



# Student and Exchange Visitor Information System (SEVIS) Batch Conference

Lansdowne, VA  
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- ▶ Batch Data Exchange
- ▶ Technical Overview
- ▶ Security Specification
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# Purpose

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- ▶ The purpose of this presentation is to provide the connectivity and security changes in the Student and Exchange Visitor Information System (SEVIS) II
- ▶ This presentation will provide a preliminary look at specifications being considered



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# SEVIS II Batch Exchange

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- ▶ Schools and Program Sponsors may use the Batch data exchange process (Batch) to interface with SEVIS II
- ▶ Authorized schools and program sponsors may utilize systems external to SEVIS II to send and retrieve information (system-to-system)
- ▶ Schools and Program Sponsors may develop systems in-house or purchase third-party products to create and update student, exchange visitor, and dependent (i.e., visa classes F, M, and J) records and upload records to SEVIS II
- ▶ Schools and Program Sponsors extract their student, exchange visitor, and dependent data from their system into an Extensible Markup Language (XML) document that conforms to the appropriate SEVIS II XML schema
- ▶ The XML document will be transmitted to SEVIS II using Batch interface



## SEVIS II Batch Exchange (cont.)

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- ▶ Following a successful upload, SEVIS II authenticates and verifies the school or program sponsor's information prior to processing data from the SEVIS II Batch data document
- ▶ Custom built applications and third-party products will have to successfully test their applications in the Batch test environment before they can register to use SEVIS II in the production environment
- ▶ The SEVIS II Batch data exchange will be done via web services made available to schools and program sponsors registered to participate in the Batch interface



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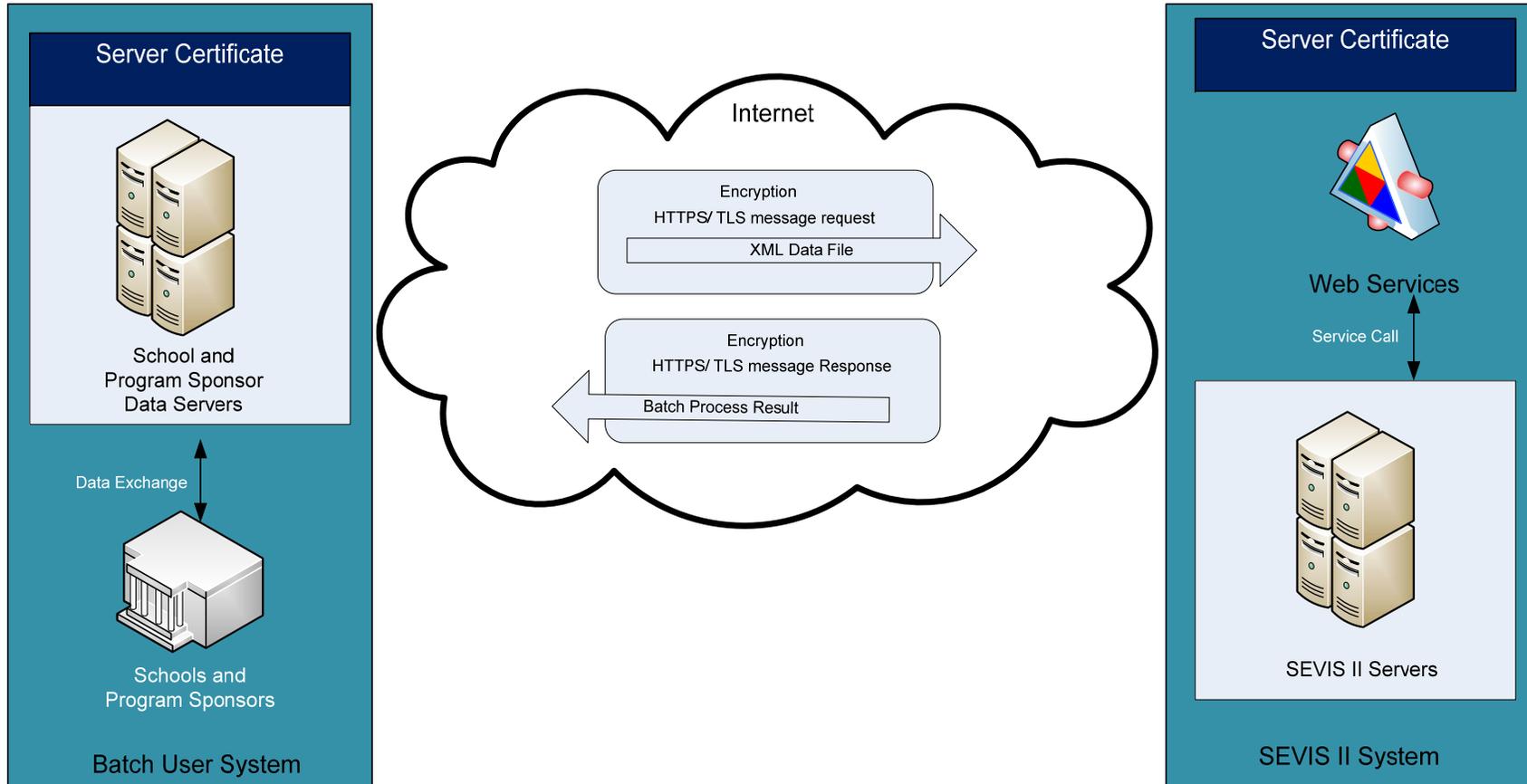
# Technical Overview

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- ▶ Simple Object Access Protocol\_(SOAP) version 1.2 will provide the communications framework for the SEVIS II web service. SOAP provides a lightweight protocol intended for exchanging structured information in a decentralized, distributed environment. The SEVIS II Web Service Description Language (WSDL) will provide the protocol information needed to connect to the SEVIS II system.
- ▶ WS-Security will provide the communication security for SEVIS II web service. WS-Security will describe how to attach the encryption headers to SOAP messages. In addition, it describes how to attach the server certificates to the message.
- ▶ Server Certificates - It is a digital certificate that has been issued to a server and contains information about it. It provides server authentication. A digital certificate must be associated with the server registered to a specific school or program sponsor.



# Technical Overview (cont.)



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# Message-level Security

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- ▶ For direct web services calls, the interface will use point-to-point connections with Hyper Text Transfer Protocol (HTTP) over Transport Layer Security (TLS) v1.0.
- ▶ As part of the web services security, digital certificates and system IDs are used to authenticate the sender's identity
- ▶ All schools and program sponsors are required to use server-side digital certificates to authenticate over the TLS 1.0
- ▶ The TLS 1.0 is used to encrypt the network packets prior to transmitting over the public Internet
- ▶ Any data sent to SEVIS II through the Batch interface must be sent from a school or program sponsors registered to use Batch. Third parties are not authorized to send data to the SEVIS II system
- ▶ Digital certificates of medium level of assurance or greater should be issued from an authorized non-federal share service provider



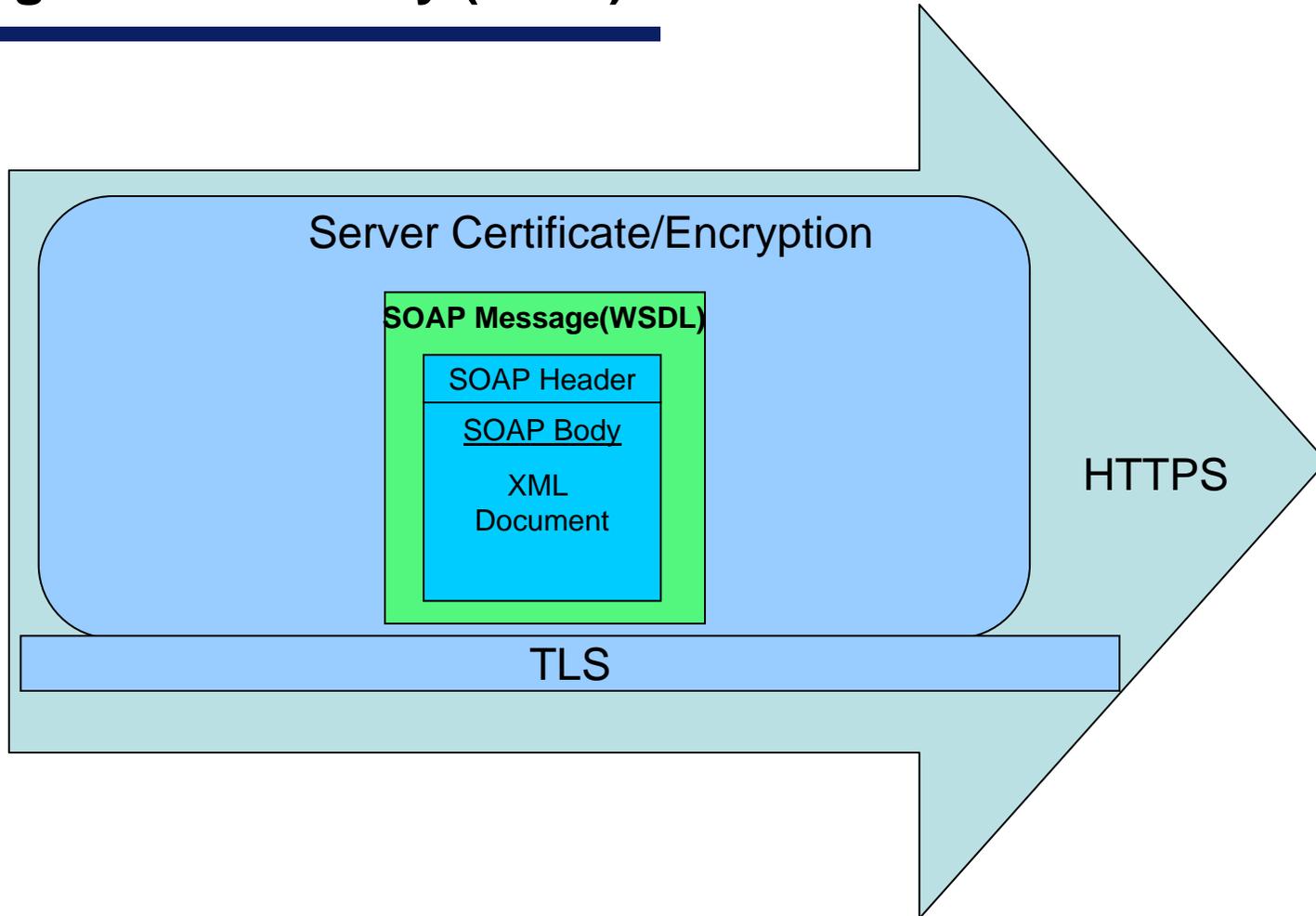
## Message-level Security (cont.)

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- ▶ Examples of authorized non-federal share service providers:
  - Verisign business systems: <http://www.verisign.com/authentication/government-authentication/shared-service-provider-non-federal/>
  - Entrust
  - Verizon business system
- ▶ Self-signed server certificates will only be allowed for testing in the Batch testing environment



## Message-level Security (cont.)



## Message-level Security (cont.)

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- ▶ Browser/client certificates will not be supported
- ▶ Rudimentary (or Basic digital certificate) will not be supported
- ▶ SSL 2.0/3.0 will not be supported



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# Batch Registration

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- ▶ Batch registration is the method by which a PDSO or a RO will register a school or program sponsors in SEVIS II to use the batch interface. Registration will entail several steps which may include but is not limited to signing a customer agreement, providing contact information, uploading the required digital certificate.
- ▶ The following actions are being considered for Batch registration:
  - Automating customer agreement
  - Requiring IT contact information
  - Requiring vendor information (if a school or program sponsor has hired one)
  - Digital certificate upload (verification will be done against the certificate authority)
  - Proof of training prior to being approved for use of Batch processing
  - IP Address registration



# Batch Processing

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- ▶ Batch processing will allow schools and program sponsors to upload data files on students, exchange visitors and their dependents. These files will be processed and log file results will be generated. The approach by which these uploaded files will be processed is still under development. The process for retrieving log files is also under development.
- ▶ The following is being considered for Batch upload processing:
  - Having an option for processing a single record in real time
  - Queuing a multiple record request and processing these requests as system resources become available (performance implications are being evaluated)
  - Placing Batch file requests on a file server for nightly or interval processing
  - Making log files available for retrieval as a separate asynchronous call
  - Responding to requests for SEVIS II student, EV, or dependent data associated with the requesting school or program sponsor



# Batch Standards

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- ▶ For more information on web service standards - <http://www.w3.org/2002/ws/>
- ▶ For more information on Simple Object Access Protocol (SOAP) standards - <http://www.w3.org/TR/soap/>
- ▶ For more information on the Web Service Description Language (WSDL), refer to [http://www.w3.org/TR/wSDL#\\_wSDL](http://www.w3.org/TR/wSDL#_wSDL)
- ▶ For more information on the Web Service security (WS-Security), refer to <http://www.OASIS-open.org>
- ▶ As development progresses, additional w3c specifications used will be released
- ▶ Batch will not need to comply with National Information Exchange Model (NIEM)



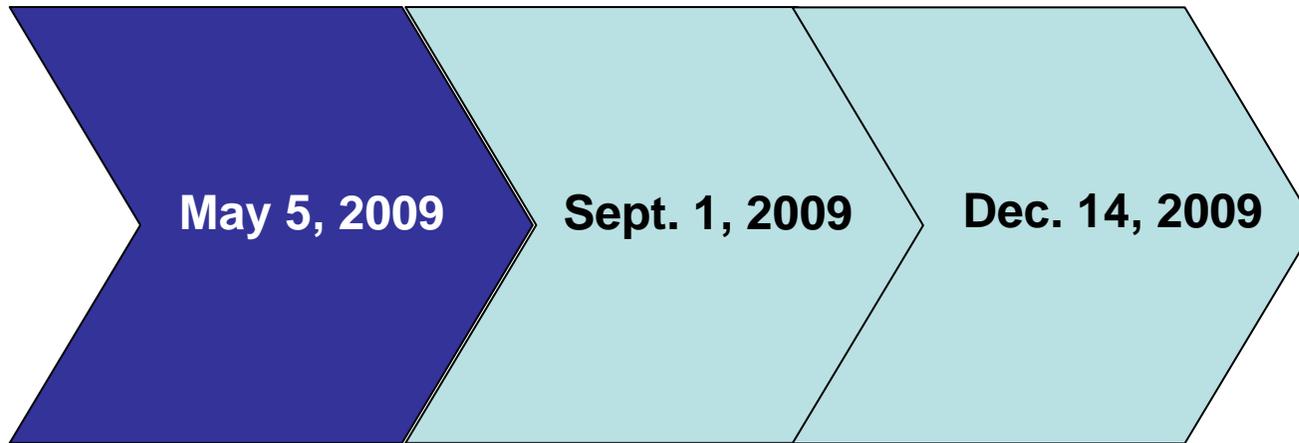
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# Specification Release Schedule

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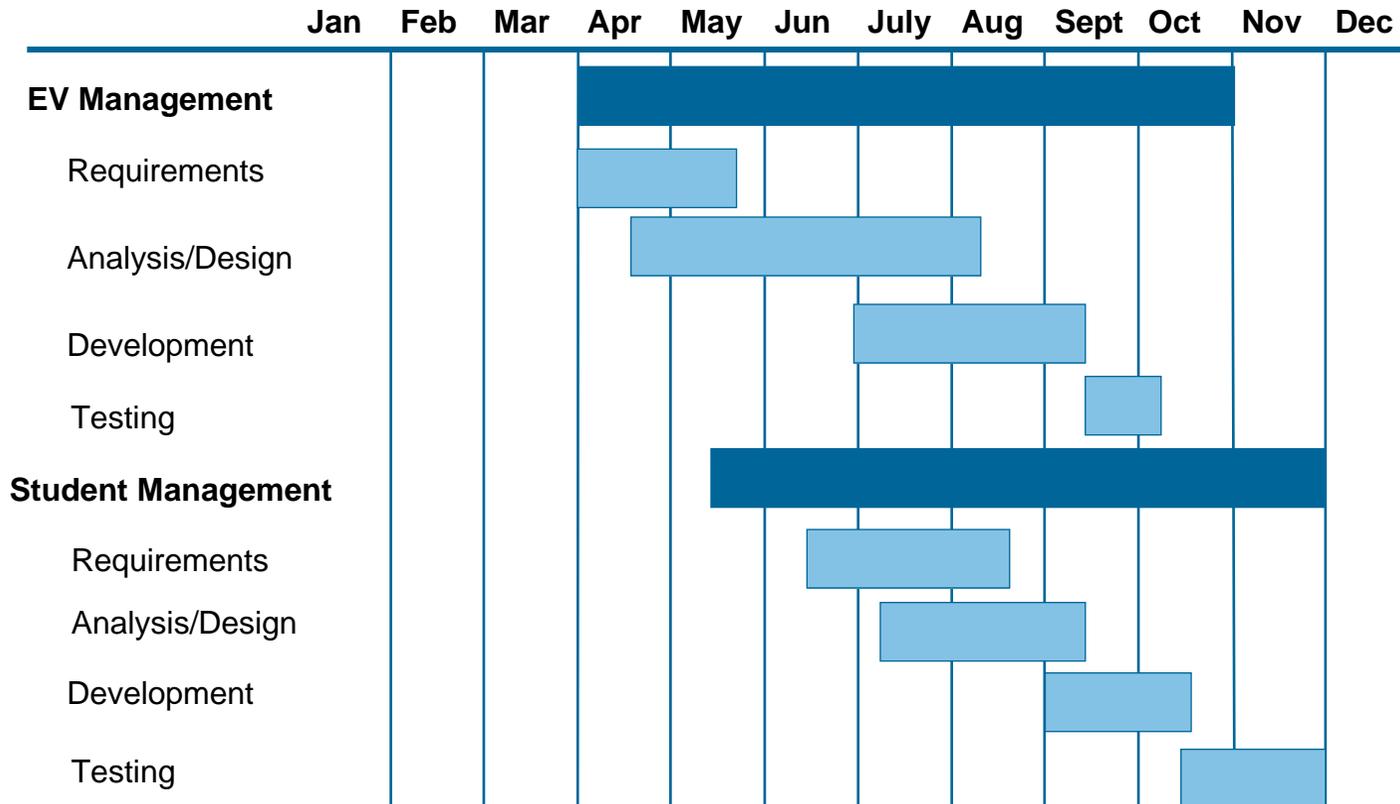
- Draft Connectivity and Security Specifications
- Ideas being considered for Batch registration, and Batch processing

- Updates to Connectivity and Security Specifications
- Draft Exchange Visitor/Dependent Specifications
- Draft process for Batch registration, and Batch processing specifications

- Final Design Specifications Published (including exchange visitor, student, and dependent)
- Process for registering and testing in the Batch testing environment



# SEVIS II Release Schedule 2009



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# Questions?

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