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Annual Report

FY 2020-21

SACS System Replacement (SSR) Project

Version 1.0
September 2, 2021

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Revision History

Name	Date	Reason for Changes	Version
Denise Harris	5-18-21	Initial template	.01
Denise Harris	8-24-21	Updated report with Project Team comments	.02
Denise Harris		Submittal to CDE	1.0

Approval History

Approved By	Title	Version	Date Approved
Amy Fong	Chief Operations Officer Fiscal Crisis & Management Assistance Team/ California School Information Services Kern County Superintendent of Schools	1.0	
Elizabeth Dearstyne	Director School Fiscal Services Division California Department of Education	1.0	

1 Introduction

1.1 Background and Purpose of the Annual Report

The California Department of Education (CDE) maintains and operates the Standardized Account Code Structure (SACS) software to fulfill its K-12 financial oversight needs, including statutory requirements for local educational agencies (LEAs) to report budgets, interim, and annual financial reports. The SACS software provides other functionality unique to budget and interim reporting such as cash flow projections and financial forecasts. The SACS software is comprised of four separate components in the reporting and reviewing of financial data, transmission of data to the CDE, and the maintenance of the data quality validation rules. The LEA-facing portion of the SACS software was initially developed and exists currently as a standalone software that LEAs download, install, and run locally. In January 2010, the CDE submitted its Feasibility Study Report (FSR) to implement a centralized web-based system accessible remotely by LEAs throughout California, allowing all stakeholders to access the solution from their existing environments without the local need for any new or additional hardware or software.

The Budget Act of 2016 appropriated Prop 98 funding for the CDE to initiate the procurement of a replacement SACS system. In July 2016, the CDE requested letters of interest and the Kern County Superintendent of Schools (KCSOS), the administrative agent for the Fiscal Crisis and Management Assistance Team (FCMAT)/California School Information Services (CSIS), responded to that request. FCMAT/CSIS spent much of 2017 developing and working on a proposal for the replacement of the SACS system. In June 2018, the CDE selected FCMAT/CSIS to develop the SACS System Replacement. The primary objective of the multi-year SACS System Replacement project is to create a web-based application customized to the K-12 financial reporting workflow that eliminates the use of unsupported and obsolete technologies. FCMAT/CSIS began work in June 2018 with the onboarding of business analysts, project management, and independent oversight staff. When completed, the replacement SACS system will be a modern, web-based system designed and purposefully built for CDE, California's local educational agencies and their county offices to collect, review, and disseminate LEA financial data.

The original workplan had scheduled the rollout of the application Spring 2021 with FCMAT/CSIS performing warranty responsibilities with reduced staffing after system go-live. In Spring 2020, the onset of the COVID-19 pandemic, economic uncertainties, and natural disasters shifted attention and resources to reimagining school operations. Although the SSR workplan called for increasing outreach this year, the confluence of these events presented a significant risk to the project. The planned activities of user acceptance testing, and user training rely heavily on the availability and active participation of LEA staff to engage in project activities and implement organizational changes, for example, managing users and security roles in the new software, locally. To mitigate this risk, the SSR project proposed a one-year delay as its COVID response through a change request. With an amendment to the SSR memorandum of understanding (MOU) and the approval of control agencies through a Budget Change Proposal submitted by the CDE, FCMAT/CSIS maintained staffing at pre-release levels through 2020-21, and the project shifted its delivery target with a one-year delay to a revised spring 2022 delivery.

The *Annual Report* summarizes the work performed by FCMAT/CSIS to design, document, develop, and test the SACS System Replacement (SSR) solution during fiscal year 2020-21. This annual report describes the SSR project activities completed by FCMAT/CSIS during the year; reports the budgeted and estimated actual expenses; and discusses project adjustments and opportunities for the 2021-22 year.

1.2 Document Conventions

The first approved version of the document will be numbered 1.0. Minor revisions (that is, format, spelling, or clarification) will retain the major version number and increment the revision number to the right of the decimal (for example 1.0, 1.1, 1.2…).

1.3 Approval Authority

The CSIS Chief Operations Officer shall approve this *Annual Report* on behalf of FCMAT/CSIS before submitting it to the CDE. The Director (or designee) of the School Fiscal Services Division shall approve this *Annual Report* on behalf of the CDE.

1.4 Approvals

FCMAT/CSIS 2020-21 Annual Report
SACS System Replacement (SSR) Project

Version 1.0
September 2, 2021

Amy Fong, Chief Operations Officer	Elizabeth Dearstyne, Director
Fiscal Crisis & Management Assistance Team/ California School Information Services Kern County Superintendent of Schools	School Fiscal Services Division California Department of Education
 Digitally signed by Amy Fong Date: 2021.09.02 13:45:10 -07'00'	
Signature/Date	Signature/Date

2 Planned Work for FY 2020-21

The June 1, 2018, SACS System Replacement Final Proposal, Version 2 describes the requirements for the major deliverable documents for each year of the project. Typically, this includes: an updated Project Management Plan, an updated Project Work Plan, Solution Test Plan, User Outreach Plan, Configuration Management Document, and User Training Plan.

During FY 2020-21, the CDE and FCMAT/CSIS worked together to identify and clarify expectations for each deliverable and updates to previously approved deliverables. The major work planned in the 2020-21 *Statement of Work* included the following:

- An amendment to the Memorandum of Understanding (MOU) to acknowledge impacts to LEA workload due to the pandemic and, as part of the project's COVID-19 response, amend the workplan with a one-year delay;
- All 2020–21 key system development and other tasks scheduled within the Project Work Plan;
- Updated Project Work Plan;
- Drafting the SOW for the following year; and
- Initiating discussions to address designating FCMAT/CSIS with maintenance and operations responsibilities.

Software development and automated testing activities are organized into incremental units of work in the Project Work Plan as three-week sprints and further described in Section 3 of this report.

As noted in the Budget Change Proposal's implementation plan and carried forward into the workplan, the deliverables for FY 2020-21 included the following:

- System Technical Guide – DEL 9;
- Knowledge Transfer Plan – DEL 11*; and
- Requirements Traceability Matrix (RTM) – DEL 12*.

All three deliverables were completed in 2020-21 according to schedule and approved by the CDE. These documents will be updated in 2021-22 prior to Go-Live as needed.

The Budget Change Proposal's implementation plan also noted that system development would continue into 2021-22. Deliverables for FY 2021-22 include the following:

- System Readiness – DEL 10;
- System Go-Live – DEL 13; and
- System Acceptance – DEL 14.

2.1 FCMAT/CSIS Major Work Activities

The major work for FCMAT/CSIS in FY 2020-21 to support project expectations included:

- Maintaining a working relationship between the FCMAT/CSIS and CDE teams, as well as the independent oversight consultants to ensure the SSR project is being developed to meet the needs of stakeholders;
- Continuing to build the SACS system per the approved SSR Proposal solution requirements and timeline;
- Continuing to monitor the SSR project's development to ensure that the project accurately captures scope, adheres to the credible timelines, and costs are managed;
- Continuing to design and document the design, development, and testing of a system that will meet the requirements of the SSR solution within the revised one year-delay delivery timeline;
- Continuing to implement automated testing and refine the requirement/software development/testing processes to ensure quality outcomes in an efficient manner; and
- Providing effective management, office support, and technology services to FCMAT/CSIS staff.

As the project managed major work activities and risks the CDE and FCMAT/CSIS made adjustments to the above planned work with the assistance of independent oversight consultants.

2.2 FCMAT/CSIS Progress Reports

As established in the Memorandum of Understanding (MOU), the CDE receives progress reports about the SSR project periodically. These include reports from FCMAT/CSIS, the Independent Project Oversight Consultant (IPOC), and the Independent Verification and Validation (IV&V) consultant. The reports describe the status and progress achieved towards the project milestones identified in the planning and management documents, any serious difficulties encountered during the project, and any recommended corrective action(s). The format of such reports was mutually agreed upon by the CDE and FCMAT/CSIS.

Throughout FY 2020-21, independent project oversight (IPO) consultants and the independent verification and validation (IV&V) consultant completed monthly and quarterly assessments of the SSR project. IPO monitors project management processes and project progress toward achieving the agreed upon baseline goals for the project. IV&V monitors the product itself, including numerous artifacts in the following areas: requirements management, design, build and unit test, system test, user acceptance testing (UAT), and technical architecture. The independent oversight consultants continued their work in 2020-21, and CDE and FCMAT/CSIS met regularly to discuss their feedback with them, work through any project challenges, and implement agreed upon solutions.

3 Summary of Work for FY 2020-21

FCMAT/CSIS' capture of the CDE's requirements and the CDE's timely approval of requirements packets are crucial for successful SSR project completion. When the CDE and FCMAT/CSIS planned SSR project work for FY 2020-21, the agencies agreed the major focus for the year would be finalizing scope through requirements clarification meetings as needed, system development and testing, user outreach, and formulating a training plan.

The onset of the world-wide coronavirus (COVID-19) pandemic was an unprecedented phenomenon that introduced stringent restrictions intended to preserve public health and safety in California. On March 19, 2020, the California State Public Health Officer ordered all individuals living in the state of California to stay home. The SSR project team, consistent with this directive, shifted to working remotely. While there was initially no negative impact to the work accomplished by CDE and FCMAT/CSIS in the project scope, schedule, quality, or costs during the early part of FY 2020-21, the project team suffered losses in developer and tester staffing in the second half of the fiscal year that compounded the impact of delayed approval of requirements packets.

The requirements identified in the SACS System Replacement (SSR) Proposal are stated at a high level. Immediately, upon commencing and for the first six months of the project, CSIS acquired business analysis resources dedicated to assisting with clarifying requirements and decomposing them into units of work known as User Stories. The agile approach enabled CSIS to begin building software as requirements packets were approved from CDE. The approval of requirements packets was crucial toward obtaining an accurate accounting of the scope of work and to optimize the planning of that work.

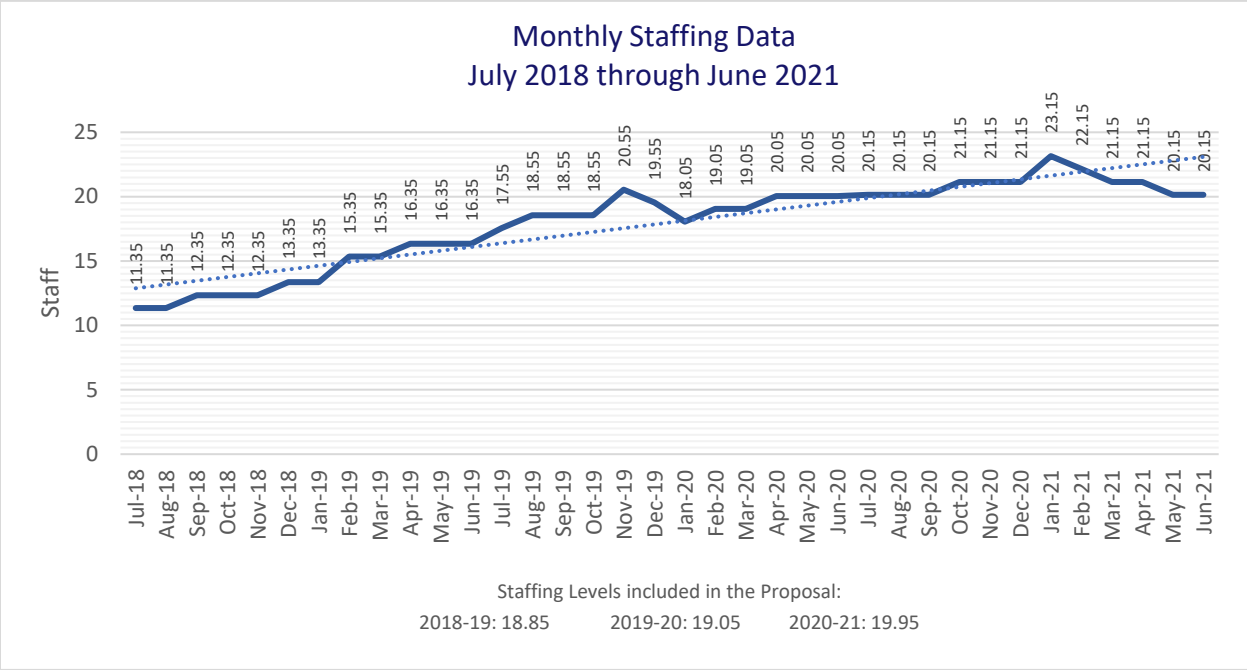
By January 2019, the business analysts created a substantive backlog of work items, and a team of developers and testers joined the project to begin building the software. The project took the approach of building a skeleton of the software in the first year, and as additional requirements packets were approved, the design and architecture of the system could be verified and incrementally adjusted to minimize risk in technical design. The design and technical implementation become more static and stable as more and more pieces of the software are completed. The deadline set for requirements to be finalized and approved was set intentionally one year in advance of the system readiness milestone to provide enough time to minimize risk of unknowns stemming from scope. With the approval of a one-year extension due to COVID-19 impacts to LEAs, the project workplan set the deadline for requirements in November 2020.

While a majority of requirements packets were approved by the November 16, 2020, deadline, three packets remained and were not approved until February 5, 2021. Because the delay came at such a late point in the project timeline, it left significantly less time to assimilate the new information and adjust the development and testing strategy ahead of user acceptance testing. Subject to a change request, Report Requirements Packet #4 contains new report requests not included in the Proposal.

As more recent approved requirements were translated into User Stories, the level of effort, quantified as story points, grew unexpectedly due to the complexity of business needs. At the time of the requirements deadline in November 2020, the project included 12,913 story points with a scope growth rate of less than 5% historically. By the end of the fiscal year seven months later, the project's total story points had grown to approximately 16,782 total story points, a significant increase in a relatively short timeframe.

In addition, while the initial onset of COVID-19 caused little disruption among project team members and their work, the COVID-19 surge in Spring 2021, first evidenced in countries outside the United States, began to have an increasing impact at a time when FCMAT/CSIS was attempting to increase

additional resources. Potential gains in capacity were not realized as staff left the project to care for themselves or for families. The loss of staff coupled with onboarding new staff detracts from the overall project velocity as resources are pulled away to train and mentor new staff. With the complex and domain specific requirements, new staff do not reach peak capacity for several sprints.



During FY 2020-21, the SSR team continued to refine and prioritize the remaining work, known as the product backlog, for building the SACS system. In the last quarter, the team began working with the CDE to ensure that the highest priority items would be worked on in a ranked order that aligned with the end user and the CDE's needs. When managing the product backlog, how quickly a work item can be completed is weighed against the business value and the timing of the work along with any dependencies. By the end of FY 2020-21, the assessment of work items was nearly complete with less than 5% of the project scope remaining to be discussed. The CDE and FCMAT/CSIS project management teams, along with oversight consultants, in their ongoing risk management efforts escalated contingency and mitigation efforts to counteract the negative effects of these compound events. Analysis and discussion between the two organizations in May through July led to the concept of a scoped release plan, including a UAT candidate, based on CDE's ranking of work items in August.

The SSR team also completed activities from the User Outreach Plan approved in the prior year and instructional design activities related to the User Training Plan. The development of the User Guide is a key asset to end user training. The goal of the Outreach Plan is to build a bridge between end-users and the SSR project team during development and implementation and to build awareness and increase knowledge about the new system. The SSR team collected and evaluated feedback from participants who attended SSR outreach meetings offered during outreach events.

The SSR team facilitated brief informational sessions virtually at various partner agency events and collected the following metrics:

Event	Number of Attendees (approx.)	Questions Asked	Follow Up Emails	User Interest in End User Testing
CalCPA Conference April 2021	100	1	0	0
BASC Meeting May 2021	60	3	0	0
SACS Forum May 2021	375	8	2	0
ESSCO Meeting June 2021	85	2	0	0

3.1 Project Management Plan

In December 2019, the CDE approved the updated FCMAT/CSIS project management plans tailored to meet the specific needs of the SSR Project (Deliverable 1). The SSR Project Management Plan (PMP) was developed consistent with the Department of Technology, California Project Management Office, California Project Management Framework (CA-PMF) and best practices detailed in the Project Management Institute's Project Management Body of Knowledge (PMBOK). The PMP includes subsidiary management plans associated with specific aspects of the SSR project, for example, project schedule management, communications management, and scope management. The SSR team developed standalone project management plans consistent with anticipated level of effort for the project and to match the SSR project needs. These standalone plans include:

- Requirements Management;
- Quality Management;
- Risk Management;
- Issue Management; and
- Implementation Management.*

In January 2020, the CDE and FCMAT/CSIS project management team agreed to review the plans annually and to update as needed.

*As the SSR Project approaches Go-Live, the CDE and FCMAT/CSIS project managers are working collaboratively to build and expand the Implementation Management section of the PMP so that the project team could think through critical components well before implementation.

3.2 Project Work Plan

The SSR Project Work Plan defined the scope of work and an estimated timeline for the completion of work scheduled during FY 2020-21. The CDE approved an updated Project Work Plan in May 2020 as an update to Deliverable 2. After the CDE approved the Project Work Plan, the SSR team held working sessions to continue definition of more detailed project tasks. As a first step, the team reviewed and refined the work breakdown structure (WBS) to divide deliverables and project work into manageable components. Using agile software development methodology, activities were identified, grouped by category or work type, and an estimated timeframe established. The SSR team then decided upon a

logical sequence based on dependencies between tasks, providing sufficient interaction and coordination for opportunities to solicit input from CDE to ensure timely work completion.

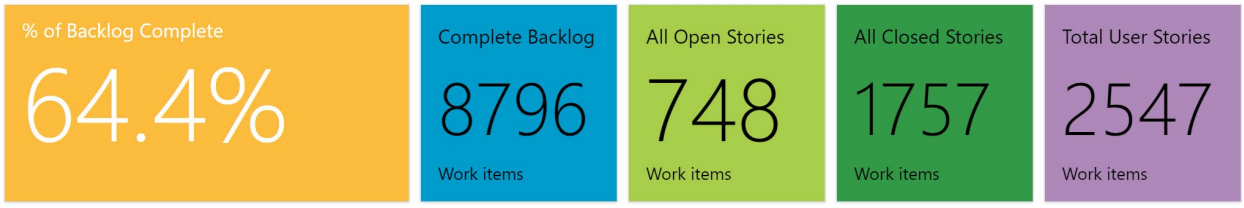
The team completed most work planned for FY 2020-21 with Sprint 42 concluding on June 29, 2021. Below are major work categories, their percent complete, along with baseline start and finish dates.

Task Name	% Complete	Baseline Start	Baseline Finish	Actual Finish
Approval of Requirements Packets	90	7/1/20	11/16/20	
MOU Approval (Amendment 1)	100	7/2/20	1/21/21	1/21/21
Annual Executive Meeting	100	2/16/21	2/25/21	2/25/21
Submit FY 2021-22 SOW to CDE	100	4/20/21	4/30/21	5/13/21
Annual Report submitted to the CDE	100	6/28/21	6/28/21	8/31/21
Deliverables	**100**	**7/1/20**	**2/10/21**	**2/10/21**
CDE Approval of System Technical Guide (DEL-9)	100	10/12/20	1/11/21	1/11/21
CDE approval of Knowledge Transfer Plan (DEL-11)	100	1/26/21	1/26/21	1/26/21
Requirements Traceability Matrix (RTM) (DEL-12)	100	11/5/20	2/10/21	2/10/21
FY 2020-21 Sprints	**100**	**7/7/20**	**6/29/21**	**6/29/21**
Sprint #26	100	7/7/20	7/7/20	7/7/20
Sprint #27	100	7/8/20	7/28/20	7/28/20
Sprint #28	100	7/29/20	8/18/20	8/18/20
Sprint #29	100	8/19/20	9/8/20	9/8/20
Sprint #30	100	9/9/20	9/29/20	9/29/20
Sprint #31	100	9/30/20	10/20/20	10/20/20
Sprint #32	100	10/21/20	11/10/20	11/10/20
Sprint #33	100	11/12/20	12/8/20	12/8/20
Sprint #34	100	12/10/20	1/12/21	1/12/21
Sprint #35	100	1/14/21	2/2/21	2/2/21

Task Name	% Complete	Baseline Start	Baseline Finish	Actual Finish
Sprint #36	100	2/4/21	2/23/21	2/23/21
Sprint #37	100	2/25/21	3/16/21	3/16/21
Sprint #38	100	3/18/21	4/6/21	4/6/21
Sprint #39	100	4/8/21	4/27/21	4/27/21
Sprint #40	100	4/29/21	5/18/21	5/18/21
Sprint #41	100	5/20/21	6/8/21	6/8/21
Sprint #42	100	6/10/21	6/29/21	6/29/21
IPOR Reports	100	7/1/20	6/18/21	6/18/21
IV&V Reports	100	7/1/20	6/15/21	6/15/21

3.2.1 SSR Project DevOps Dashboard

The SSR Project uses Microsoft DevOps for application development lifecycle management as software features and components are designed, built, tested, and deployed. One feature of this tool is the DevOps Dashboard which provides a snapshot of project work, also known as the product backlog. The dashboard below focuses on the project's total backlog of software development work in the form of user stories.



As of the June 30, 2021, approximately 64% of the backlog work has been completed. The SSR project backlog included:

- 8,796 work items including user stories and business rules
- 748 open user stories, including stories with status of new, active, or resolved
- 1,757 closed user stories, including completed stories that have been developed and tested
- 2,547 total user stories

A user story is an informational, natural language description of one or more features of a software system, written from the perspective of a user of a system. User stories transition through several statuses within the project. When a user story is created, the status is "new." The most direct path for a user story is new, active, resolved, and closed. User stories also can be removed. Below is a full list of statuses:

- Active: user story currently being developed and tested
- Closed: user story developed and tested
- Open: user story already groomed or ready to be groomed
- Resolved: user story ready to be tested
- Removed: user combined with another user story for test and development efficiency

These indicators are used to monitor the relative progress in software development. Open user stories represent the volume of work remaining on the project. As the SSR project team completes more of the application software, more user stories are closed. Building on the work of prior years, the SSR team made substantial progress toward building the application. During FY 2020-21, the team built many of the SSR forms and continued to implement the workflow, validations, exports, and reporting requirements. The SSR team also established a new source code repository for the system's User Guide and started to build content. The User Guide will be completed as the software is finalized. The growth in software code stemming from the implementation of the SSR requirements as system features and functionality are completed directly correlates to the volume of work for the quality assurance team.

The SSR project uses an automated testing approach that ensures that all application features are tested via automated processes prior to promoting the software releases from lower to upper SSR environments. These tests simulate users in the system and are an automated regression tool to prevent future code from breaking previously delivered features. In 2019-20, the test team coded 3,000 automated tests, and in 2020-21 the team increased that number to over 6,500 tests in the test suite. As the test suite grew, the size and scale of the test suite was becoming a performance issue. Tests of the application would take more than 24 hours to complete, causing a delay in how quickly the team could address test findings. To resolve this issue, the test team rearchitected the test solution to execute all tests in 11 hours. Subsequent re-engineering enabled the full suite of tests to execute within two hours. The re-engineering process also enabled a finer grained insight into areas of the application with breaking changes. This allowed the development team to be more responsive to ensure a greater consistency in quality.

3.2.2 SACS Application Environments

As articulated in the SSR Proposal, the development, test, and staging environments for the SSR solution are hosted in a virtual environment within the FCMAT/CSIS data center. Each environment is built using the latest general release of VMware vSphere technology for virtualization.

Ongoing updates to the underlying software technologies used to build the SACS application meant that the SACS team needed a new strategy to prevent those updates from constantly breaking the software as it was being developed. To better control the introduction of those underlying software updates to the development environment, the team implemented a sandboxing strategy. During 2019-20 the SSR team updated the pre-sandbox (used for large changes like operating system updates), sandbox (used

for development and integration testing), and test environments. Updates to the environments included updating the server operating systems to the latest versions, updating the Kubernetes version, and updating all the images used for the microservices. In this manner, all technology components utilize the most current operating system versions and .NET versions available.

In FY 2020-21, the SSR team continued to make ongoing technology updates to ensure the environments were utilizing the most current versions available. In preparation for the scaling and performance needs for the production environment, the team rebuilt the development and testing environments to automatically scale and load balance dynamically in response to system load. This effort provided a high-availability environment to support the CDE's system acceptance activities.

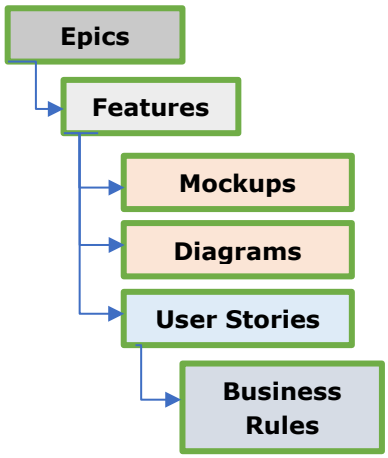
Future environments will be built and brought online as scheduled in the Project Work Plan, including:

- Staging Environment. The Staging Environment will be accessible by CDE-authorized users to beta test new features prior to implementing them in the Production Environment.
- Production Environment**.** The system's production architecture will follow an n-tier design consisting of separate layers for web tier/presentation layer, application tier/app services API, and persistence tier/database.

Procurement for the staging and production hardware have been initiated to minimize global supply chain impacts from COVID-19 of scarce chipsets and other computing components.

3.2.3 Requirements

The SSR Proposal included approximately 300 requirements. Throughout much of FY 2019-20, the project's business analysts (BAs) worked diligently to continue vetting business requirements with the CDE subject matter experts (SMEs) to ensure intended scope was completely decomposed into a backlog of actionable work items for developers and testers. The relationship of the work items in the backlog can be best represented by the following diagram:



The following key metrics quantify requirements efforts:

- 8,796 – total number of items in the backlog, including epics, features, diagrams, mockups, user stories, and business rules created from the joint application design (JAD) and requirement refinement sessions
- 2,547– total number of user stories in the backlog; user stories are the actionable work items assigned to developers during a sprint and the foundation of requirements traceability
- 6,104 – total number of business rule (BR) work items in the backlog; Every user story is broken down into measurable BRs and vetted with the CDE SMEs
- 100 – total number of forms that required reverse engineering to validate requirements. BAs read and analyzed Video Title Set (VTS) source code files to determine undocumented business rules
    - 1023– total number of form user stories representing the outcome of the reverse engineering effort
- 251 – total number of validations that required reverse engineering to validate requirements. BAs read and analyzed Video Title Set (VTS) source code files to determine undocumented business rules
    - 132– total number of Input Form Checks (IFCs)
    - 119 – total number of Technical Review Checks (TRCs)
- 37 – total number of states created for new workflow process of entities promoting, approving, and publishing datasets across various reporting periods
    - 12 – total number of queues designed to give various entities custom views based on custom business rules surrounding security roles and workflow states
    - 1229 – total number of BRs created and analyzed to ensure consistency with new complex workflow and queue management functionality

3.3.1 Requirements Traceability Matrix

The ability for project sponsors and stakeholders to track requirements is known as traceability. Using the California Department of Technology Requirements Traceability Matrix as a guideline, the BAs

created a Requirements Traceability Matrix (RTM) to track SSR requirements from beginning to end. The BAs actively maintain the matrix to ensure the system satisfies the specified requirements.

The completed SSR Project RTM is a deliverable of the SSR project and was completed as scheduled in the SSR Workplan. An updated version will be provided to the CDE in the next year.

3.3.2 Completed Requirement Packets

FCMAT/CSIS grouped requirements within a functional area of the system as a requirement packet. This organization enables the CDE to review and approve sets of requirements, business rules, diagrams, and mock-ups for the SSR system in context. In 2020-21, twenty requirement packets were completed:

1. ALT Submission
2. Export
3. PCA
4. Admin-SELPA List
5. SELPA Submission
6. Admin – State Element/State GL
7. Application Data – Submission Version History and Restore
8. Application Data – Audit Log
9. Admin – Entity Lists
10. Import – User Data Input Review and Verify SACS Code Features
11. Dashboard – Compare and Share Datasets
12. "[Role] determines who will make the edits when current status is 57 or 34 -Dataset Approval Role Queue" Packet
13. Revise Single District County District Workflows
14. Communications
15. Multi-Year functionality/System versioning
16. Auditor, Resubmission, Recall
17. TRCs
18. IFCs
19. Reports
20. November Misc. (PCRGO/Export II/Publishing)

Once analysis and grooming are completed, an estimated total 7,500 business rules will have been added to the SSR Project backlog, specifically for forms development and testing. This estimate is based on the current number of business rules at 6,104 with 193 stories still left to be groomed.

4 Budgeted and Actual Expenses for FY 2020-21

The SSR project's one-time costs include all personnel related costs to develop and deliver the custom-designed software and one year of warranty, as well as the hardware and software specific to the development and delivery of the SSR solution. During the approximately three years of developing the

SSR solution, data center hosting, cloud storage for disaster recovery (DR), and software licenses are treated as one-time costs. The total fixed price of the project is $11,478,457. The payment schedule for the deliverables includes a 10% withhold for the project, payable at system acceptance (Deliverable 14). See Appendix A for the multi-year deliverable and payment schedule for the current year.

The SSR project was initiated in fiscal year 2018-19 through the annual state appropriation of $3,616,000 based on costs estimated at the time the SSR proposal was developed (fiscal year 2017-18). Project cost estimates in the SSR proposal were developed in compliance with analogous estimates, bottom-up estimation, and expert judgment methods, using the best information available at the time. These cost estimates and the method for how they were derived were provided to the CDE and accepted through the SSR Project proposal process. State appropriations in 2019-20 were $3,616,000 and in 2020-21 were $3,156,560. Ten percent of appropriations are withheld pending system acceptance.

In the initial 2018-19 budget, a contribution of $314,249 was anticipated to cover the difference between the state appropriation and budgeted costs. However, the contribution was not necessary as some expenses were deferred during the first quarter, such as expenses for the usability engineer, developers, and testing staff as business analysts performed requirements analysis required prior to initiating software development activities. This staged approach resulted in a more efficient utilization of human resources. Procurement of operational equipment, hardware and software used by these individuals also shifted accordingly. The approved project workplans for 2018-19 and 2019-20 reflected this approach. The CDE approved the restructured and revised 2018-19 Project Work Plan in October 2018, and the 2019-20 Project Work Plan in August 2019. In 2019-20, the staffing plan retained this conservative approach.

The emergence of COVID-19 brought new conditions to project operations and a reassessment of planned work and planned expenditures. Travel was immediately curtailed. Technology was pushed to the cloud where possible to facilitate uninterrupted forward progress toward achieving project deliverables. With the state and LEAs conducting business under the “new normal”, the prospect for increasing engagement with LEAs on workplan activities as they navigated pandemic-related challenges became dim. As a result, the project deferred 2019-20 expenditures where the work product was directly related to LEA use or participation, for example, procurement of additional equipment and services for user acceptance testing and production environments, creation of the User Guide and convening user group meetings.

During the pandemic-induced stay at home orders, staff retention became an increasing concern since major tech companies offered telework and drew staff away from the smaller Sacramento market to the Bay Area with higher pay. In FY 2020-21, the most significant expense continued to be staffing. The Budget Change Proposal submitted by the CDE was approved and enabled FCMAT/CSIS to maintain staffing levels. Several shifts decreased and increased the month-to-month staffing expense with the overall expense for the year higher than prior year levels as the team worked aggressively to complete the activities in the workplan. The increase in expense also included an additional developer who was hired in the second half of the fiscal year to mitigate against the risk of losing capacity directly due to

COVID-19 and indirectly with higher rates (compared to those anticipated in the Proposal) needed for staff retention due to the tightening market conditions.

The total for rents, leases, and repairs was budgeted at $115,406 based on lease agreements. This amount includes a small amount budgeted for tenant improvements in the shared areas of the building where the landlord recovers these costs from tenants each year; the actual amount varies from year to year. In 2020-21, the actual expense was unexpectedly lower than the beginning budget amount.

The budgeted and estimated actual expenses in Appendix B shows an ending balance that may shift as year-end closes and as adjustments are made to the current year budget.

5 Work planned for FY 2021-22

The extenuating circumstances presented by COVID-19 will be weighed as FCMAT/CSIS and CDE plan work for 2021-22 along with constraints from project scope, timeline, and staffing.

From early planning in the proposal phase, through long term-planning, and other leadership meetings with the CDE, FCMAT/CSIS understands that the CDE's overarching goals for 2021-22 are the timely completion of the following:

- Updated Project Work Plan, with revisions for COVID-19 contingencies
- Updated Detailed System Design Document – Deliverable 3 (DEL 3)
- Updated System Technical Guide – Deliverable 9 (DEL 9)
- System Readiness – Deliverable 10 (DEL 10)
- Updated Knowledge Transfer Plan – Deliverable 11 (DEL 11)
- Updated Requirements Traceability Matrix (RTM) – Deliverable 12 (DEL 12)
- System Go-Live – Deliverable 13 (DEL 13), with revisions for COVID-19 contingencies
- System Acceptance – Deliverable 14 (DEL 14), with revisions for COVID-19 contingencies
- All 2021-22 tasks within the Project Work Plan
- A new or amended Memorandum of Understanding (MOU) and a draft statement of work, including a workplan, to address Maintenance and Operations services after Go-Live

FCMAT/CSIS Major Work Activities in Support of Project Expectations

The major work for FCMAT/CSIS in 2021-22 to support these project expectations include:

- Maintain a working relationship between the FCMAT/CSIS and CDE teams, as well as the independent consultants to ensure the SSR project is being developed to meet the needs of stakeholders.
- Continue designing and documenting a system that will meet the requirements of the SSR solution.
- Continue monitoring the SSR project's development to ensure that the project remains within scope, adheres to the delivery timeline, and does not exceed cost estimates.

- Continue implementing automated testing and refining requirement/software development/testing processes to ensure quality outcomes in an efficient manner.
- Continue providing effective management, office support, and technology services to FCMAT/CSIS staff.

With the assistance of the independent project oversight consultants and independent verification and validation consultant in managing and monitoring project risks, adjustments to the above planned work will be documented in an MOU and Statement of Work.

6 Conclusion

FCMAT/CSIS completed a significant amount of SSR project work in 2020-21. Appendix E provides metrics of work items by quarter. The project team completed requirements analysis and clarification, during which a sizeable number of forms, workflow, and technical review check functionality was developed and tested, and the User Guide. The work FCMAT/CSIS accomplished in prior years is a stable foundation for the work remaining. The CDE and FCMAT/CSIS continue to enjoy a close and supportive working relationship as partners on the SSR project and will continue to work collaboratively in 2021-22.

Appendix A – Deliverables and Payment Schedule for FY 2020-21

A-1 - Deliverable Cost

	Deliverable ID	Deliverable Name	Percent Cost of Total One-Time Costs	Percent of Payment per Deliverable	Amount of Payment per Deliverable
2020-2021	DEL-9	System Technical Guide	5.0%	4.5%	$516,531
	DEL-11	Knowledge Transfer Plan	5.0%	4.5%	$516,531
	DEL-12	Requirements Traceability Matrix (RTM)	5.0%	4.5%	$516,531
				Total Deliverable Cost	**$1,549,593**

A-2 – Payment Schedule

	Payment Schedule	Payment Date	Payment Amount
2020-2021	1st Quarter	August 30, 2020	$789,140
	2nd Quarter	October 1, 2020	$789,140
	3rd Quarter	January 1 2021	$789,140
	4th Quarter	April 1, 2021	$789,140
			Total $3,156,560

A-3 – Withhold Amount – Payable at System Acceptance

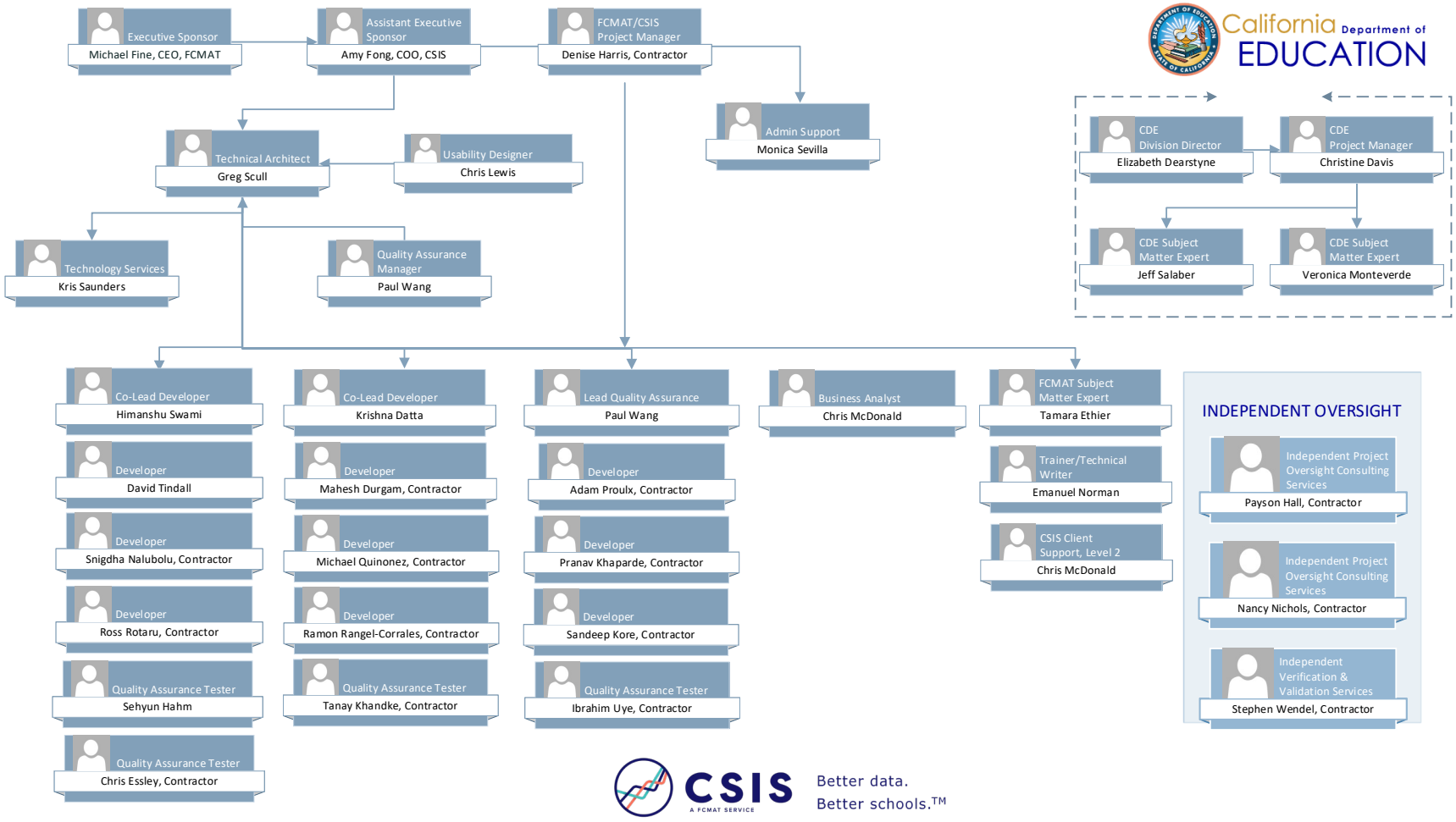
	Deliverable ID	Deliverable Name	Percent Cost of Total One-Time Costs	Percent of Payment per Deliverable	Withhold Amount
2020-2021	DEL-9	System Technical Guide	5.0%	4.5%	$57,392
	DEL-11	Knowledge Transfer Plan	5.0%	4.5%	$57,392
	DEL-12	Requirements Traceability Matrix (RTM)	5.0%	4.5%	$57,392

Appendix B – Budgeted and Actual Expenses for FY 2020-21

	FY 2019-20 Unaudited Actuals	FY 2020-21 Beg. Budget	FY 2020-21 Est. Actuals*
REVENUES			
Beg. Balance - Prior Yr. Carryover	**1,186,636**	**1,321,272**	**1,320,988**
Current Year Appropriation	**3,616,000**	**3,156,560**	**3,156,560**
TOTAL REVENUES	**4,802,636**	**4,477,832**	**4,477,548**
EXPENDITURES			
Classified Salaries	**692,180**	**685,069**	**695,297**
Employee Benefits	**264,792**	**266,086**	**268,202**
Supplies & Non-Cap. Equip.	**29,371**	**69,874**	**981**
Services, Other Operating Exp.	**2,314,527**	**3,148,102**	**3,169,692**
Travel & Conference (5200)	***2,991***	***10,000***	***-89***
Rents, Leases, & Repairs (5600)	***110,160***	***115,406***	***111,298***
Direct Costs (5710)	***74,905***	***53,478***	***131,200***
Professional/Consultant Services	***2,126,472***	***2,959,918***	***2,925,284***
Consulting Services (5800)	*2,097,915*	*2,784,649*	*2,889,090*
Software Licenses (5800.41)	*28,556*	*146,850*	*36,194*
Job Postings (5800.42)	*0*	*5,000*	*0*
Hardware Maintenance (5800.45)	*0*	*6,800*	*0*
Hold for Unexpected Expenses (5800.99)	*0*	*16,619*	*0*
Communications	***0***	***9,300***	***0***
Capital Outlay	**0**	**60,000**	**0**
Switches & Routers	*0*	*0*	*0*
Server Refresh	*0*	*60,000*	*0*
Indirect Costs	**165,044**	**229,301**	**207,574**
Debt Service	**15,450**	**19,400**	**19,313**
Storage Area Network	*15,450*	*19,400*	*19,313*
TOTAL EXPENDITURES	**3,481,364**	**4,477,832**	**4,359,059**
Ending Balance	**1,321,272**	**0**	**118,489**

**projected as of 8/11/21*

Appendix C – SSR Project Organizational Chart for FY 2020-21



SACS System Replacement (SSR) Project Organization Chart

Appendix D – Open Change Requests as of June 2021

There is one open change request as of June 2021: SSR-CR-006, Removal of Functional Requirement WF02, System GUI for Authorized CDE Users to Define and Maintain Rules, Conditions, and Exceptions.

The purpose of this CR is to remove General Workflow (WF), Functional Requirement WF02: The system must provide a GUI for authorized CDE users to define and maintain rules, conditions, and exceptions that apply to each workflow step and allow or prevent specific user access and capabilities at each step.

The CDE requested the removal of this requirement during the Weekly SSR Requirements Refinement Meeting held on Thursday, January 14, 2021. During the meeting, the team discussed how workflow state changes may cause extensive ripple effect to testing, specifically, automation, and regression testing which would be rendered useless. Instead, the CDE agreed to manage this work via a change management process. The FCMAT/CSIS BA worked with the DevOps team to write US and BRs for the CDE's review and approval. Currently, this CR is under CDE internal review.

Appendix E – Work Item Metrics for FY 2020-21

As reported through independent oversight (IV&V), count of work items by quarter:

Work Item	Quarter 1 Q1 Jul – Sep	Quarter 2 Q2 Oct – Dec	Quarter 3 Q3 Jan – Mar	Quarter 4 Q4 Apr – Jun
Requirements (actual)	292	292	292	292
User Stories (approximate)	2,500	2,610	2,760	2860
Business Rules (approximate)	5,500	5,610	5,800	6200
Test Cases (approximate)	4,300	4,500	4,600	5,100

The data in the table above represent total activity, for example, open and closed user stories measured at the end of each quarter during FY 2020-21. At the end of Q1 open and closed user stories was approximately 2,500. At the end of Q4, in comparison, the count of open and closed user stories was approximately 2,860. The count of open and closed user stories between Q3 and Q4 remained relatively stable even with a reduced capacity due to an unexpected staffing shortfall.

The count of business rules was relatively stable between Q1 and Q2 as the project team has finalized requirements. During Q3, as the team continued to refine user stories, the count of business rules increased to reflect mutual understanding of functional requirements. Upon FCMAT/CSIS and CDE agreement of the user stories and business rules, the project team will have a shared and detailed understanding of the CDE's business needs which will drive development for FY 2021-22.

The count of test cases continues to increase when more test automation code is developed. During FY 2020-21, The QA team wrote an average of 100 new test cases per sprint.

Appendix F – Glossary of Terms

Term	Description
Agile	Agile software development calls for keeping code simple, testing often, and delivering small, functional bits of the application as soon as they are ready. The focus is to build a succession of parts, rather than delivering one large application at the end of the project.
Backlog	SSR project backlog work items types include epics, features, user stories, business rules, and tasks traceable to requirements. The backlog is used to plan, prioritize, and organize SSR project work.
Business Rule	Defines some aspect or constraint of the SSR system intended to assert business structure or to control the behavior of the system.
CDE	California Department of Education.
CDT	California Department of Technology (formerly Office of Technology Services and Department of Technology Services – DTS); data center for State and local government agencies. Source for technology project templates.
COE	County Office of Education. Functionally, could also go by "county superintendent of schools" or "county department of education."
CSAM	California School Accounting Manual. Section 300 includes an overview of the standardized account code structure (SACS), explains the SACS account string, and defines each of the seven components or field codes, relevant to the SACS system software.
CSIS	California School Information Services.
Data Entry Screen	A screen used for the purpose of entering data that is then stored in the database, and which then may be used to populate forms or reports.
Data Set	The complete set of GL and supplemental data that a reporting entity will import or key enter into the system and work with until it is ready for submission to its reviewing agency. The data set is in a preliminary stage and considered the "working" version of the reporting entity's data, not yet ready for submission to its reviewing agency. A reporting entity may have more than one version of its data set, may work with multiple data sets simultaneously, and may share or provide access to others, including CDE or its reviewing agency, to assist with troubleshooting, prior to the data set becoming a submission.
Data Type	The identifying characteristics of a set of financial data submitted by a reporting entity to its reviewing agency. Valid types include "Budget," "Estimated Actuals," "Unaudited Actuals," "Original Budget," "Board Approved Operating Budget," "Actuals to Date," and "Projected Year Totals."
DB	Database.
DBMS	Database Management System.

Term	Description
DED	Deliverable Expectation Document.
DSD	Deliverable Submission Document.
Entity	The specific agencies involved with statutory financial reporting requirements. Example entities include individual LEAs, Charter Schools, COEs, JPAs, the State Board of Education, and CDE.
Entity Type	The categorization of an entity based on its function. Example entity types include: "School District," "County Office of Education," "Charter School," and "Joint Powers Agency."
Entity Subtype	A classification of entities within a specific type. Example entity subtypes include: "District Charter School," "County Charter School," "State Board Charter School," "Statewide Benefit Charter School," "All Charter District," and "Com Administration District."
eTransfer/eTran	eTransfer component of SACS System used by COEs to electronically certify and transmit LEA year-end UA financial data to CDE.
Exceptions	Reporting entity data that are flagged by a TRC as being anomalous. There are three levels of severity for an exception: fatal, warning, or informational, each of which requires its own level of response from the reporting entity.
FAIS	CDE's Office of Financial Accountability and Information Services; responsible for the SACS program, the collection, review, and dissemination of LEA financial data.
FASD	CDE's Fiscal & Administrative Services Division.
FCMAT	Fiscal Crisis & Management Assistance Team assists and provides guidance to local educational agencies in the areas of business and financial management practices.
Feature	A piece of functionality that delivers business value to a client.
Form	A simulated document on a screen that is used to capture data. In most cases, when Forms are printed, they look the same in print as they do on the screen.
Formal Submission/Formal Submission Data Set	A submission data set that is submitted to CDE for review to satisfy statutory reporting requirements. A reporting entity may only have one formal submission in review with CDE at any given time.
Format/Reporting Format	The structure of the data a reporting entity submits to CDE for review, either the SACS format or the Alternative format. All traditional LEAS must report in the SACS format. Charter schools reporting separately from their authorizing LEA may report in either the Alternative format or the SACS format.
FY	Fiscal Year.
GAAP	Generally Accepted Accounting Principles.

Term	Description
GASB	Governmental Accounting Standards Board.
G/L Data	General Ledger data from the LEA's local financial system that is imported or key entered into the new system and is the primary component of the LEA's data set.
Graphical User Interface (GUI)	A system's front-end interface that uses windows, icons, images, and menus, rather than textual commands for user interaction.
Historical Versions	Archiving a selected version of the full business functionality of the entire SSR at a given point in time such that when it is accessed it performs exactly as it did when the version was current.
ICR	Indirect Cost Rate.
IFC	Internal Form Check, a form of validation of LEA-entered financial data. Some IFCs may trigger warning or fatal TRC exceptions that need to be explained or cleared before CDE will accept the submission, unless the LEA is given rare pre-authorization to deviate.
IT	Information Technology.
ITIL	Information Technology Infrastructure Library.
JPA	Joint Powers Agency.
Kanban	A visual tool that communicates a large amount of project information about a development team.
KCSOS	Kern County Superintendent of Schools.
LAN	Local Area Network.
LEA	Local Educational Agency, such as school districts, county offices of education, joint powers agencies, and charter schools.
OTech	Office of Technology Services (currently California Department of Technology; formerly Department of Technology Services – DTS); data center for State and local government agencies.
Phase	A portion of the business life cycle during which specific workflow steps and business checks will occur. Examples include: Import, G/L.
PMBOK	Project Management Body of Knowledge.
PMI	Project Management Institute.
PMO	CDE's Project Management Office.
PMP	Project Management Plan.
Report	A system output using data from the database. Reports can be output to screen, file, or printer and may show data in a variety of layouts.
Reporting Period	A defined point in the annual reporting cycle. Valid values include: "Budget, July 1," "Unaudited Actuals," "First Interim," "Second Interim," "End of Year Projection ("Third Interim")."
RFP	Request for Proposal.

Term	Description
SACS	Standardized Account Code Structure, a standardized structure for the chart of accounts that is used statewide to collect, store, and report on LEA financial data. The structure includes seven distinct fields or dimensions: fund, resource, project year, instructional goal, function, object, and school. Details of this structure are in CSAM Procedure 301, referenced in Appendix G Project Library.
SACS Format	The format in which traditional LEAs must report their financial data. One of the two optional formats in which charter schools may report their financial data. Data reported in the SACS Format is data that follows the standardized account code structure (SACS).
SACS Maintenance	One of the four components of the SACS System. The component used for maintaining the validation tables and some business rules.
SACS Query	Also known as SACS Resource Code Query. A CDE Web site used by LEAs and CDE program staff to obtain program and accounting information and guidance. It receives output from the SACS Maintenance component.
SACS Software	One of the four components of the SACS System; the primary component used by LEAs to enter and work with their G/L and supplemental data prior to submission to their reviewing agency. Also used by CDE with the Workflow component to review LEA submissions, to troubleshoot, and to assist LEAs.
SACS System	The four current components that collectively support the collection, review, and dissemination of LEA financial data: SACS Software, SACS Maintenance, SACS eTransfer, and SACS Workflow.
SACS System Replacement (SSR)	Used in the SOW to refer to the future system until a permanent name is determined.
SAM	State Administrative Manual.
SARC	School Accountability Report Card.
SBE	State Board of Education.
Screen	Any viewable interface between the system and a user. A screen may be used to display information only (e.g., viewing query results or a report on the screen); may solicit input (e.g., system menus), may execute a function (e.g., run TRC or import) or may be for the purpose of maintaining system data (e.g., entering UA data or updating validation tables).
SDLC	System Development Life Cycle.
SELPA	Special Education Local Plan Area.
Severity of Check	Categorization of a check applied to a data set. Severity values are “Fatal,” “Warning,” “Informational,” and “None.”
SFSD	CDE’s School Fiscal Services Division.
SIT	System Integration Testing.
SLO	Service Level Objective.

Term	Description
SME	Subject Matter Expert.
SOP	Standard Operating Procedure
SOW	Statement of Work.
SPR	Special Project Report.
SSL	Secure Socket Layer.
SSPI/SPI	[State] Superintendent of Public Instruction.
Submission Data Set; Submission; Submission Data; Data Submission	A reporting entity's completed data set, consisting of G/L data, supplemental data, and TRC results and explanations, submitted by the reporting entity to its reviewing agency to satisfy statutory reporting requirements. A submission data set may be for Budget, UA, or Interim reporting periods.
Submit; Submitted	A reporting entity's Budget, UA, or Interim reporting period submission data set that has been sent to its reviewing agency to satisfy statutory reporting requirements. This begins the first step of the workflow process.
Supplemental Data	Data that is not G/L data, but which is a required part of the submission data set. Most supplemental data are key entered after the G/L data has been imported or entered into the system. Examples include Average Daily Attendance, counts of buses operated and pupils transported, and TRC Log and TRC explanations for exceptions.
Successful/Successfully	"Successfully developed," "successfully implemented," and "successfully managed" are all defined to mean that the system is in production and is being utilized by the users as the system of record.
System Architecture	The structure of a system, where *system* architecture represents a collection of components that accomplish a set of functions. System architecture is focused on organizing components to support specific functionality.
Traditional LEAs	School districts, county offices of education, and certain JPAs. There are approximately 1,100 in the State, a stable number, and their reporting requirements are relatively stable. Does not include charter schools.
TFS	Microsoft Team Foundation Server.
Technical Review Checks (TRCs)	The tests against which a reporting entity's data is run to validate it against the current set of business rules, to assist the LEA in reviewing its data and determining whether the data set would be acceptable for CDE review or not. Most are hard coded into the current SACS System and either pass or return exceptions (Fatal, Warning, or Informational). Examples of resulting outputs are the TRC report and the TRC log.
TRC Log	The output of a TRC on a reporting entity's submission data set. The log identifies each check that was run, its severity, key field values, and the results of the check.
TRC Report	The results of the TRC run against a specific data set, which may be displayed on screen and printed. The TRC Report includes explanations entered by the user.

Term	Description
TRC Status	The assessment of whether a reporting entity's data set is ready for CDE review after all relevant TRCs have been run against the data. The TRC status will be either acceptable or not acceptable for CDE review.
TRC	See Technical Review Checks.
TSD	CDE's Technology Services Division.
UA	Unaudited Actual (in reference to financial reports). The year-end unaudited actual reporting period data that FAIS collects from reporting entities. To meet statutory timelines, FAIS collected unaudited, rather than audited, data.
UAT	User Acceptance Testing: the last phase of the software testing process, which directly involves SSR users.
UI	User Interface.
URL	Uniform Resource Locator.
User-configured/configurable	Used in the context of business rules, "user-configurable" and "user-configured" refers to the ability for an authorized user to use a GUI to define and modify data values upon which business rules are based, and have the system behavior change when the values change, rather than having to make permanent changes in program code.
User Story	An informational, natural language description of one or more features of the SSR system written from the perspective of the end user.
Validation Tables	Tables that identify valid SACS codes and combinations used in G/L data, along with date ranges that define validity.
WAN	Wide Area Network.
Warning Exceptions	A failed business check that is categorized with "Warning" severity. Warning TRC exceptions require agency response.
Work Item	A category used to describe a single unit of work.
Work Item Types	A WIT is a descriptive label for work items. The SSR project uses WITs to include user story and business rule.