EDFacts Shared State Solution

VOLUME 2, ISSUE 2 JULY 15, 2013

ESP Solutions Group, Inc.

Highlights

- ***Fully Functional EDFacts System***
  - *Unit & aggregate staging data stores*
  - *ETL to EDFacts submission specifications*
  - *Submission file creation*
  - *Edit reports*
  - *Longitudinal archives & analytics*
- ***Developed with Partner SEAs***
- ***Fully Maintainable by the SEAs***
- ***No License Fee for the SEAs***
- ***Optional SEA Partner Association for Annual Updates and Shared Enhancements***
- ***Support Services Available from ESP***

Inside this issue:

ES3 Aligns to Common Education Data Standards

All EDFacts Submission Files Compared

This spring, Steven King, ESP's Chief Technical Architect, led a team from ESP in comparing the ES3 staging tables to CEDS. About 70% of the required fields matched with elements in CEDS. The mapping has been published on the CEDS website. Beth Young from QIP, the CEDS contractor, reviewed the mapping and is providing comments and suggestions for improvement. The CEDS team will use ES3 elements with no match in CEDS as input for CEDS Version 4.

After mapping the data elements in the EDFacts submission files using the CEDS Align Tool, the team uploaded the mappings to the CEDS website to make them available to any registered user.

ESP is supportive of the USED efforts to build the CEDS. King's team took the core staging tables from ES3 and entered those tables in the CEDS Align Tool. The tables and fields were described and a match was created between the ES3 field and the appropriate CEDS element. A summary of the level and type of alignment is identified in the table below. Where applicable, ESP modified the field names or field structure to better align with CEDS. ESP is working with CEDS staff to include elements in CEDS that are necessary for a state to complete their EDFacts reporting.

See a Demonstration of ES3 at the NCES Summer Data Conference in Washington DC, July 18-20, 2013.

Alignment of Definitions	% of Total
Identical in wording	44.3%
Identical in intent, with wording differences	11.0%
Identical in intent when aggregated or disaggregated	16.1%
Similar in intent, with wording differences	1.8%
Related only at a concept level, with differences in the intent	5.2%
No element definition available in the stakeholder data dictionary	1.8%
No alignment found	19.8%

ES3 Handles EDFacts Crunch Period

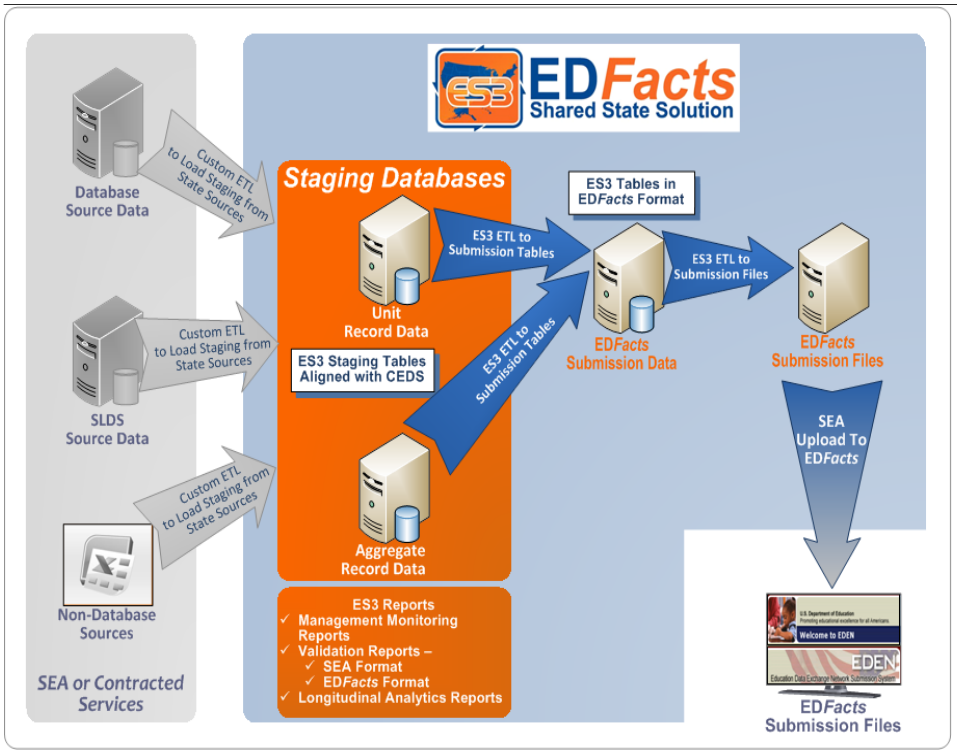
ES3 has worked hand-in-hand now through the crunch time in Missouri, South Dakota, Tennessee, and Idaho. SEAs have proven ES3 to be efficient, viable, and production-ready. SEAs have shown their reliance upon ES3 to be the only submission process, to being a parallel process, and to being a double check.

In addition to the first four SEAs participating in ES3, ESP has directly assisted five others over the years in submitting their EDFacts data. The best practices from those experiences have been incorporated into the ES3 design and processes.

The participation of multiple SEAs is essential to ensuring that ES3 is portable to any other SEA environment, compliant with all of USED's requirements, and responsive to SEA needs. This ensures that ES3 is a practitioner's tool.

Knowing what to have ready before the crunch begins is as important as managing the crunch time itself. For SEAs newly adopting ES3, the processes established by these early adopters will be golden.

ES3 Solution Flows from SEA Data Sources to EDFacts Uploads



For the EDFacts Coordinator, a solution is just a partial fix unless it encompasses everything from the rawest source file to the very final acceptance of a submission file by the EDEN/EDFacts system itself.

This high-level picture shows just that. The darker blue area outlines the common ES3 components across SEAs. Those in gray are unique to an SEA (performed by them or contracted).

Years of *EDFacts* experience have gone into refining a solution that can be shared across SEAs while still accommodating individual SEA needs.

How ES3 Evolved

The U.S. Department of Education automated state-to-federal reporting with the EDEN/EDFacts system. The task of compiling a state's data into compliant files for uploading was left to be solved by each state. Most of the core processes are duplicated within every SEA.

BIG ED COULD NOT DEVELOP AND MANDATE A SINGLE SOFTWARE PRODUCT FOR EVERY SEA. ES3 EVOLVED AS AN OPTIONAL STANDARD SOLUTION.

Many SEAs have looked across their borders over the years and wondered how many of their processes and software applications they could share—and by doing so save time, effort, and money. However, their time and resources were concentrated on meeting the immediate EDFacts requirements and deadlines; not on software product development.

The SEAs working with ESP consolidated best practices with development resources across their projects to change the dynamic. They are as follows:

- Microsoft tools are common, standardized, affordable, and easy to use.
- SEAs know enough about the EDFacts processes to pinpoint where the commonalities are and where the uniqueness of each SEA remains.
- ESP has enough clients to allow it to devote sufficient resources to building the common data model, databases, documentation, and ETL processes.
- The ES3 SEA Partnership Association model with an annual fee to support updates and on-going enhancements will be viable as enough states adopt a common architecture.

What are the common ES3 components?

- A user interface to manage the processes
- Two Staging Databases (allowing the SEA to ETL and process either unit or aggregate records and to transform unit records to aggregate) in SQL Server
- Three Types of Reporting (providing feedback to the EDFacts Coordinator, data providers, and analysts/decision makers) using SSRS
- EDFacts Submission Data Store (creating a longitudinal data system for verification and analytics)
- EDFacts Submission File Engine (creating EDFacts-compliant files for uploading)

Every SEA has a unique ETL into the staging databases from the data sources.

ED*Facts*/ES3 Integration into SLDS Solutions

ES3 should be an essential component of an SEA's SLDS solution. ES3 doesn't need to wait for the SLDS data warehouse to be complete and loaded with all ED*Facts* data sources. The ETL into ES3 will adapt annually as sources evolve.

ES3 was built based upon best practices for meeting the demands of ED*Facts* reporting. These include:

Keeping up with the updates; finding new and changed source data across the SEA; making changes to the local ETL processes; keeping the SEA data providers up-to-date (conducting an annual meeting, publishing an annual calendar, communicating requirements changes, communicating changes in processes); updating the submission file formats; creating/maintaining the data dictionary; creating error, edit reports for data stewards and providers; maintaining business rules.

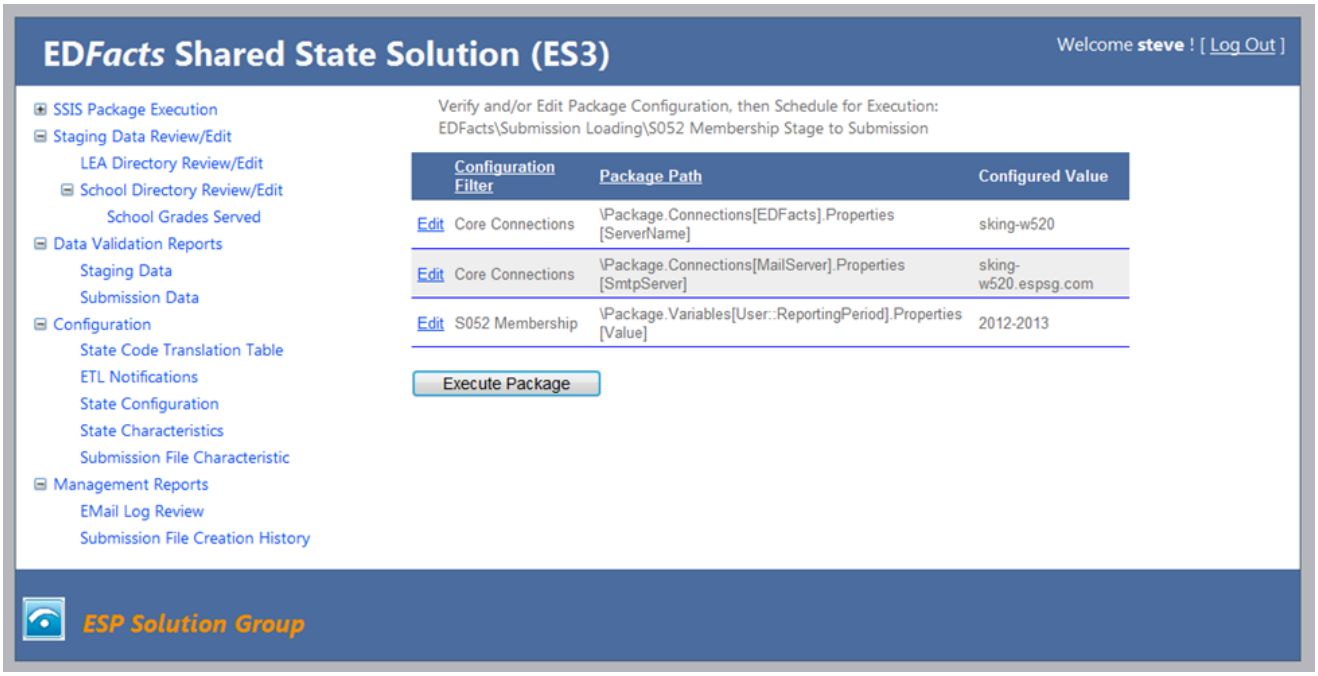
Tasks that seldom or never get done:

Creating a longitudinal data store of ED*Facts* submissions; creating enough edit reports; providing longitudinal analytics and reports; and creating a comprehensive training program for ED*Facts* data stewards and providers.

Tough job! These last three tasks have become the roadmap for ES3.

Integrating these into an SLDS solution is one of ESP's strengths. From establishing metadata standards to adopting data governance policies and procedures, ED*Facts* reporting must be considered every step of the way.

User Interface Manages Processes for ES3



Originally, ES3 used Visual Studio and/or SQL Server Management Studio to trigger the Integration Services packages. To alleviate the need for ED*Facts* coordinators to learn these power applications, or the state IT staff's nervousness about security issues around them, ESP designed a web front end. Built using standard .NET and ASPX tools, the web application gives an authenticated ED*Facts* coordinator access to manage the solution. Web pages exist for:

- editing the various configuration tables
- reviewing and editing staged data
- running staging data and submission data validation reports
- editing parameters for the SSIS packages and then firing them off

Individual stage loading or submission file creation processes can easily be triggered by non-technical program staff. This potentially frees the ED*Facts* Coordinator to focus on managing the ED*Facts* process.

By default, the application comes with the basic .NET security model, but with easy hooks to integrate into an existing Active Directory or other security environment. It is assumed this application would be installed behind a state firewall.

EDFacts Shared State Solution

ESP Offers ETL and Implementation Services

ESP Solutions Group is the developer of the ED*Facts* Shared State Solution (ES3) as an enhancement of its contracts with several SEAs. For newly adopting SEAs, the tasks of installing and configuring the solution, creating the ETL for the local sources to the staging data stores, and managing the process for the first year are available from ESP as contracted services. In future years, the maintenance of the ETL from local sources to the ES3 data stores can also be a service provided by ESP.

The design of the ED*Facts* Shared State Solution is entirely based upon Microsoft tools. These were purposely adopted by the early SEAs to ensure that they and future partners could maintain the solution themselves without an obligation to any vendor. However, the availability of ESP as a service option provides both the risk mitigation and the support alternative when local staffing or other factors demand.

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Extraordinary Insight for Support of ED*Facts* Shared State Solution SEA Partners

WWW.ESPSG.COM

ESP is the Managing Partner for ES3

States have shared software applications in the past with varying success. Challenges include the following:

- Who writes the documentation?
- Who maintains the code?
- Who coordinates communications among all the users?
- Who ensures everything is updated with changing standards and requirements?

For the ED*Facts* Shared State Solution, ESP became the natural managing partner for the SEA Partner Association. ESP has a deep understanding of EDEN/ED*Facts* from working with USED/NCES on the data standards and reporting processes for the Common Core of Data (CCD), the Integrated Performance Benchmarking System (IPBS), the Performance Based Data Management Initiative (PBDMI), and others that contributed to the foundation for ED*Facts*.

ESP has directly assisted multiple SEAs in the design and delivery of recognized ED*Facts* solutions. Those insights, combined with the expertise of participating SEAs supplied ESP with the architecture for ES3.

SEA Partner Association membership enrolls an SEA in ESP's managing partner services. ESP will provide project management, annual updates to requirements, current table and field structures for the data stores (unit staging, aggregate staging, and submission files), support, and documentation.

Steve King, ESP's Chief Architect, is only one of ESP's experts who will be ready to provide that value-added service for which ESP is known.

Darrell Prather, Data Analyst, is also well known for working directly with multiple SEAs to move their ED*Facts* reporting status right to the top. His in-depth knowledge of file specifications, business rules, and ETL from SEA sources make him an invaluable resource to partner SEAs.