SLC Alpha Environment

Alpha Release Scope & Timeline

May 25, 2012

DRAFT – WORKING DOCUMENT

Revisions

Version	Date	Authors	Comments
1.0	5/25/2012	S.Bates	Initial document release

Contents

I. SLC & Document Overview

The Shared Learning Collaborative (SLC) is working to deploy a set of technology products and services that work together with existing standards to enable data interoperability. The production-ready release of the SLC technology services (version 1.0) will be released in December 2012. The SLC plans to pilot core components in an Alpha release beginning in June 2012. This document provides an overview of the capabilities, timing, and assumptions associated with the Alpha rollout period of SLC products and services.

This document is intended for audiences including SEA project teams, LEA project teams, education software providers, developers, and others in the community interested in the scope and timing of Alpha.

For more information about the SLC, please visit SLCedu.org.

II. SLC Alpha Objectives & Assumptions

Objectives

- Allow SEAs and LEAs to test loading data to the SLC data store utilizing the bulk data ingestion mechanism
- Allow SEAs and LEAs to test loading data to the SLC data store utilizing record level APIs
- Provide interested parties access to functional APIs to allow applications to read and write data to the SLC data store
- Provide interested parties with a sandbox environment to start the development and testing of customized applications that read and write data to the SLC data store through APIs
- Allow SEAs and LEAs to test and provide feedback on an Alpha version of the educator dashboard application
- Allow SEAs and LEAs to test and provide feedback on an Alpha version of the SLC portal application
- Demonstrate the viability of the authentication and authorization services to interested parties
- Validate SEA, LEA and SLC capacity models
- Begin building an SLC knowledge base for frequent issues and questions for SEAs and LEAs

Key Assumptions

- Errors and bugs are expected and will be publically documented
- Data store may not be ready to accept *all* data elements at initial Alpha launch available data elements will be publically documented
- Operations support available for SEA/LEA teams and their designated vendors
- SLC will provide between 3-6 point releases within the Alpha period. Dates will be published. Appropriate documentation on SLCedu.org including the developer guide will be versioned and updated.
- SLC will provide full technical documentation along with this high-level scope document. Published specs as of this date on SLCedu.org include:
  - SLC REST API Specification
    http://slcedu.org/api

- SLC Data Store Logical Model
  http://slcedu.org/api
- SLI Data Ingestion Specification
  http://slcedu.org/sites/default/files/downloads/SLC_Data_Ingestion_Specification.pdf
- Identity Integration Solution Overview
  http://slcedu.org/sites/default/files/downloads/SLC_Identity_Integration_Solution.pdf
- Learning Content & Standards
  http://slcedu.org/sites/default/files/downloads/SLC_Learning_Standards_Alignment_Whitepaper_v1.0.pdf

III. High Level Timeline & Milestones

The following are key dates leading up to and throughout the SLC Alpha period which spans between June 16, 2012 and December 12, 2012.

Date	Milestone
January 31, 2012	Official SLCedu.org Website Launch
May 4, 2012	Publish Final Alpha API Specifications
May 4, 2012	Publish Final Bulk Data Ingestion Specifications
June 16, 2012	Initiate Alpha Period • Data Store • Application APIs • Bulk Data Ingestion • Federated Identity Access Management
June 16, 2012	Alpha Sandbox w/ Fixture Data
June 16, 2012	Alpha Educator Dashboard
June 16, 2012	Alpha Portal Application
June 16, 2012	SLC Developer Website Launch
July 7, 2012	Alpha Bulk Data Ingestion SIF Adapter
July 23, 2012	Learning Maps Demonstration Server Available
July 23, 2012	Learning Registry Index Service Demonstration Server Available
August 30, 2012	Release v1.0 of Content Tagging Tool
August 30, 2012	Release v1.0 of Content Search Application
December 12, 2012	Release v1.0 of Educator Dashboard
December 12, 2012	Release v1.0 of SLC Portal Environment
December 12, 2012	Release v1.0 of SLC Data Store
December 12, 2012	Delegated Identity Access Management
January 25, 2013	Learning Map Server Fully Available
January 25, 2013	Learning Registry Index Service Fully Available

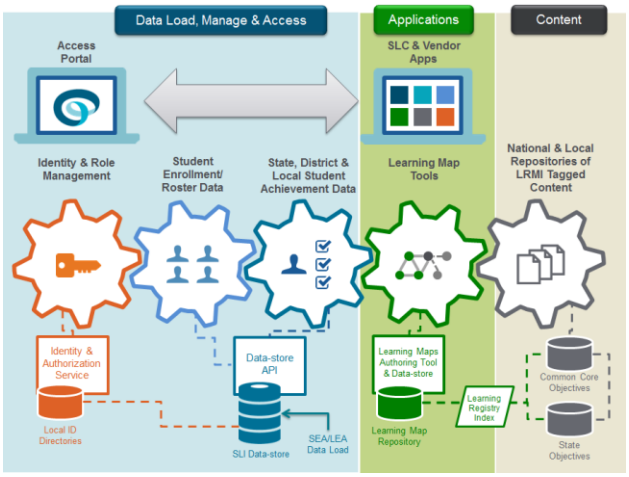
IV. Detailed Alpha Scope by Component

Components of the SLC environment generally belong to one of three categories:

1. Data Load, Management and Access
    a. SLC Data store
    b. Bulk Data Load
    c. Record Level API
    d. Authentication
    e. Sandbox Environment

2. Applications
    a. Educator Dashboard
    b. Portal Application
    c. Learning Maps Authoring Tool
    d. Learning Maps Visualization Tool
    e. Other SLC Applications

3. Content Tools and Solutions
    a. Learning Registry Index
    b. Content Tagging Utilities
    c. Content Search Application



Alpha Scope: High-level Categories

1. Data Load, Management & Access

A. SLC Data Store

The data store will be available to states and districts to maintain data about organizations, schools, employees of SEAs and LEAs and student enrollment, biographical and achievement data.

The data store's logical data model, which describes the data that may be housed in the SLC data store by SEAs and LEAs, is modeled after the Ed-Fi initiative, which provides alignment with many other common educational data initiatives, such as CEDS. For more information, visit: http://www.ed-fi.org/.

> *Initial Alpha Release:* All Ed-Fi published entities will be supported with limited support for the following logical entity groups: Education Organization Structure, Programs and Services, Graduation, School Calendar, Bell Schedule, Discipline, Staff and Employment.
>
> *V1.0 Release:* Full support for the remaining entities in the above categories will be provided.

Detailed information about the SLC Data Model can be found in the SLC Developer Guide available on SLCedu.org: http://slcedu.org/api/

B. Bulk Data Load

This mechanism facilitates data exchange between SEA, LEA or vendor source systems to the SLC data store via XML-format batch files and CSV conversion.

Format

> XML-format data uploads supported.

Entities Supported

> *Initial June Alpha Release:* All Ed-Fi interchanges will be supported with limited support for the following logical groups: Education Organization Structure, Programs and Services, Graduation, School Calendar, Bell Schedule, Discipline, Staff and Employment.

V1.0 Release: Full support for the remaining entities in the above categories will be provided.

Features

Initial Alpha Release: Features will include Bulk (batch) data upload, Bulk data validation, Bulk data ingestion, Bulk data error reporting, and a CSV-to-XML conversion toolkit for a subset of entities.

Mid-Alpha Releases: Incremental updates to supported entities. Support SIF data transfers via an initial SIF adapter build.

V1.0 Release: CSV-to-XML conversion toolkit for all supported entities. An advanced SIF adapter will also be developed, but full feature list has not yet been determined.

C. Record Level API

The Record Level API provides applications access to the SLC Data Store and provides an event-driven data integration method for source systems. API Specifications may be found in the developer guide at: http://slcedu.org/api/

Format

Initial Alpha Release: JSON will be supported at the beginning of Alpha.

Mid-Alpha Releases: XML will be supported later in the Alpha period.

Entities Supported (Parity with Bulk Data Load to be maintained)

Initial Alpha Release: All Ed-Fi published entities will be supported with limited support for the following logical entity groups: Education Organization Structure, Programs and Services, Graduation, School Calendar, Bell Schedule, Discipline, Staff and Employment

V1.0 Release: Support for the remaining entities in the above categories will be provided.

Features/Capabilities

"CRUD" functions: POST (create), GET (read), PUT (update), DELETE, will be supported for approved applications and users to access the data store

D. Authentication

Authentication connects roles in SEA and/or LEA Federated and Delegated Identity Directories with the SLC and SLC-compatible applications. An overview of the identity integration solution can be found at:
http://slcedu.org/technology/technical-specifications/slc-pilot-phase-project-documents

Distributed Authentication Model

Initial Alpha Release: Federated Identity Authentication support (using SAML 2.0 and OAuth 2.0)

V1.0 Release: Delegated Identity Authentication

Role Management

Initial Alpha Release: The following roles will be available for Alpha.

- Aggregate Viewer: Interested in the aggregate/summary data as well as the trends, but cannot see individual-level record information.
- Educator: A person who works for education organizations and is interested in student outcomes. Generally, educators are the people who interact directly with students on a daily basis. Examples of derivative roles: Teacher, Classroom Assistant, Athletic Coach.
- Leader: Interested in students in their own School or many Schools within a District/State. In addition to the individual, they are interested in summary/aggregate data. Examples of derivative Roles: District/LEA Leader, State Leader, School Principal, Dean, Department Head, Special Ed Expert, School Psychologist, Guidance Counselor.
- IT Administrator: May not have a direct educational interest in particular students, but administer systems that help educators and leaders by making data available to them.

Contextual Constructs:

Initial Alpha Release: Default Roles and Permissions for parents and students that correlate to their common roles within the educational ecosystem.

*V1.0 Release: A*bility for SEAs and LEAs to define and configure Custom Roles, and assign Permission/Permission groups that exist in the SLC

E. Sandbox Environment

This sandbox environment is a full replica of the production environment, pre-populated with fixture data. Sandbox environments are not for use with Personally Identifiable Information (PII).

Initial Alpha Release: At Alpha release, the SLC will make available a hosted sandbox environment. Developers can register for a "tenant" which can be used to interact and execute the capabilities of the SLI REST API and Bulk Ingestion prior to introduction of "live" data into the production environment.

- Pre-defined fixture datasets, including user identities, available for ingestion into the SLC data store.
    - Fixture data
    - A directory (e.g. OpenAM, AD, etc.) that houses sample users (teachers, students, staff) that are aligned to that fixture data.
- Capability to upload data in bulk according to previous the Bulk Data Ingestion section 1-B.
- Ability to "purge" or "reset" a sandbox tenant and re-load data to a known initial state.
- Full access to initial SLC-provided applications, including the SLC Dashboards, with the ability to configure those dashboards for fixture users.
- Full logical isolation between provisioned sandbox accounts
- The same functionality as production, with predictable differences in performance compared to production.

F. SEA/LEA Admin Tools

General administrative abilities found in the Admin Pages provide SEA & LEA administrators access to system configuration tools.

Initial Alpha Release:

- SEA Administrators will be able to approve and revoke application access to their instance of the SLC data store
- LEA Administrators will be able to authorize and revoke access to applications at their district
- SEA Administrator will be able to authorize and revoke application access to specific districts for the districts that have delegated this right to the state
- A read-only validation tool, the Data Browser, will allow traversing of available data through the API
- Administrators will be able to create a realm and map SEA/LEA directory roles to the SLI default roles
- Integrated web-usage analytics tool that is available for use by all of the Alpha release SLI applications at launch
- Offline tools for optimized performance

Mid Alpha Releases – Timing TBD:

- Administrators will be able to delegate certain district privileges to the state
- The main Admin page can also be used to access application-specific configuration settings for approved apps. This feature would be requested by local or 3rd party developers and agreed to by the SEA or LEA.
- Data Browser sorting, paging, and searching features

2. Applications

A. Educator Dashboards

Dashboards allow educators to see information about their students individually or by class, school, and other organizational levels. Access is based on role.

The educator dashboard provided by the SLC is intended to be an exemplar application utilizing the standard set of application APIs. SLC-provided dashboards are in Open XML format and may be modified, customized, or substituted.

Initial Alpha Release: Alpha will provide a set of initial dashboards with limited configurability. Pilot sites may request particular configurations during Alpha and the SLC will provide the appropriate code to SEA or LEA admins for upload.

Three types of pages will be available at Alpha:

- Student Lists: Grade book-like interface to view classes/sections of students that an educator has access to. Educators can choose from a predefined set of lists which consist of custom combinations of data columns. Student lists also link to individual student profiles
- Student Profiles: Provides detailed information for individual students, organized into panels which are then grouped into tabs.
- Search: Allows users to search by student name and view results of only those students the user has access to. Only full first and last name searches are supported at Alpha.

Limited data support at initial Alpha launch

- Student Enrollment/Biographical Information
    - Students that are ELL, Section 504, or in an IEP are flagged in lists and profiles. Lists can be filtered based on these attributes.
    - Profiles include a complete history of student enrollment, including school entry and discharge dates, and reasons for discharge and entrance.
    - Current contact information for each student is available on the Student Profile. Information for multiple-student parents may not be completely available at the beginning of the Alpha period, but will be provided during one of the subsequent Alpha point releases.
- Assessments

    - Displays performance levels, scaled scores, and other results for a wide variety of assessments on lists of students and student profiles. We have tested typical implementations of summative state assessments, formative literacy assessments, and college entrance exams.
    - The "Fuel Gage" widget displays scaled scores relative to cut points in a familiar in-line bar-chart format. The color-coded visualization allows for quick scanning in lists, and highlights "bubble students" who are just below or above a proficiency cut-point.
    - On lists, provides any number of assessment results for a class. Common sense "nth most recent" business logic ensures that the most up-to-date assessment results always appear on lists of students. Alternatively, "Highest Ever" logic can be applied to assessments such as SAT or end-of-course tests that are usually given once.
    - On profiles, see a complete history of any supported assessment or assessment family.
- Grades
    - Display both traditional report card "letter grades" (usually late elementary grades and above) and learning objectives (usually early elementary grades and below).
    - Grades are presented using a color-coded "Teardrop" visualization. Grade trend visualizations may not be completely available at the beginning of the Alpha period, but will be provided during one of the subsequent Alpha point releases.
    - Lists can be configured to include both the most recent (or “nth most recent”) final course grades as well as specific gradebook entries for a class.
    - Profiles show a complete transcript and elementary report card history.
- Attendance
    - On lists, a color-coded display of student attendance information (attendance rate, attendance count, tardy rate and tardy count) is available.
    - A yearly summary of rates will be available on the student profile. A complete calendar view of attendance events may not be completely available at the beginning of the Alpha period, but will be provided during one of the subsequent Alpha point releases.

V1.0 Release: Dashboards will be customizable for selection of fields and their order of appearance, selection of various data visualization options, and XML-based configuration of colors and page configurations.

B. Portal Application

The Portal home page is a single destination for all SLC-approved applications. It provides a master list of applications available to educators in one convenient location.

Initial Alpha Release: The Alpha release will provide a landing page that hosts access to applications and administrative tools with a standard header and footer.

- Headers provide a simple interface to logout, report a problem, or return to the Home page. Footers will provide legal disclaimers on every page.

  (Applications can include the header/footer by being embedded in an iframe or as a WSRP portlet. Additionally, applications may programmatically include header/footer code by calling a simple web service.)

- Report-a-Problem allows user to send any problems they are having to the SLC as an emailed report. Problem reports include a unique ID, timestamp, source URL, a user-selectable type of problem, and user-provided problem description.

V1.0 Release: The Alpha release will provide a landing page that hosts access to applications and administrative tools with a standard header and footer.

C. Learning Maps Authoring Tool

The Learning Maps Authoring Tool is used by curriculum teams or solution provides to select a set of Learning Objectives (Common Core State Standards or other State Standards) and to create arrangements, or paths, through the objectives.

Mid-Alpha Release (July 2012): Initial Demonstration of Authoring Tool. The demonstration server will allow teams to create and save custom pathways through the common core state standards. Mid Alpha release of the authoring tool will have preliminary integration with the Learning Registry Index.

V1.0 Release (Dec12-Jan13): Integrated Learning Maps Authoring Tool. Will allow users to login / save/ edit / further customize learning maps.

Additional detail on the learning maps authoring tool will be added on SLCedu.org as available.

D. Learning Maps Visualization Tool

The Learning Maps Visualization tool provides a graphical representation and rendering of Learning Map pathways authored by SEA or LEA teams.

Mid Alpha Release (July 2012): Initial Demonstration of Visualization Tool. The Alpha release visualization tool will allow teams to generate a graphical representation from the learning maps authoring tool using a single exemplar visualization.

The SLC's Learning Map visualization app reference implementation will include the functionality needed to link nodes in Learning Maps with learning standard aligned content through a Learning Registry Index search.

V1.0 Release (Dec12-Jan13): V1.0 Learning Maps Visualization Tool.

Additional detail on the learning maps visualization tool will be added on SLCedu.org as available.

3. Content Tools & Solutions

An SLC whitepaper titled Learning Standard Alignment in the SLC Technology is available on SLCedu.org. The whitepaper provides greater detail on the overall scope of each component:

http://slcedu.org/technology/technical-specifications/slc-pilot-phase-project-documents

A. Learning Registry Index

The Learning Registry Index stores Learning Objective and Resource metadata to fulfill queries for learning resources quickly and with improved contextual awareness.

Mid Alpha Release (July 2012): Learning Registry Index Demonstration. The API specification for data access to the Learning Registry System will also be completed.

V1.0 Release (Dec'12-Jan'13): Learning Registry Index Fully Accessible.

B. Content Tagging Tool

This interactive tool is used to label resources as to its intended audience, applicability and alignment to learning standards. The generated resource descriptions are published to the Learning Registry.

The utility will be available both as an "app" through the SLC portal and as a standalone website-installable version, optimized for batch-tagging of multiple resources.

Mid Alpha Release (July 15, 2012): Demonstration w/ limited capability

- Generate keyword-index of multiple vocabularies
- Read LRMI Vocabulary from web services or file
- Read CCSS Learning Objectives from web services (LR) or file
- Read SLC Learning Registry Vocabulary and add to tagging
- Read keyword index (combo) from file or web services
- Save to file or web services

Mid Alpha Release (Aug 30, 2012): Demonstration w/ limited capability

- Versioning of Data

- Sign/Save to Learning Registry
- Auto-populate fields
- Improved User Experience
- Revise Keyword-model
- Receive user and role information from SLC Portal

C. Content Search Application

This application provides for discovery of learning resources based on search, user role, content filters, and other contextual information. The search app queries the Learning Registry Index, as well as Internet search engines.

The search app is provided via the SLC user portal, and may also be used as a standalone website-compatible utility.

Early Alpha Release (June 30, 2012): Demonstration w/ limited capability

- Portlet Architecture
- Learning Objective Read from web services or file
- LRMI Vocabulary reads from web services or file
- LR Index Predicates read from web services or file
- Capture search event and display results
- Display results in visual and textual format
- Filter results based on metadata

Mid Alpha Release (July 30, 2012): Context and personalization capabilities

- Improved visual display
- Use cookie to pre-fill search information
- Filter results based on identity of user
- Push anonymous usage to Learning Registry as paradata
- Improved visual search and filter model

Mid Alpha Release (August 30, 2012): Intelligent search capabilities

- Suggestions on additional resources based on user info, heuristics and automated search