POSTSECONDARY
Electronic Standards Council

Policies and Procedures Manual

Standards Forum for Education

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Version 1.0.0

www.PESC.org

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1.0 Introduction

The Postsecondary Electronics Standards Council (PESC), established in 1997, is a non-profit, community-based umbrella association of organizations that share a common interest in the development, implementation, exchange, and promotion of electronic data standards for use in the education community.

PESC Membership organizations include:

- Colleges and universities;
- Professional and commercial organizations;
- Data, software, and service providers; and
- State and federal government agencies.

PESC activities are carried out by a number of standing committees and ad hoc workgroups that meet regularly both face to face and via conference call. PESC also promotes activities and best practices through events held throughout the year, including the Annual Conference on Technology and Standards held each May and its Annual Best Practices Competition awarded each April.

Workgroups and committees are created to address specific needs of the community. Some committees are standing committees while some workgroups are ad hoc, and these workgroups disband when their mission has been completed.

PESC utilizes an open review process that provides significant opportunity for all stakeholders to provide input and feedback with regard to the standards being developed and/or proposed. With collaboration across higher education as one of PESC's key values and principles, PESC is positioned to achieve success in the creation, promotion, and implementation of data exchange standards. As adoption and implementation of PESC approved standards are voluntary activities, trading partners and stakeholders must agree that standards produced are needed, reasonable, and operationally feasible. To reach this level of acceptance, trading partners and stakeholders need to participate in the establishment of the standards. To gain the needed level of participation, communication with the community about the proposed standards and the review/approval process is essential.

For each proposed standard, PESC provides many forms of communication, including:

- Publication of proposed standards submissions in the *Standard,* the PESC newsletter, and on the PESC website (www.PESC.org) as a means of providing notification to the community and for recruiting interested parties for the candidate submission development;
- Providing a dedicated location on the PESC website (www.PESC.org) for active standards development activity, providing at least the following information:
    - A list of candidates;
    - A list of active workgroups;
    - Composition of each workgroup with contact information, including the chair, to allow affected parties to determine that their interests are being represented (or not), and if not, to volunteer or recruit another volunteer who will represent their interests;
    - Each submitted candidate with regular updates of the most current schema definition; and
    - Status updates and expected delivery;
- Publication of all public comment documents;
- Upon ratification, the new standard and its supporting documentation will be made available to all interested parties (free and without charge) via the PESC website and placed in the PESC XML Registry and Repository;

In addition to these scheduled communications, the PESC office is receptive to individual requests for information about any pending standards submission, so long as those requests do not infringe upon proprietary information about participating organizations or individuals.

2.0 The Standards Forum for Education

Mission and Purpose

PESC's mission is to lead in the establishment and adoption of data exchange standards in education. Its goals are to enable the improvement of institutional performance and foster collaboration across educational communities, in order to lower costs, improve service, and attain system interoperability.

The Standards Forum facilitates the achievement of PESC's mission through collaborative development and production of data exchange standards. Utilizing a structured process with known acceptability criteria, the Standards Forum is able to gain the endorsement of the education community to set and maintain these standards.

The Standards Forum serves several purposes in the conduct of its activities; identification of areas for which standards are necessary, the approval of standards, as well as post-approval maintenance of these standards.

Standards Identification: The Standards Forum helps to identify data exchange functions for which standards are needed but lacking as well as assisting in the identification of participants with a vested interest in creating and utilizing standards, and with a knowledge base that contributes to the effort.

Standards Approval: Individual organizations, consortiums of organizations, or a workgroup of PESC may submit a proposal for data exchange to be considered for adoption as a standard. These proposals are considered "candidate submissions." As an approval and review body, the Standards Forum:

- Provides a structured and documented process for developing standards and submitting the candidate for approval;
- Supplies, upon request, technical assistance with the appropriate "packaging" of the candidate request for approval;
- Conducts expert-based review of the candidate standards and validates their appropriateness for the function(s) to be served;
- Provides, if the candidate application is determined to be inadequate, feedback to the submitters with improvements needed for a recommendation for approval;
- Supplies a vehicle for the solicitation of public comment from any and all parties who might be affected by the implementation and use of the proposed standards;

- Evaluates the public comment and works with the submitters to make any needed changes;

Post Approval Activities: Once approved, PESC will:

- Communicate the standards to the community;
- Provide a repository of approved standards for future reference; and
- Support a process for updating the standards, as community needs change.

Organization

The Standards Forum for Education is one of the standing committees of PESC and operates under the direction of the PESC Board of Directors. The PESC Executive Director and other staff and consultants support the Standards Forum.

Collaboration is the cornerstone of PESC's existence as a standards body. Collaboration exists when a cross-section of the higher education industry including vendors, institutions, not-for-profit institutions and other private and government agencies participate in the development and implementation of standards. Only through the comprehensive involvement of parties impacted by a particular functional process can any standard be approved, promoted, implemented, and enforced.

It is expected that the Standards Forum will deliberate until such time as all interested participants agree to a common approach and recommended solution for the standards submission.

A. Steering Committee – Standards Forum for Education

The work of the Standards Forum is directed and managed by a Steering Committee elected by the PESC Members. The Steering Committee consists of five individuals from different Member organizations and should reflect the broad participation and Membership of PESC. The PESC Board of Directors, at its discretion, may appoint a Board Member to serve on the Steering Committee as liaison between the two groups. Steering Committee Members serve for one calendar year beginning in January and have no term limits on service. The committee will represent a cross-section of the postsecondary education community (including institutions, service providers, software providers, government, etc) and will be served by a balance of technical, functional, and business professionals.

Nomination and Election

- An election for Steering Committee Members is held each year at the fall PESC Membership Meeting.
- The PESC Board of Directors is responsible for developing the Steering Committee slate of candidates. Nominations must be opened and announced no less than 30 days prior to the election. The Board requests that those individuals making nominations communicate with the nominee prior to nominating them, to ensure the nominee is able and willing to serve. Once the slate is finalized and announced, the PESC office will issue proxy ballots for those Members not able to attend the fall Membership Meeting in person.
- Proxy ballots will be distributed by email one day following close of nominations to designated voting PESC Member individuals prior to the fall Membership Meeting, along with a list of duties that outline the obligations of a Steering Committee Member. The ballot will allow for write-in candidates from the PESC Member category.
- PESC staff will collect the electronic and faxed proxy ballots prior to the fall meeting; however, paper ballots will be available at the meeting for those not returning the "proxy" ballot, or those wishing to override their proxy ballot. Staff will compile and conduct the election process and results. The five (5) candidates with the highest number of votes cast will be declared elected. The results will be announced during the Membership Meeting.

Roles and Responsibilities

The Steering Committee is responsible for adjusting the structure of the Standards Forum as appropriate, to ensure that the needs of the community are continually met. As part of this responsibility, the Steering Committee determines the appropriate parties that need to be involved in any individual workgroup or committee and appoints representatives from those constituencies as well as technical experts to the workgroup or committee. It is also the role of the Steering Committee to maximize opportunities to involve the Standards Forum in other industry initiatives as appropriate.

The Steering Committee will also:

- Provide direction and guidance to all Standards Forum workgroups and committees.
- Approve *Action Requests* and authorize the tasks of the workgroups and committees.
- Recommend the approval to the Board of Directors of output of the Standards Forum for publication and distribution.
- Provide strategic direction for the Standards Forum.

- Recommend standards to the PESC Board of Directors for final voting, approval, and ratification.

Furthermore, individual Members of the Steering Committee:

- Advocate for the Standards Forum by leading, promoting, and facilitating the standards developed.
- Are required to attend monthly meetings to provide progress reports, review statuses, and to discuss and review the general direction of the Standards Forum
- Participate in Standards Forum meetings, conference calls, and events.

B. Advisory Boards and Workgroups – Standards Forum for Education

The activities of the Standards Forum are conducted within several advisory boards and workgroups. The advisory boards make up the core structure for the administration of the Standards Forum activities while the workgroups are responsible for the detailed subject matter activities. Participation is open to all Membership organizations of PESC. Additionally, non-PESC Members may be invited to participate at the determination of the Executive Director.

Nomination and Election

The Advisory Board Membership is determined by the Steering Committee and is based on the subject matter of the proposed standard and the parties that will be impacted by the proposed standard.

Unlike the Steering Committee, there is no formal election process for participation on any of the Standards Forum Advisory Boards and/or Workgroups. Membership on the advisory boards and workgroups is voluntary and unrestricted (except as noted above).

Roles and Responsibilities

There are three standing advisory boards in operation to support the administration of the Standards Forum.

1. ***The Submission Advisory Board*** serves as the first point of contact and review for any proposed standards submitted to prepare them for transmittal through the entire process and ultimately to the Change Control Board.

2. ***The Technical Advisory Board*** is responsible for updating and maintaining all technical specifications and for providing guidance on technical and architectural issues related to electronic standards and higher education.

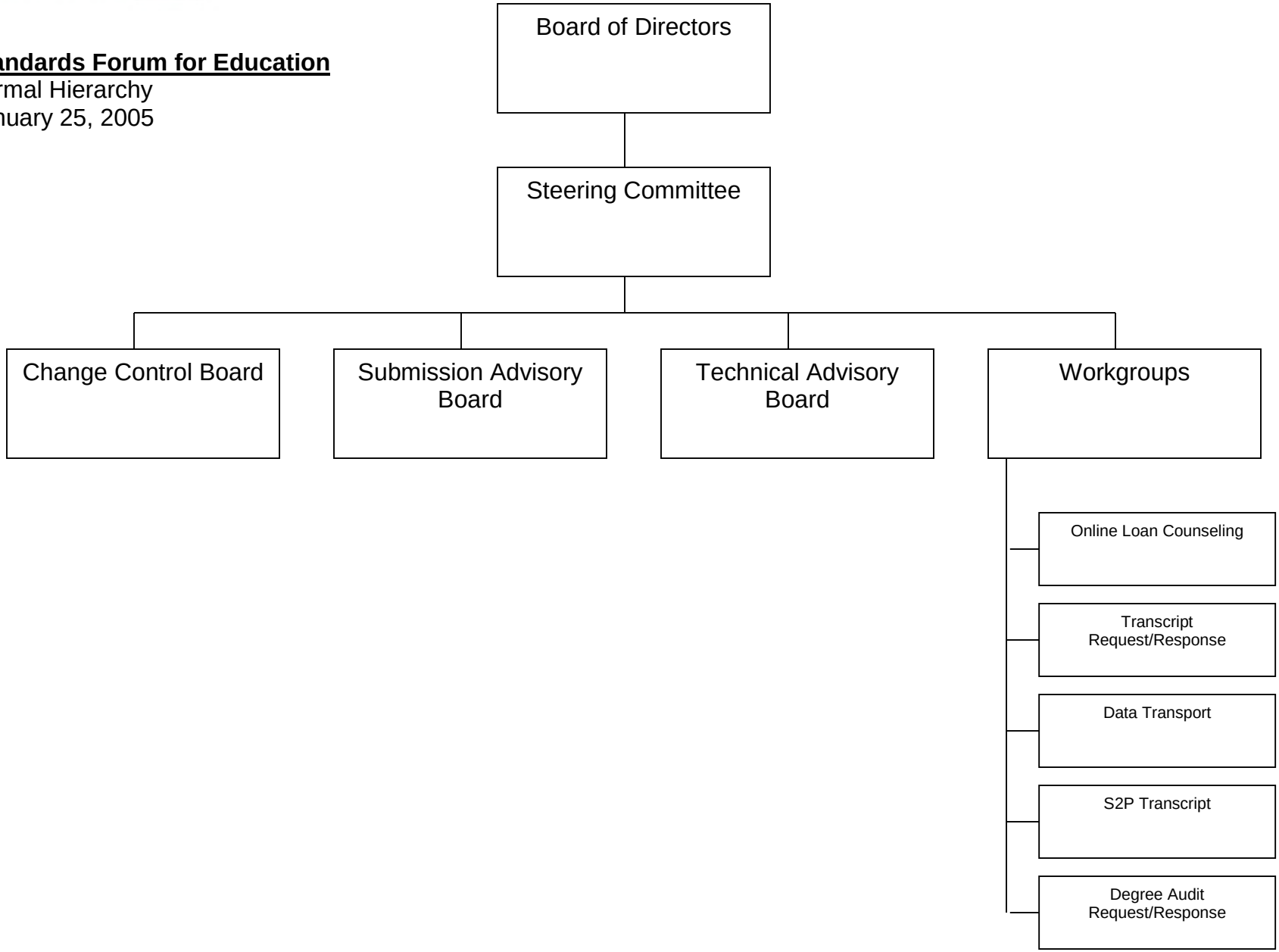
3. ***The Change Control Board*** governs the data dictionary, core components documentation, and schemas and authorizes all changes and updates to any and all PESC approved standards.

Individual workgroups are created and removed as dictated by the needs of the Forum. For a listing of current workgroups, see Appendix A. Workgroups have the authority to create subcommittees as needed to carry out their responsibilities. Workgroups create proposed standards based on the needs of the education community and these proposals are transmitted to the Change Control Board for review and validation. Developers and analysts on the workgroup must prepare documentation with a consistent approach. They must be developed in accordance with PESC's Guidelines for XML Architecture and Data Modeling or corresponding guidelines for other technology applications.

The workgroups are also responsible for ensuring that sufficient industry collaboration is involved in the development of the candidate submission. All parties with a vested interest in the adoption of a standard must have the opportunity to provide input to the process.

Upon acceptance of a new standard, the individual workgroups also become responsible for development and maintenance of the standards that they are assigned. Individual workgroups are created and eliminated as dictated by the needs of the Standards Forum. Workgroups are expected to make every effort to reuse existing data elements without modification wherever possible to minimize the number of data elements used across applications. It is also important that each workgroup be conscious of the fact that the credibility of the products is born from collaboration.

Standards Forum for Education
Formal Hierarchy
January 25, 2005



3.0 Standards Submission and Approval Process

Individual organizations, consortiums of organizations, or a workgroup of PESC may submit a proposal for data exchange to be considered for adoption as a standard as long as the organization proposing the standard is from PESC's membership. These proposals are considered "candidate submissions." All candidate submissions will be analyzed utilizing a structured process with known acceptability criteria. Additionally, changes to existing standards must be submitted following the same process.

The following steps outline the standards approval process:

Step One: Request Made - Initial Submission

The submitter of the candidate must file a written request to the Submission Advisory Board of the Standards Forum to propose a new standard.

The initial submission must:

1) Be submitted through the PESC office
2) Be electronic (Hardcopy submission is acceptable only if accompanied by electronic copies of all items).
3) Include a Letter of Intent (used by the submitter to officially announce to PESC and the community its intent and/or need to develop a proposed standard in an open collaborative manner) *NOTE: see template at end of process steps.*
4) Include a narrative business case that includes:
   - a historical overview of the problem to be solved;
   - a justification of the proposed solution or amendment to existing standard;
   - a description of the collaboration that is planned to go into the effort.

Receipt of the request will be acknowledged to the submitter within three (3) business days.

Step Two: Workgroup Formed – Submission Developed

The Submission Advisory Board, in consultation with the Steering Committee, will:

1) analyze the request
2) determine whether the proposed activity is appropriate for the PESC mission and realm of influence,
3) authorize the establishment of a workgroup to assist with the development of the submission.

Submissions not approved will be returned to the submitter along with an explanation of what is necessary to make the candidate acceptable for further review.

Workgroup Details

The submitting party is expected to lead the development workgroup and identify appropriate members. The Steering Committee will supplement the workgroup membership as appropriate. The initial meeting of the workgroup will be conducted by PESC's offices whereby communications, announcements, and appropriate news releases will be issued to notify the community that a standard is beginning its development phase and to allow the community ample time to prepare for and participate in the development process. Since a standard is far more easily accepted if all interested parties participate in its creation, PESC will endure that the workgroup is representative of all potential participants in the electronic exchange.

The development workgroup:

1) Will prepare the candidate submission for detailed review.
2) Be provided with all submission requirements and review process expectations.
3) Is responsible for completing all requirements and submitting:
    - Technical Solution, including XML Schema or the equivalent for the technology being proposed. (See Section 5 for technical requirements);
    - Instance Data Dictionary and Glossary (See Section 6 for content and format requirements) that clearly identifies those elements which are:
        - Taken from the Core Components Dictionary without modification;
        - Taken from a Sector Dictionary without modification;
        - Modifications of either the Core Components or Sector Dictionary (with a justification for each variation requested); and
        - Entirely new for this application (with a justification as to why an existing element cannot be used and a new element is required).
        - Instance Document (sample input/output from application).

The development workgroup chair is responsible for:

1) accurate and timely communications
2) maintaining a high level of participation
3) calling meetings and keeping meeting minutes (to be posted on the PESC website and included in the monthly *Standard)*
4) making assignments
5) coordinating the development activity

To help facilitate the process, a checklist of action items is included at the end of those process steps.

Step Three: Completed Candidate Proposed

The Change Control Board will conduct a thorough review of the development workgroup submission, which will include a validation against the:

- Registry and Repository
- Existing technical specification;
- PESC Schema for XML Architecture and Data Modeling;
- PESC collaboration principles; and
- PESC Mission Statement for appropriateness as a PESC standard.

If needed, clarification will be requested. The anticipated timeframe for such a review is 30 calendar days. No candidate will be approved for further consideration until all the minimum requirements have been satisfied, or the Change Control Board has determined that the unmet requirements are not applicable.

Step Four: Public Comment

Once the candidate review is satisfactorily completed, the Steering Committee will notify the PESC Board of Directors of its intention to issue the candidate for public comment. The Board will have seven (7) calendar days to dissent, providing reasons for doing so. If no dissent is received, the PESC office will issue a Notice of Opportunity for Public Comment, in the following manner:

1) Electronic notification to PESC Membership official contacts;
2) Publication in the PESC *Standard*;
3) News release to the various PESC distribution lists of interested parties and media sources;
4) Announcement on the PESC Internet home page (www.pesc.org)

The public comment period will be thirty (30) calendar days. All comments, from the Membership and the public, shall be made in the form of an e-mail to the PESC Executive Director at: comments@pesc.org. The comment e-mail should clearly identify the:

1) Responder and appropriate contact information;
2) Source of the comments, i.e., whether the comments are individual or represent those of a group the responder represents;
3) Nature of the responder's interest in the standard (why do you care?);
4) Element(s) of the proposed standard with which issue is taken;
5) Changes suggested to resolve the issue(s).

The Change Control Board will address and consider all public comments and make, in consultation with the originating parties, any necessary revisions. All public comments will be posted to the PESC website during the review process. The consideration/revision period will be 30 calendar days.

Step Five: PESC Members Vote

Once any changes resulting from the public comment period have been incorporated, the Change Control Board will recommend to the Steering Committee and the Board of Directors that the candidate be submitted to a vote of the PESC Members. The Board will have seven (7) calendar days to approve the submission or refer it back to the Change Control Board with specific instructions for further work. The PESC office will issue electronic ballots to the official contacts of voting Member organizations.

Completed ballots, including the reason(s) for any rejection, shall be returned to the PESC office via e-mail attachment, fax, overnight delivery, or U.S. Postal Service within ten (10) business days. PESC staff is responsible for the tabulation of the ballots; acceptance of the candidate as a standard requires an affirmative vote of at least 80% of all votes cast.

Candidates not approved will be returned to the submitting workgroup by the Change Control Board for possible revision. The workgroup will have thirty (30) calendar days to modify and return the proposal if it desires to do so. A revised candidate submission will retrace all previous steps. Rejected candidates will be returned to the development workgroup with the reasons (but not sources) of rejection, and the workgroup is provided an opportunity to respond to the cause(s) of rejection and resubmit the candidate submission without limitation. If a change in the underlying specification or standard is approved, the denied candidate submission will be reassessed under the new specification or standard and dealt with accordingly.

Step Six: Ratification as PESC Approved Standard

Once the Members accept the candidate, the Board of Directors will within seven (7) calendar days ratify the vote, publish/post all necessary documents and communications, and implement version control on all documents. The originating sponsor of the candidate, the Submission Advisory Board, Change Control Board, the Steering Committee, and the PESC Membership are all notified of the review results. It will also be published in the *Standard,* displayed on the PESC home page; and disseminated through a press release to the general public. Following ratification, the new standard and its supporting documentation shall be posted to the PESC website, placed in the PESC Registry and Repository, and made available, without charge, to the general public upon request.

SAMPLE LETTER OF INTENT

Submitter Name
Submitter Organization
Address
City, State Zip

Date

Re: Letter of Intent

Dear Michael Sessa,

I am pleased to submit this letter to notify PESC that the (Initiating Entity) intends to work collaboratively with the higher education community to develop the following standard _____.

A high-level description of the proposed standard is as follows:

Please see the attached Business Case which includes information but is not limited to: historical overview, justification, description of the planned collaboration, etc.

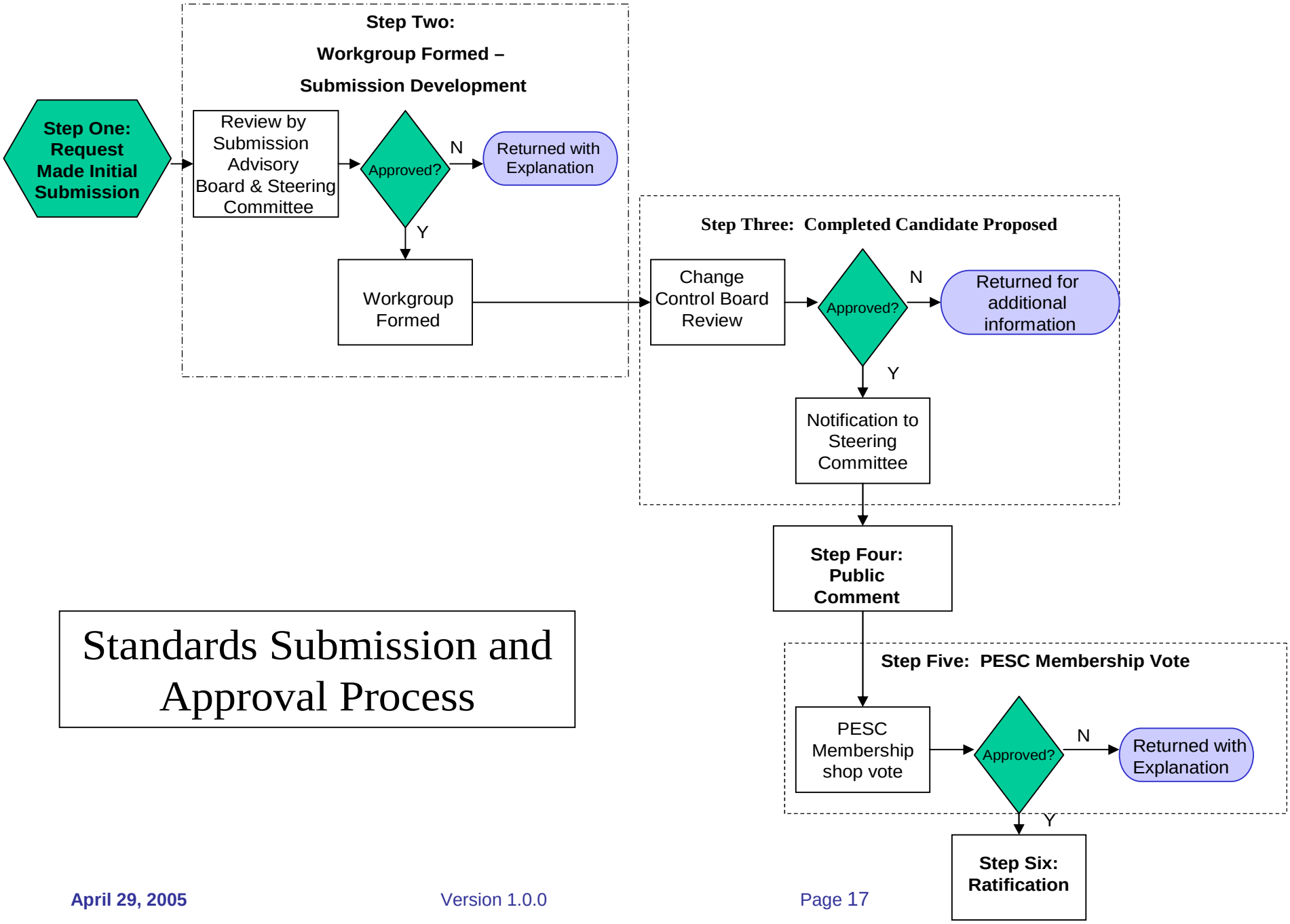
Finally, I have the following comments:

Sincerely,

PESC CANDIDATE SUBMISSION CHECKLIST

Submission Task	✓	Date Completed
1) Submit Letter of Intent to PESC		
2) Community Announcement of Collaborative Effort		
3) Select Development Team Co-Chairs		
4) Collaborative Development of Core Component Requirements		
5) Review Against Registry and Repository		
6) Initial Core Components Submission		
7) Review/Revise Based on Feedback		
8) Resubmit Core Components to the (If Necessary)		
9) Develop Schema, Instance Documents and Implementation Guide		
10) Initial Schema and Instance Document Submission		
11) Review/Revise Based on Feedback		
12) Resubmit Schema and Instance Documents (If Necessary)		
13) 30-Day Community Comment Period		
14) PESC Member Vote		
15) PESC Board of Directors Ratification		
16) Community Announcement of Standard		

Standards Submission and Approval Process



4.0 Change Control

Once a standards candidate has been approved and posted in the Registry and Repository, there are three levels of change to the standard that must be supported:

- Level 1 - Critical Changes
- Level 2 – Non-Critical Changes
- Level 3 – Future Enhancements.

Upon approval of these changes by the Standards Forum and respective processes, appropriate documentation changes will be made, the revised documentation will be posted, and all changes will be communicated to the community.

Level 1 - Critical Changes

Critical changes require immediate attention and resolution as they correspond to a fatally flawed or erroneous item or issue that has high risk and exposure for the community. These changes, also referred to as production problems or incidents, usually impact live business processes and applications that are currently functioning and/or are in production and therefore cannot wait for the next document release.

Critical changes are approved by the individual sector owners to expedite resolution; they are not required to follow the regular approval process. At its discretion and based on the nature of a critical change, the sector owner may issue an immediate correction or adjustment. All corrections and adjustments will indicate the nature of the change along with its corresponding effective date. Sector owners are required to notify the Change Control Board within 24 hours of approving any critical change. The Change Control Board and the Steering Committee, at their discretion and based on the nature of a critical change, may utilize their oversight responsibilities to determine an alternative course of action. For example, the Steering Committee may determine that a critical change request requires additional review by the Standards Forum or that an abbreviated public comment and/or voting process be required.

Approved critical changes will be communicated via e-mail and followed up by a technical correction document.

Level 2 – Non-critical Changes

Non-critical changes are changes that are not planned ahead of time and are not required for the immediate continued operation of an application or business process.

These changes are necessary, however, to be implemented prior to the next official release of the documentation.

Non-critical changes will follow the regular approval process as outlined in sections 2 and 3. Voting is required for the approval of non-critical changes.

Approved non-critical changes will be communicated via a republication of the core dictionary and the appropriate sector dictionaries.

Level 3 – Future Enhancements

Future enhancements are changes that are planned ahead of time and are not required for the immediate continued operation of the application or business process. These changes occur in conjunction with new releases of the documents. Generally, these changes will reflect concerns about the applicability of the standards for the intended purpose, or suggestions about how the standards can be improved. The approval of these changes happens within the existing infrastructure of the Standards Forum.

Future enhancement changes will follow the regular approval process as outlined in sections 2 and 3. Voting is required for the approval of future enhancement changes. Approved future enhancement changes will be communicated via a republication of the core dictionary and the appropriate sector dictionaries.

Issue Submission Process

In all instances, the user should report the details of any issues to PESC, providing as much documentation as possible. The documentation must include:

- Identification of the standards affected.
- Version of the standards affected.
- A specific description of the problem.
- A proposed “fix” or resolution to the problem.
- Identification of dates and/or milestones that may be impacted or affected.

PESC will assign the change(s) to the appropriate workgroup for further research and to determine whether or not an error is present. At the direction of the workgroup, PESC or the workgroup itself will communicate the disposition of the reported error to the reporting entity.

Possible dispositions include: accepted immediately for implementation, no change recommended with rationale, or a proposal to the Members for modification of the

existing standards which will go thorough the same approval process as a new candidate.

PESC appreciates feedback and encourages users to report any suspected errors, no matter how minor.

Version Control

Any and all changes to published standards will be tracked and catalogued as they are made by the designated editors, utilizing commonly accepted version control techniques utilized in the software industry. Two decimal places are utilized to allow for three categories of changes to the documentation. Using the format A.B.C, where A represents a critical change, B represents a non-critical change, and C represents micro changes such as a change to comments included in a schema. A log will be maintained within the standards file of each change, by date and author.

Each sector schema as well as the core schema will have a version number. The collection of all sector schemas and the core schema comprise equate to the release number. There are two triggering events that will cause documentation to be republished, and therefore, require a change in the version and release numbers:

- Approval of a non-critical change
- Approval of a future enhancement

The table below illustrates how the numbering scheme will change based on these triggering events:

Triggering Event	***Release Number***	***Core Schema Version Number***	***Sector Schema A Version Number***	***Sector Schema B Version Number***
Initial Publication	1.0.0	1.0.0	1.0.0	N/A
Non-critical change to Sector Schema A	1.0.0	1.0.0	1.1.0	N/A
Future enhancement change to Sector Schema A with change to core schema	2.0.0	2.0.0	2.0.0	N/A
Approval of Sector Schema B with no change to core schema	3.0.0	2.0.0	2.0.0	1.0.0
Micro change to Sector Schema B	3.0.0	2.0.0	2.0.0	1.0.1
Future enhancement change to Sector Schema B with no change to core schema	4.0.0	2.0.0	2.0.0	2.0.0

5.0 Technical Specifications

Technical specifications are the basis for effective standards-establishing processes. Any person or organization wishing to create a standards candidate must have a model by which to structure the proposal for acceptance as a standard. Alternatively, the standards body must have a model for evaluating whether or not the candidate should become a standard for its proposed function. Without technical specifications, neither party has what it needs to create or approve a standard.

The *PESC Guidelines for XML Architecture and Data Modeling* specification is an ongoing output of the Technical Advisory Board of the Standards Forum for Education. First organized in August 2000 on the recommendation of a PESC study group, the Standards Forum has as its mission the establishment of Extensible Markup Language (XML) standards for the education community through collaboration. The Technical Advisory Board was charged with performing research on existing XML specifications and best practices and providing technical guidance to XML developers in the education space. This document is the result of its efforts over a period of eighteen months. The purpose of this specification is to help guide the work of the Standards Forum and the higher education community as it implements XML message data exchanges.

This specification is a living document – it will be updated periodically as XML standards evolve. Refer to Attachment C.

Note: Additional technical specifications may be developed as needed to address standards candidates proposing the use of technologies other than XML.

6.0 The XML Registry & Repository for the Education Community (XML Registry and Repository)

Introduction

Registries and repositories are an ongoing area of development in e-Business technology. Repositories are facilities for storing data. They can be thought of as the bookshelves in a library. Registries have information about the data in the repository, and assist in retrieving items from repositories.

Registries and repositories generally deal with making information or software components (such as XML schemas or parts of schemas) available from a central location, and offer various ways to categorize and search. The types of information, items stored, and uses can vary widely. Some are little more than libraries of XML schemas or DTDs for common business documents. Others are designed to also store information on business processes or encoded models of them. Still others function much like telephone yellow pages, helping to identify companies that offer certain goods and services.

The XML Registry and Repository houses all XML schemas related to the Standards Forum for Education and will be made available through the Internet and the PESC.org website. Designed and developed by FSA as a part of its enterprise-wide data strategy, its use has been "donated" to the education community, under the auspices of PESC. As administered by FSA, the PESC XML Registry and Repository has a well-delineated security process in place to protect the investment of the organization and its contributors.

The XML Registry and Repository, in conjunction with the XML Core Component Dictionaries (see Section 6), provides an initial set of enterprise definitions of key data that is exchanged between the financial aid community's business partners. Developed in accordance with industry standard methodologies, languages, and tools, the Core Components capture a refined set of reusable pieces of business information that are modelled in eXtensible Markup Language (XML) and provide standard definitions for key data entities across the community, while the Registry and Repository application provides a way to store, access, and manage these data entities.

Scope

The PESC XML Registry and Repository is a web-based application that provides a single point of access for enterprise data definitions and interface documents. The XML Registry is used to store and provide access to the following document types:

- Core Components
- XML Schemas
- Supporting Documentation

Only documents under consideration or previously approved by the Standards Forum for Education and/or FSA may be placed and maintained in the PESC XML Registry and Repository. Other entities are welcome to present candidates for approval as a standard, but may not otherwise utilize the facility for their own purposes.

The application provides users with browse, view, edit, and create functionality based on their assigned access privileges.

Benefits

The full benefits of XML will only be achieved if organizations use the same data element definitions and those definitions are available for all business partners to search, retrieve, and utilize for message specification development. The XML Registry and Repository provides the community with an application that can be used to store and retrieve these common XML definitions and documents. Specifically, the XML Registry:

- Provides a single authoritative source for definitions of the community's XML artifacts.
- Promotes reuse of common data definitions for commonly exchanged data.
- Provides version control of XML documents and definitions.
- Provides knowledge-sharing capabilities.
- Provides easy access to XML resources and information.
- Facilitates publishing XML artifacts.
- Improves the availability of XML artifacts for all business partners in the Financial Aid Community.
- Improves search, discovery, access, and analysis capabilities for functional users.
- Helps to ensure interoperability throughout the community, by providing access to a baseline set of definitions for commonly exchanged data.

Registry & Repository Architecture

The XML Registry and Repository is a web application that allows users to store, categorize, search, and view Core Component definitions and XML Schemas.

The Registry is a persistent storage system that holds metadata about the documents stored in the Repository, such as location, version, and classification information. The storage system for the XML Registry is an Oracle database and is based on the ebXML ebRIM Specification v2.5. The XML Registry has been expanded to store Core Component Dictionary definitions, Enumerated Lists, Sector Libraries, and Message Specifications.

The XML Registry uses a web front-end that allows the general public to freely access on a read-only basis the Core Components, Sector Libraries, and Message Specifications stored in the Registry's storage system. Editing (adding, changing, deleting) the contents of the Repository is restricted to individuals designated by the PESC and FSA staff to have that responsibility. The Registry application has been designed using HTML, JavaScript, and Java Server Pages (JSPs). The business logic that ties the web front-end to the data storage system has been developed as an Enterprise Java application. The XML Registry application runs on WebSphere Application Server (WAS) and can be accessed via the IBM HTTP Server (IHS).

The following diagram illustrates the architecture of the XML Registry and Repository system.

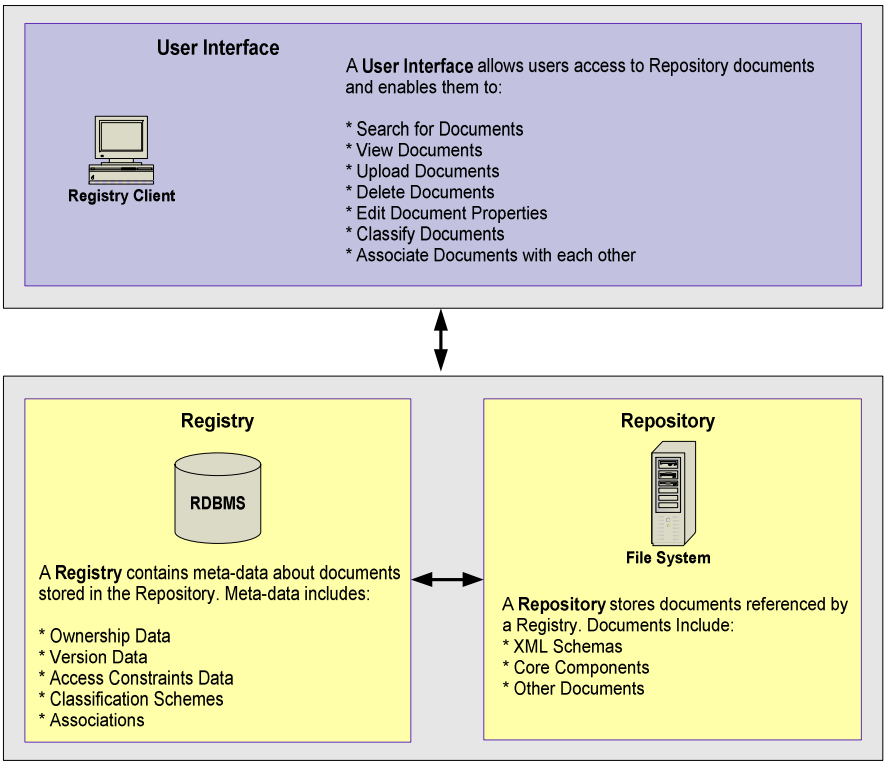
Definitions

Interface - The client interface allows users to access a Registry and Repository software system via a web front-end. The client interface facilitates storing, categorizing, searching and retrieving documents from the Registry and Repository.

Registry - A Registry is a persistent storage system that contains metadata about the documents stored in the Repository. The metadata may include information about these objects, such as their location, accessibility, version, access policies, document classification schemes, and associations between the documents. In most implementations the storage system is a relational database management system.

Repository - A Repository is a persistent storage system where documents, templates and software components reside. In most implementations the storage system is the operating system's file system. In summary, a Repository is a holder of submitted content, while a Registry is a catalog that describes the submitted content in the Repository.

Registry and Repository Architecture



Standards

The XML Registry and Repository is based on the most current version of the OASIS Committee Approved Specifications for the ebXML Registry and Repository, namely the OASIS/ebXML ebRIM Specification v2.5.

The Registry Information Model provides a blueprint for the ebXML Registry. It identifies the type of metadata that is stored in the Registry, as well as the relationships among metadata classes. Specifically, the ebRIM defines what types of objects are stored and how they are organized in the Registry.

As the approved standards for XML Registries are still being identified, a number of agencies and organizations have already developed their own Registries to provide them with a single authoritative source for XML modeling and representations. With the notion of federated, or shared, registries becoming more prevalent, these registries, which have been built around the commonly accepted standards above,

can provide flexibility in moving towards interoperability between government agencies and their business partners.

Application Features

The XML Registry and Repository provides a central point of access for XML Core Components, XML Schemas, and supporting documentation. Users can access the Registry and Repository to search, view, upload, and download the XML Core Component definitions and documentation.

The XML Registry and Repository will provide the following main categories of functionality:

A. Administration
B. Classifications
C. Core Component Management
D. Sector Library Management
E. Message Specification Management
F. Search
G. Information
H. Error Handling

A. Administration -The XML Registry and Repository provides Administrators with the ability to create, edit, and delete users and organizations. Users are grouped together by organization to facilitate user management. Administrators can create, edit and delete Users within those organizations.

Registered Users are able to edit their User Profiles, but cannot view organizations or other users.

B. Classifications - Core Components, Sector Libraries, and Message Specifications are grouped into manageable sets by Classification scheme, which are typically defined by business area. All users can view the details for a selected Classification within the Classification section.

C. Core Component Management - The Core Components are based on ebXML guidelines, as well as the Universal Business Language (UBL) guidelines from OASIS.

The initial set of Core Components consists of the key data entities that are exchanged across the community. These Core Components have been developed based on the key business entities identified by the various community efforts toward commonality.

The Core Component section of the XML Registry and Repository allows all users to browse through the Core Components categorized by Classification, or search on all Core Components using keywords.

Registered Users and Administrators are able to edit and create Core Components.

D. Sector Library Management - Sector Libraries consist of smaller XML building blocks that share a common Classification scheme. The Sector Library section of the XML Registry and Repository allows all Users to browse through the Sector Library for specific Schema files, or search on all Sector Libraries using keywords. All users can download Schema files.

Registered Users and Administrators are able to update metadata, upload new documents, and upload new versions of existing Schema files.

E. Message Specification Management - Message Specifications are existing XML Schema files, used by systems, which are grouped together by Classification scheme. The Message Specification section of the XML Registry and Repository allows all users to browse through Message Specifications categorized by Classification, or search on all Message Specifications by keyword(s).

All users can download Message Specifications. Registered Users and Administrators are able to update metadata, upload new documents, and upload new versions of existing Message Specifications.

F. Search - Search functionality offers users the ability to quickly find documents of interest, by searching on specific keywords. Users will be able to search the web site for specific Core Components, Sector Library files and Message Specifications, by entering search text and selecting search criteria.

G. Information - The Information page of the XML Registry and Repository provides a source of relevant links and documents for the XML Registry and Repository, Core Components, and XML information.

H. Error Handling - The Registry uses a custom error logging component (ELC) architecture to standardize the handling of errors for developers and provide users with a user-friendly message explaining any problems encountered on the site. When users perform invalid functions or the system is not properly responding to a request, error pages are returned. Typical errors consist of form submissions that do not include the required fields.

User Roles

The initial release of the XML Registry and Repository supports the following user roles:

- Administrator
- Registered User
- Guest User

User accounts are created for each XML Registry user. The accounts are created and managed by the Registry's system administrator(s). User account information that is stored includes username, password, type of user (administrator or registered user), and contact information.

A user's access to content is based on their assigned user group. The following table illustrates the access privileges for the different user types.

User Type	Description
Guest User	Guest Users may access the XML Registry and Repository without logging into the application. These users do not have access to update or modify and content that is stored in the Registry; however, they can access to view and download information.
Registered User	Registered users are able to modify and create new Core Components, Sector Libraries, and Message Specifications, in addition to viewing and downloading the documents.
Administrator	Administrators are also able to view, create and modify Core Components, Sector Libraries, and Message Specifications as well as create Users and organizations. Administrators are able to create and deactivate either administrator or registered users.

Table 1 - User Roles

7.0 Appendices

Appendix A

Standards Forum Workgroups

(as of 4/29/05)

There are five workgroups (as of January 2005) in operation responsible for the detailed subject matter activities.

1. ***The Online Loan Counseling Workgroup*** is responsible for the development of a standard for the exchange of loan counseling data.

2. ***The Request and Response of the XML Postsecondary Transcript Workgroup*** is responsible for the development of a standard for the request and response of the already-approved XML Postsecondary Transcript.

3. ***The Data Transport Workgroup*** is responsible for the development of a data transport standard for the exchange of data between and among institutions, service providers, and all other suppliers within the higher education community.

4. ***The Secondary to Postsecondary (S2P) Transcript Workgroup*** is responsible for the development of a transcript that can be exchanged between and among secondary and postsecondary institutions.

5. ***The Request and Response of the Degree Audit Workgroup*** is responsible for the development of a standard for the request and response of data relating to a student's respective degree(s).

Appendix B

Election and Voting Ballots

BALLOT

XML Postsecondary Transcript

The Standards Forum for Education is presenting the XML Postsecondary Transcript to the Members of the Postsecondary Electronic Standards Council (PESC) for a vote as a PESC approved standard. Please indicate your vote by checking one of the boxes below:

☐ APPROVE

☐ NOT APPROVE

YOUR NAME: _____

YOUR ORGANIZATION: _____

DATE: _____

ALL BALLOTS MUST BE SUBMITTED TO PESC BY CLOSE OF BUSINESS DATE:

EMAIL: SESSA@PESC.ORG
FAX: 202-872-8857
MAIL: POSTSECONDARY ELECTRONIC STANDARDS COUNCIL
ONE DUPONT CIRCLE NW
SUITE 520
WASHINGTON DC 20036

POSTSECONDARY
Electronic Standards Council

PROXY BALLOT

STANDARDS FORUM FOR EDUCATION
STEERING COMMITTEE ELECTIONS
JANUARY 1, 200X – DECEMBER 31, 200X

PLEASE VOTE FOR FIVE (5) NOMINEES:

	NAME	ORGANIZATION
☐	NAME	ORGANIZATION
☐	NAME	ORGANIZATION
☐	NAME	ORGANIZATION
☐	NAME	ORGANIZATION
☐	NAME	ORGANIZATION
☐	NAME	ORGANIZATION

YOUR NAME: _____

YOUR ORGANIZATION: _____

DATE: _____

ALL PROXY BALLOTS MUST BE SUBMITTED TO PESC BY CLOSE OF BUSINESS DATE:

EMAIL: SESSA@PESC.ORG
FAX: 202-872-8857
MAIL: POSTSECONDARY ELECTRONIC STANDARDS COUNCIL
ONE DUPONT CIRCLE NW
SUITE 520
Washington DC 20036

Appendix C

PESC Guidelines for XML Architecture and Data Modeling

Appendix D

User Guide - XML Registry and Repository for the Education Community