conducting and documenting education data reference modeling.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
14. List tools and techniques for building a standard data taxonomy across state/district educational information systems. NOTE: Consider implementing federal education data standards.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
15. List tools and techniques for mapping heterogeneous and distributed data assets to the standard education taxonomy.		

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List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

Section D: Data Quality Controls

Please list and describe the tools and techniques you would recommend to ensure high quality data in the data warehouse.

16. Define the scope of activities for data standardization.		
17. Define the scope of activities for data cleansing.		
18. List tools and techniques for data cleansing and quality control.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

Section E: Privacy and Access Control

Please list and describe the tools and techniques you would recommend to ensure that state and federal privacy laws are strictly enforced in systems that access data warehouse.

19. Role based access controls for pre-formatted reports.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
20. Role based access controls for ad hoc reports.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
21. Role based dashboards for monitoring operational efficiencies.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs
22. De-identifying data.		
List Tools (Add rows as necessary)	Describe Tool Functions	Provide Technical Specs

Section F: Cost Projection

Please indicate your order of magnitude cost projections for the various phases of a data warehouse project using the tools and techniques you have recommended.

23. Assessment, Planning and Detailed Requirements Capture			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
	N/A		
24. Acquisition of technology			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
25. System and data architecture and design			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
26. System development, implementation and technical deployment			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
27. Deployment Assurance: communications, business process re-engineering, hands-on training, launch support call centers, etc.			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
28. Year 1 operations & maintenance			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
N/A			
29. Steady state (Year N) operations & maintenance			
Time (Months)	Hardware Costs	Software Costs	Labor Costs
N/A			