

FSA Integration Partner

United States Department of Education

Federal Student Aid



**Data Strategy Enterprise-Wide
XML Framework Team
123.1.21 Community XML Technical
Architecture Support**

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Executive Summary

The Community eXtensible Markup Language (XML) Technical Architecture Support deliverable documents the support the XML Framework team provided to FSA and the post-secondary financial aid community (e.g., the Post-Secondary Electronics Standards Council [PESC]) during the period between January 24, 2003 – August 29, 2003. During this period, the XML Framework team provided technical architecture and XML schema development support to FSA and the community in the following three main areas:

- CommonRecord:CommonLine Schema Support
- PESC XML Forum Support
- College Transcript Support



Amendment History

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Table of Contents

1	INTRODUCTION	5
1.1	OVERVIEW	5
1.2	PURPOSE	5
1.3	SCOPE	5
1.4	ASSUMPTIONS	5
2	SUPPORT AREAS	6
2.1	SUPPORT AREAS OVERVIEW	6
2.2	COMMONRECORD:COMMONLINE SCHEMA SUPPORT	6
2.3	PESC XML FORUM SUPPORT	6
2.4	COLLEGE TRANSCRIPT SCHEMA SUPPORT	7
	APPENDIX A: XML SCHEMA BEST PRACTICES REVIEW – COLLEGE TRANSCRIPT.....	8
	APPENDIX B: ADDRESS STANDARDS AND SCHEMA EFFORTS	9
	APPENDIX C: XAL STANDARD.....	10



1 Introduction

1.1 Overview

The Community XML Technical Architecture Support deliverable documents the support the eXtensible Markup Language (XML) Framework team provided to FSA and the post-secondary financial aid community (e.g., the Post-Secondary Electronics Standards Council [PESC]) during the period between January 24, 2003 – August 29, 2003. During this period, the XML Framework team provided technical architecture and XML schema development support to FSA and the community in the following three main areas:

- CommonRecord:CommonLine Schema Support
- PESC XML Forum Support
- College Transcript Support

1.2 Purpose

Because FSA is taking a leadership role in the community's XML standards and development efforts, FSA is interested in providing technical architecture support related to XML standards and development to the community. The Community XML Technical Architecture Support task was intended to help FSA provide the community with education, collaboration, and technical review support related to XML standards and development.

1.3 Scope

The task provided a set amount of technical architecture and XML schema development support for the post-secondary financial aid community (e.g., the Post-Secondary Electronics Standards Council [PESC]).

1.4 Assumptions

- The XML Technical Architecture Support tasks were driven by the needs of the community and were performed in response to specific requests by FSA on behalf of the community organizations.
- The mandate for the Community XML Technical Architecture Support tasks was not to solely take upon the development effort for any XML schema development projects, but rather to help ensure their success by providing data modelling and XML schema development review and support.



2 Support Areas

2.1 Support Areas Overview

The XML Framework team provided technical architecture support to FSA and the community in the following areas:

- CommonRecord:CommonLine Schema Support
- PESC XML Forum Support
- College Transcript Support

2.2 CommonRecord:CommonLine Schema Support

The CommonLine file is the industry-standard fixed-width flat file format created by the National Council of Higher Education Loan Programs (NCHELP) and used by schools and service providers to exchange loan data. Collaborating with FSA, PESC has been developing the next-generation XML schema representation for the CommonRecord:CommonLine record.

The XML Framework team provided XML technical architecture support to PESC for the CommonRecord:CommonLine Schema. Through its participation in PESC conference calls and emails, the team provided support for the development of the working draft of the CommonRecord:CommonLine Schema. Specifically, the team provided recommendations on how to structure the core component, sector, and instance schema files that together form the CommonRecord:CommonLine XML schema.

Additionally, the XML Framework team provided a significant amount of time and resources to complete development of the working draft CommonRecord:CommonLine Schema. This support was provided to maintain continuity in the development effort when PESC volunteer resources were temporarily unavailable to continue development work. Some of the specific development activities included:

- Analysis and modifications to the schema files to resolve namespace modifier issues.
- Completing development of the base CommonRecord:CommonLine Request and Response Schemas, along with HTML generated documentation.
- Completing development of the Disbursement Roster CommonRecord:CommonLine Request and Response Schema, along with HTML generated documentation.
- Lastly, the XML Framework team provided advice on how to properly post the schema files so their references would be preserved.

2.3 PESC XML Forum Support

The XML Framework team provided ongoing support to PESC by participating in a series of PESC XML Forum conference calls and emails to discuss the status of the PESC XML initiatives. Some of the technical issues discussed on the PESC XML Forum included:

- Location of identifiers relative to entities they are identifying (e.g., Student and Institution).



- Merits of the use of entities vs. attributes.
- Approaches for a multi-tiered schema architecture.
- Approaches for namespace management.
- Extensible schemas with user-defined areas.

The XML Framework team also conducted additional research for PESC on address standards. Several standardization efforts aimed at defining the “Address” record were studied to find an approach that would be best suited to the needs of the community. A review of these standards is provided in Appendix B: Address Standards and Schema Efforts. The team focused on standards that handle United States (US) Addresses and have a defined XML Schema representation. It was not possible to find a standard XML schema representation for US Addresses only. The standard that has the most promise appears to be the OASIS Customer Information Quality (CIQ) XML Address Language (xAL), but the PESC members are still considering the feasibility of using this standard. Refer to Appendix C: xAL Standard for more detail on this standard.

Lastly, a member of the XML Framework team attended the PESC May Conference in Alexandria, VA to meet with other XML Forum members. At the conference, the group discussed the future of XML standards development within PESC, and the feasibility, scope, and merits of the several possible approaches available to them for defining reusable XML schema types in a Core Component library.

2.4 College Transcript Schema Support

The XML Framework team provided technical architecture support to PESC for the College Transcript Schema. The focus of this support was on reviewing the draft College Transcript Schema against industry best practices. Specifically, the team compared the College Transcript address definitions to best practices for modeling address definitions.

The team reviewed XML schema design best practices in order to evaluate the quality of the College Transcript schema. The College Transcript schema has been analyzed on several design issues such as extensibility, namespace design, and component declaration. The team provided recommendations on how the schema can be modified in order for it to be more extensible, dynamic, and reusable.

Lastly, the team provided XML schema development support for the final stages of the College Transcript Schema development before its draft release on September 3, 2003.



Appendix A: XML Schema Best Practices Review - College Transcript

Refer to the Appendix A_XML_Schema_Best_Practices_College_Transcript.doc file.



Appendix B: Address Standards and Schema Efforts

Refer to the Appendix_B_Address_Standards_and_Schema_Efforts.doc file.



Appendix C: xAL Standard

Refer to the Appendix_C_xAL Standard.doc file.