After many discussions with the Board of Directors and the membership, PESC is pleased to announce that development work has begun on its Seal of Approval Program.

As the PESC community produces more standards, the Board of Directors wants to ensure some level of uniformity in implementation among trading partners and wants to ensure that a level playing field is provided in the market for organizations already using and exchanging PESC standards.

While many of the details of the program are yet to be worked out, attendees of both the Fall 2007 Summit in Montreal and the Winter 2008 Summit in Washington, D.C. agreed in open discussions with the PESC Board of Directors that the program should not be overly burdensome to users and implementers and that specific items be addressed to ensure a variety of scenarios related to trading partner conformance.

A white paper written by Andrew Updegrove entitled, “Standards Compliance Certification And Branding In The Information And Communications Technology Sector” provides an excellent overview of why conformance is important and how to best go about it. The paper is available beginning on page 8.

Bill Hollowsky, General Manager of SunGard Higher Education and Director on PESC’s Board, is leading this initiative and submitted a Letter of Intent, which can be found on page 21, to ensure that the standards community is aware of this activity.

Interested parties met on Friday, February 1, 2008 to discuss strategy, plans, and a timetable for the launch of the program. A tentative project plan can be found on page 23. The group will begin meeting regularly each Friday in February at 3pm EST and a listserv (SealofApproval@lists.PESC.org) is available to facilitate discussions among participants.

As with all PESC workgroups, representatives from Member organizations are able to participate. If you are interested in participating in the workgroup, please contact Michael Sessa directly at Michael.Sessa@PESC.org or 202-261-6516.
Tech Corner - Update from the Technical Advisory Board

BY STEVE MARGENAU
GREAT LAKES EDUCATIONAL LOAN SERVICES, AND
TAB CHAIR

Hello from all of us on the Technical Advisory Board! Or TAB for short - just say “Tab”.

This is the first of what will be a regular column in the Standard. We plan on covering topics of interest that will include the work we produce, technology and design hints, and answers to questions we have received from workgroups.

That last item - questions we have received from workgroups - is significant. There has not been a direct communication path between PESC workgroups and the TAB in the past, but we have now created one. Workgroups should email their questions directly to me at smargenau@glhec.org, and I'll make sure those questions are addressed. Something relatively simple could be answered in a short period of time - enough for us to discuss the item on our weekly call. For something relatively complex we can make at least one of our members available for participation in a conference call. It may take a week or two to match someone's work schedule with your call schedule, but we will follow up with you.

We're also taking a look at the best approach for moving away from the current “tier” of schemas that PESC uses to create a standard. By “tier” of schemas I mean using the CoreMain schema and a Community Sector schema when defining a schema for a particular standard (Transcript, CRC, etc). We'd like to move towards creating schemas that are put together from individual component definitions; for example Name, Address, Contact Information, etc. Those components may be copied as-is from the existing CoreMain and Community Sector schemas - or they could be taken from the XML Registry and Repository for the Education Community, located at http://www.fsaxmlregistry.ed.gov/XMLRegistry/pages/welcome.jsp. This is another effort that will unfold over time.

In the mean time we also have a number of work requests from the Steering Committee that we're addressing, and we'll be noting these in upcoming issues.

For now, let me thank you in advance for your interest in our column and in our work. Lastly, if you are a PESC member and would like to participate on the Technical Advisory Board, just let me or Michael Sessa know. We're not short of work, and the more members we have the more work we can accomplish and the greater the sharing of knowledge and ideas.

* The key issue facing the Technical Advisory Board (TAB) at the start of 2008 is how PESC can move away from using the bulky CoreMain and sector schemas. Note that we will still use the components that are defined created before PESC members had experience with application systems that take in and/or produce information formatted as XML. Now it's time for us to review the Guidelines as a whole for any changes that may be needed. Of course, due to the volume of information in the Guidelines this effort will not be happening overnight.

One of the items we’re just beginning to take a look at is the current version of the PESC Guidelines for XML Architecture and Data Modeling (or “Guidelines” for short). Some of the guidelines in that document were

Round Table Discussion

At its Winter 2008 Summit in Washington DC January 17 - 18, 2008, PESC hosted a round table discussion on a number of factors that potentially influence PESC and the standards community both nationally and internationally. A summary of those discussions is located on page 25.
within those schemas to create our usage-specific schemas (such as the College Transcript). We just need to move away from keeping all of our component definitions stored within a schema that serves no purpose other than as a container for those components. Interestingly, the TAB noted that most, if not all, of the issues we have been asked to address or investigate are also related to this key issue.

When we utilize the core components that are defined within CoreMain to create a usage-specific schema (such as the College Transcript) we suffer a consequence that software development tools bring to the table. Not only do the tools bring in the components we want to work with, they also bring in each and every component defined within the CoreMain schema. This creates a number of processing efficiency problems due to the amount of memory needed to create and make available programmatic representations of all the components we don’t need to work with. If we want the education community to make widespread use of the core components we have worked so hard to create and have accepted by that community, we must create our schemas utilizing only the components that are actually needed.

With that in mind, the Technical Advisory Board held an all-day clean-slate brainstorming session on January 17th to explore ways we can move to this new schema creation methodology. We started by identifying the constraints governing such a move, such as schemas defined in this manner must support existing PESC standards, they must provide some sort of documentation as to which components were used to build a schema, there should be an automated and/or visual way to build a schema from individual components, there should be a way to export components and schemas for publication to the community, etc. We reasoned that there may one or more tools that provide some, if not many, of the functions we are looking for. We have been building our components and schemas in a relatively “manual” fashion, and it may be possible to both speed up that process and make it less prone to error if we could find a tool that meets our needs.

During our final session of the day we stepped back from the details of component maintenance and schema creation, and just looked at our current schema creation and update processes. First we listed the steps involved with those processes. Then, keeping in mind the capabilities a component maintenance tool could bring to the schema/component maintenance process, we took an initial cut at how such a tool might fit into the our overall processes. We were pleased with the possibilities we saw, and are beginning to review tools that may meet our requirements.

We will report back on our progress as we realize this change is critical to the acceptance and widespread use of PESC schemas.

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**Tech Corner, from Page 2**

With the upcoming roll-back of the umbrella policy for associations, starting in early May of 2008 PESC will begin notifying associations of their need to identify up to 5 member representatives. The roll-back of the umbrella policy from being totally open-ended to limiting it to 5 member representatives was recently approved by the PESC members during a PESC Membership meeting held Thursday, January 17.

What this means for associations that are members of PESC: employees of an association can participate within PESC at will; as an added benefit an association can pass on to 5 of its members the ability to participate in PESC. Participation beyond 5 member representatives is still available but a fee of $500 will be assessed for each representative beyond 5.

Associations that have questions or concerns should contact Michael Sessa at Michael.Sessa@pesc.org or at 202-261-6516 with questions or concerns.
PESC Workgroups are a Member Benefit

As you may know, participation in PESC workgroups is provided as a benefit of being a member organization in PESC. When an organization joins PESC as a member, any number of representatives from that organization can participate in any number of workgroups. The development and sharing of documentation, conference call services, and administrative support all come free once an organization joins PESC as a member. Membership in PESC also opens up a whole network of human and technical resources including access to data and system providers, to experts in technology and technical issues, and to discounted rates on meetings and conferences held throughout the year. A representative of a membership organization can also serve in a leadership role including Workgroup Chair, Steering Committee member, and Board of Directors member.

To ensure that PESC maintains valuable and cost-efficient services for the organizations that have joined as members and to maintain appropriate administrative support for members and workgroups, effective Monday January 7, 2008, the PESC Board of Directors began imposing its long-standing policy that restricts participation in PESC workgroups to those organizations that have joined PESC as members. "Affiliate" organizations will still receive the same PESC benefits as before, except that in order to participate in one or more workgroups, that organization will need to upgrade to member status. We also know that some organizations have joined our workgroups without becoming members of PESC. National, technical standards are necessary to ensure the efficient and quality exchange of data between colleges and universities and their trading partners. Building and implementing national standards takes a tremendous amount of effort, time, and above all, collaboration. This non-member participation in our workgroups has been valued as it helps build a more stable and usable national standard. Our goal is to maintain this participation in our workgroups and ensure that each organization currently participating as a non-member is able to become a member of PESC. Those organizations that are impacted by this announcement were notified separately in the fall and we are including this information again to ensure its awareness. As you and your organization may not be familiar with all of PESC’s activities, events, and workgroups, let us know if you’d like to meet with us either in person or via conference call so that we can conduct a presentation that will provide you with an in-depth overview of PESC.

Note: Access to standards, the XML Registry and Repository for the Education Community, and the PESC website has been and will continue to remain free and open to the public.

If you are unsure as to whether or not this announcement applies to you and your organization or if you have questions or concerns, please contact either Michael Sessa at 202-261-6516 or at Michael.Sessa@PESC.org or Jennifer Kim at 202-261-6514 or at Jennifer.Kim@PESC.org.

Common Origination and Disbursement

The U.S. Department of Education’s Office of Federal Student Aid (FSA) formally notified PESC that the XML Common Origination and Disbursement (COD) Schema for Federal Student Aid Title IV programs has been submitted to the PESC Change Control Board for approval as a standard. As COD has been in production for a number of years thereby superseding several steps in PESC’s Policies and Procedures, COD will be presented to the public for a 30 day public comment period. Once comments from the public comment period are addressed and resolved, COD will then be issued for a vote to the PESC Members. Approval as a PESC standard requires 80% approval of all members voting. The formal Letter of Intent is on page 30.
At the Annual Fall Membership Meeting held October 15, 2007 in Montreal Canada, members of the Postsecondary Electronic Standards Council (PESC) elected 7 members of the Steering Committee of the Standards Forum for Education. Elected for two year terms that begin January 1, 2008 are:

- Adriana Farella, College Board
- Holly Hyland, Federal Student Aid, U.S. Department of Education
- Robert King, Citibank Student Loan Corp.
- Clare Smith-Larson, Iowa State University
- Adele Marsh, AES, representing EFC
- Richard Moon, SunGard Higher Education
- Eddie Upton, University of Mississippi

Under the guidance of the PESC Board of Directors, the Steering Committee provides overall direction for the Standards Forum for Education and manages all development and maintenance workgroups and boards. Founded on August 4, 2000, the Standards Forum for Education sets and maintains standards for use in data exchanges between colleges and universities and their various trading partners. To date, the Standards Forum for Education has produced 5 PESC approved, community standards (College XML Transcript, Common Record: CommonLine - CRC, the Data Transport Standard, the High School XML Transcript, and Online Loan Counseling), an extensive Policies and Procedures Manual which includes PESC Guidelines for XML Architecture and Data Modeling, Documentation Standards, and in conjunction with the U.S. Department of Education the XML Registry and Repository for the Education Community.

Subsequently, at the Winter 2008 Summit, Steering Committee members elected Eddie Upton from the University of Mississippi as Chair and Bob King of Citibank as Vice Chair. The Board of Directors thanks Adele Marsh of AES who served as Chair in 2007.

The Directors of PESC are pleased to announce the appointment of Brian Allison to the Board effective January 18, 2008. Mr. Allison is Vice President of Technology and Industry Initiatives at USA Funds. He has held various positions within the financial aid community including Co-Chair of NCHELP’s Electronic Standards Committee (a position he still holds) and Chair of the Meteor Project. The PESC Board of Directors appointed Mr. Allison based on a recommendation from Brett Lief, President of the National Council of Higher Education Loan Programs (NCHELP), a founding PESC Member.

1 Most recently, Ms. Farella notified the Steering Committee that she has resigned from the College Board and would therefore need to resign from the Steering Committee. The Steering Committee is currently looking to replace Ms. Farella.
2 Ms. Smith-Larson was appointed to replace newly elected Barry Billing who resigned from OCAS and from the Steering Committee.
Member Vote on Membership Dues

In September 2007, the Board of Directors began discussions about updating the membership dues for PESC. Dues for the most part had not changed ever in PESC’s first 10 years. As a new schedule began to take shape, the Board felt it very important to involve the membership in developing the final schedule. At the Fall 2007 Summit in Montreal, the Board held an open meeting to discuss the proposed dues and also held a PESC member conference call on November 7, 2007. With a number of questions and concerns addressed, a special member meeting was called for on Thursday January 17, 2008 during the Winter 2008 Summit to approve the new dues (per requirements of PESC’s bylaws).

With 38 organizations voting, 29 voted to approve the new dues schedule, 4 voted against it, and 5 abstained from voting. Thank you to all who participated in these discussions and votes. The new dues schedule, on page 31, will begin to take effect upon each member’s renewal of PESC membership starting with July 1, 2008 membership renewal dates. Organizations with renewal dates of August 1, 2008, will experience the new dues on August 1, and so on. Some other thoughts to remember regarding membership:

- Member status is required to participate in PESC workgroups.
- For the US Department of Education, one fee will cover all agencies (FSA, NCES, ED, etc).
- PESC’s umbrella policy for association members will be eliminated effective July 1, 2008.
- In place of the umbrella policy, association members can name up to 5 representatives from their membership organizations to participate in PESC work groups and those representatives will carry the member status and receive full member benefits and privileges. Additional representatives can be added at $500/each. There is no limit to participation for an association’s respective staff.
- Fee changes are subject to approval by PESC members (per PESC bylaws).
- PESC reserves the right to change dues at any time (within the requirements of the bylaws).

Technology Tidbits and Standards Snippets

- According to a presentation given during the XML 2007 Conference, an application architecture that uses XML for data storage and message passing throughout the life cycle of the data can identify problems with the data quickly. XForms fits naturally into such an architecture, as it requires users to enter their data as XML. As a result, XForms provides a direct interface to the power of XML validation tools for immediate and meaningful feedback to the user about any problems in the data. To acces the entire presentation visit, http://2007.xmlconference.org/public/asset/attachment/256.

- Roger Sullivan, Chair, Board of Directors Liberty Alliance recently announced that the Board voted to approve Alex Popowycz (Fidelity Investments) and Frank Villavicencio (Citi) as Co-Chairs of the IAEG. Jane Hennessy (Wells Fargo) and Michael Sessa (PESC) resigned as Co-Chairs.
Blackboard Inc. recently announced the launch of the Blackboard K-20 Connection, a strategic initiative to significantly impact the way K-12 schools and higher education institutions connect and collaborate. The data and market research around the need for K-20 collaboration is clear — an estimated 50% of students entering college do not meet placement requirements, 40% take remedial courses, and over one million students this year will fail to graduate with their high school classes according to the Eduventures ACT Institutional Data File, 2005.

The unification of XML and SQL relational data has taken another significant step forward recently with the introduction of new XML functionality in mySQL. In versions 5.1 and 6.0, mySQL adds the ability to retrieve tables (and JOINS) as XML results, to retrieve SQL schemas as XML files, to both select content via a subset of XPath and to update content using similar functions, and the like. For additional information, visit http://www.oreillynet.com/xml/blog/2007/12/xml_makes_to_mysql.html.

2007 was a productive year for XML. The most sound and fury focused around the standardization of office document formats. But if I had to pick the most important story of the year, I'd be hard pressed to choose between the continuing slow growth of XQuery, APP (Atom Publishing Protocol), and XForms. All have the potential to radically alter the software infrastructure that underlies the Web. To read the full XM: 2007: Year in Review article, visit http://www.ibm.com/developerworks/library/x-xml.

UT Austin Internet Server 'SPEEDEs' Along

December volume included:

- 61,836 TS130 transcripts
- 47,982 TS131 acknowledgements
- 25,523 TS997 Functional acknowledgements
- 110,170 TS189 Admission Applications
- 34,256 TS138 test score reports
- 314,558 total transactions
STANDARDS COMPLIANCE, CERTIFICATION AND BRANDING
IN THE INFORMATION AND COMMUNICATIONS TECHNOLOGY SECTOR

Andrew Updegrove

Abstract: While a standard can provide value to a vendor through facilitating the design and production process, its greatest benefit arises when multiple stakeholders are made aware that a product or service complies with that standard. In order for such a benefit to be secured, however, the assertion of compliance must be trusted, and that trust must be validated by actual performance in the marketplace. In some circumstances, awareness of compliance is needed only on a business-to-business basis, while in others consumers must be made aware – or by experience find that they can take for granted – the fact that compliance goals have been achieved. However, the creation of tests to demonstrate compliance, and the performance of such tests, can be expensive, and not all standard setting situations generate the desire, investment and infrastructure needed to fund neutral third party testing and certification. This is particularly true in the information and communications technology (ICT) industry, in which interoperability among the products of diverse manufacturers is nonetheless an essential requirement. As a result, a variety of techniques have evolved in the trenches to address this need in a situation-specific manner, from self-assertion of compliance with standards, to industry-wide certification programs that support expensive consumer brand-awareness building campaigns. This article surveys the principal certification and branding needs, realities and practices that can be found in the ICT industry today.

Introduction: Standards have value to many constituencies, but their most obvious beneficiaries are those that utilize standards in the production of goods and the delivery of services, and those that consume those deliverables. While vendors often benefit from using standards simply as production tools (e.g., to achieve interoperability between products from the same vendor), the greatest value of a standard to vendors and consumers alike can arise from simply knowing that a product or service complies with a standard.

For example, performance standards (e.g., how many watts of energy a light bulb will draw, and how many lumens of light it will produce) permit vendors to provide products that customers can easily evaluate, and allow customers to compare prices between competing products. Similarly, vendors increasingly adopt and implement interoperability standards that allow their products to access networks of all types in order to make those products more useful and desirable, and customers rely on built-in "plug and play" interoperability in order to mix and match components of everything from music systems to home wireless networks.
In order for such benefits to exist, however, customers need to be able to rely on, and therefore trust, the fact that a product that purports to comply with a standard actually does. Such trust can be based upon any of a number of means, including vendor assertions, if the vendor has earned a reputation for trustworthiness, or on third party testing and confirmation of compliance. With respect to that subset of standards that is created by governments (laws and regulations), the assurance of compliance may result from government inspections, licensures and enforcement.

Private sector assertions of compliance are often loosely referred to as "certification," in the sense that someone (whether the vendor or a third party) is promising that the good or service complies with the standard. More properly, the word "certification" is usually used only where a neutral third party is providing the assurance of conformance. Regardless of who is making the guarantee, however, the value is roughly the same, if the claim of compliance is accepted and relied upon in the marketplace.

That value can be augmented by focusing customer attention on the benefits of purchasing products that comply with a standard. Such building of "brand awareness" in a standard can be just as useful as building customer awareness of an individual vendor's trademarked products. Moreover, the costs of building brand awareness in a standard can be shared among many vendors, thus lowering the per-vendor cost of a promotional campaign by leveraging the efforts of the many campaign participants.

In this article, I will survey the principal means by which information and communications technology (ICT) industry compliance testing tools are created, the most common types of programs employed to perform and certify successful passage of compliance tests, and the ways that vendors build compliance brand awareness through the promotion of certification programs.

I. Overview

Why test for compliance? As with so many other aspects of standards and standard setting, the concept and practice of certification extends back into the dim reaches of antiquity. The first known examples of certification relate to weights and measures, as evidenced by metal ingots stamped with royal seals that attest to purity and weight. The evolution of coinage systems in many societies was a manifestation of the same certification concept, using the impressed (and sometimes idealized) likeness of a ruler on each coin to attest to the exact value (also sometimes idealized) of the precious metal comprising the coin.

Certification of compliance with standards relating to safety, on the other hand, has roots in the private as well as the public sector. For example, the development of standards to ensure the safe design and building of steam boilers arose not from a government effort to prevent boiler explosions, but from a private vendor initiative launched to reassure both the public as well as insurance underwriters that installing boilers would not lead to disaster. But over time government regulators became pleased to incorporate by reference the fruits of such private initiatives into the regulations they create in an effort to maintain public safety.

By 1984, for example, voluntary compliance standards created by the American Association of Mechanical Engineers (ASME) to ensure that heat sources would automatically shut down
before boilers could run dry (and sometimes explode) had been adopted into law by 46 states and all ten Canadian provinces. And in the private sector, the ubiquitous Underwriters Laboratories "UL in a circle" mark (and its many related marks) is well recognized by U.S. consumers as a trusted indication that products bearing the mark have been designed to criteria that the UL believes to be conducive to safe usage.

In more recent years, certifications of all types have become omnipresent – attesting to the weight, quality, purity, safety and other significant attributes of goods as diverse as building materials, drugs, foods, appliances, elevators, services of all types, and more recently, advanced technology products and sustainable forest management. These certifications attest to compliance with the standards promulgated by a wide variety of bodies – Federal, State, and more recently, regional (e.g., the European Union) governments and agencies, safety testing organizations, accredited private sector standard setting organizations, and unaccredited consortia, trade associations, environmental foundations, and other fora. Within some of these broad categories there may be hundreds of individual standard setting bodies, some of which develop and maintain many, and even thousands, of standards. One site, http://www.nssn.org, tracks the status of some 270,000 current standards worldwide.

Standards themselves can be of several types, permitting varying ways to comply, as well as different processes to verify compliance. For example, performance standards define required outcomes, but not the design elements required to achieve those outcomes. As a result, they permit a vendor to design a product using a variety of techniques (patented and otherwise), so long as the resulting product meets the established performance measures. The techniques used to certify compliance with such products must therefore accommodate the different types of products designs so utilized.

Products built to design standards, on the other hand, must conform to more detailed and exacting specifications, so that all electrical plugs of a given type (for example) will fit into all electrical sockets intended to accommodate them. Compliance testing techniques for this type of standard can therefore be as simple as measurements of physical dimensions. A given standard can incorporate both performance and design elements as well as diverse criteria, including the composition of component materials, physical dimensions, minimum outputs and maximum tolerances.

Interoperability standards, from the compliance testing point of view, can be another type of amalgam, in that design elements are specified, but their compliance (as in software) may need to be inferred from performance tests that prove or disprove success in achieving compliance.

Why brand? Compliance testing of products is very widely used by vendors to ensure that their products will perform as expected, will meet regulatory requirements, and/or will be safe to use. Certification of compliance also bears an important role in international trade, where the importation of products may be preconditioned on proof of compliance with applicable standards. This extra effort taken to demonstrate compliance with standards is usually invisible and unknown to purchasers, or taken for granted by consumers in the case of safety standards in well-regulated societies.
The reason that vendors do not go to greater lengths to publicize their efforts to achieve compliance or formal certification is because the means required are expensive, and compliance may not be sufficiently important to a consumer to warrant the extra marketing and promotional resources required to raise customer awareness.

**Competitive formats:** In today's interconnected world, however, there is increasing demand for certification mechanisms that can assure consumers as well as vendors that their expectations will be met when they make a purchase, whether they are aware that that expectation relates to a standard or not. Visible evidence of such certification can be useful in the consumer realm to convey the message that a product will perform and be usable as desired. This is particularly true where new products are being introduced that rely on interoperability to provide value, and where consumers are aware that multiple, incompatible types of products are being sold that are visually indistinguishable, but for a distinctive logo or label text.

In the late 1970s and early 1980s, for example, it was essential for video vendors to indicate, and for buyers and renters of videotapes to carefully look for the label stating, whether a given title conformed to the VHS or the Betamax video format. The same is true today as the next generation of DVD players and discs is now being introduced into the marketplace. Just as before, two competing (and incompatible) formats are once again being promoted, one called HD-DVD, and the second Blu-Ray. Initially, the vendors of each camp will seek to persuade consumers that their technology is superior, and to build brand awareness around their format mark. After a given consumer buys a player that conforms with one format or the other, however, the principal value of the format label will not be as a brand, but as a conformance mark on a DVD, in order to allow the consumer to avoid buying or renting a disc that proves to be unreadable on the particular player she now owns.

**New networks:** Other common examples of such visible certifications, promoted as actual brands but of value to consumers for more utilitarian means, include the logos that appear on ATM machines, informing a user whether a given terminal will accept a credit, debit or bank card from the network (e.g., Star or Cirrus) with which that card is registered. Today, most bank ATMs are compatible with the cards of a wide variety of issuers, and arrangements have been made between banks and those issuers to reconcile accounts behind the scenes for most customers. But initially, these networks were more limited, and the marks displayed on cash machines therefore had a higher value to individuals on the lookout for an ATM that could satisfy their need for instant liquidity.

Whether or not branding as well as certification makes sense to vendors and service providers - and to what degree – therefore depends on market circumstances. In the ATM example, there is no tolerance for error, because the results are binary: either the card can or can't be read, from the technical perspective, and the transaction will or will not be accepted, at the commercial level. When someone sees a Cirrus logo on an ATM, they expect their card to be honored, even if the user has no knowledge what the "Cirrus" network is, who designed it, or how it operates. The value that the consumer does appreciate is that there are hundreds of thousands of ATMs worldwide that bear the Cirrus logo, and into which the holder of (for example) a MasterCard can insert that card in order to obtain cash.
**Vendor needs:** In the world of non-consumer goods, the standards-based goals of commercial vendors may vary widely. In some circumstances, standards and credible certification mechanisms may make it easier for a new market to develop because one vendor will have a greater degree of confidence that the products reaching the marketplace will indeed be interoperable. Similarly, the existence of certification options may make it more worth a vendor's while to create products that comply with one standard rather than another, not only because the certification option has independent value, but because it knows that other vendors will be more likely to choose the standard supported by certification. Since a standard only becomes useful through wide adoption, implementing the standard supported by certification therefore becomes the safer, as well as the higher value, decision (all other things being equal). In this type of case, there is no incentive to create public brand awareness at all. Instead, a much more targeted, but no less important, campaign is needed to educate the vendors in a given product space that not only a standard, but a supporting certification mechanism is available to reward them for adoption. In many cases, the existence of compliance tests, even without a formal certification program, will still be attractive, because the compliance tests will be useful as tools to assist a vendor in discovering those changes in its product design that are required to achieve compatibility.

**Product identification:** The value of certification and branding can also fall somewhere in between. This is because standards "brand awareness" is more common than most consumers might suspect, with much of the public being unaware that a heavily promoted brand utilized by multiple vendors actually relates to a standard. A current example is the explosive use of "WiFi" enabled equipment, from laptops to home network routers, all of which achieve their unique value through compliance with one or more of the IEEE 802.11 family of wireless connectivity standards.

In this case, the WiFi Alliance, an unaccredited consortium, acts as an auxiliary to IEEE, an American National Standards Institute (ANSI) accredited, global standards development organization (SDO). The WiMedia Alliance rapidly creates test suites for each WiFi standard as it is completed, and then offers certification testing to permit vendors to refine their designs to achieve interoperability, and then advertise their compliance through use of WiFi trademarks licensed from the Alliance after their products pass the required tests.

The result is akin to the "Intel Inside" branding campaign, but with important differences. In the Intel case, Intel customers are able to borrow on the reputation of the best-known semiconductor manufacturer, and Intel benefits from the increased advertising – but Intel remains in sole control of the design of its chips, and the use and ownership of the "Intel Inside" trademark. With WiFi, the 250 members of the WiMedia Alliance control the process of test suite creation, certification testing and brand promotion. To the customer, however, the result is much the same: greater assurance that expectations will be satisfied when a purchase is made. Even if they don't really know why.

II Certification Processes
Except in certain government-regulated areas where determination of compliance must be confirmed on-site (e.g., in the case of building codes and food preparation), certification tests and test facilities must usually be created by the private sector, either under the auspices of an existing standards development organization, by for-profit companies, or by means of a new entity created for a specific purpose.

In recent decades, more and more ITC standards have been created not by accredited standards development organizations (SDOs), but by unaccredited consortia. However, while a standard setting organization (SSO) of either type may be quite able to fund and manage the development of a standard, SSOs in general, and consortia in particular, are most frequently low-budget operations. Moreover, in the world of SDOs, there is a history of separation between the standards creation process and the compliance testing function, each of which is conducted by a separate organization.

This can lead to a lack of certification options, especially in the information technology (IT) industry, which is typified not only by expensive research and development costs, but also by briefer product lifespans than is common in many other industries. Because development of a robust test suite implemented in software (as compared to a set of detailed questions attesting to internal design compliance and self-testing) can be quite expensive, that cost is likely to exceed the financial resources of the organization that has created the standard in question, even though the actual process of certification testing might be self-funding once the test itself has been developed.

Because the number of vendors building products to a given standard may be low relative to the cost of creating a test suite to confirm compliance, it is also usually the case that a private testing service would be unable to recover its development costs to create the test suite needed before it could offer certification services. Consequently, where robust test suites are developed at all, they are often funded by consortium dues or by a government or other grant, or the test suite is developed and contributed by the same member that initiated the creation of the standard to which the test suite relates.

The same challenges that stand in the way of test suite creation also arise in the context of certification testing. In the case of actual interoperability or software-driven testing, expensive test equipment, facilities and personnel may be required, as well as administrative support. Once again, such costs exceed the budgets, staff and physical resources of many SSOs. On occasion, however, a third party can be found to provide testing services once the development of the test suite itself has been funded or arranged through the consortium's own devices of one type or another.

As a result of the financial challenges of instituting a formal third-party certification testing program, compliance programs and processes are therefore far from uniform. Certification programs in the ITC space have therefore evolved that fall across a range of increasing cost and credibility, ranging from very low-budget self-assertion (and therefore low trust) programs, to costly third-party programs that may provide much higher credibility and value.
**One on one systems:** The following are representative (although not exhaustive) of the levels of compliance testing and certification that can be found in the ITC industry today where the parties to the process are the vendor and the SSO or a third party verifier.

**Self-Assertion without a Test Suite:** At the most modest end of the scale is *self-assertion*, which is not a certification process at all, in any true sense of the word. In this model, the vendor simply asserts that its product conforms to a given standard, and there is no third party verification of either the result, or the means by which the vendor reaches its conclusion. Where this is the best that can be done, it is important for a consortium to make it clear that only limited credibility should be given to such assertions, and that the marketplace understands that no formal certification process is in place.

As a result, the term "certification" should not be used in connection with a self-assertion program. Rather, the implementers of standards in this setting should only be permitted to assert "compliance with", or "conformance to," a standard or specification. Self-assertion programs are quite common for primarily informational purposes, notwithstanding the limited level of credibility that they are likely to offer. One reason is that, unlike safety features in consumer safety products, interoperability failures in ICT products do not typically lead to dire consequences, and the government therefore has not to date found it necessary to focus on this area. Further, vendors can acquire an individual reputation over time for being trusted (or not) when they self-assert compliance, since customers will swiftly learn whether or not the product in question is truly interoperable with other equipment or software believed to comply with the same standard.

Second, a wide range of factors (besides cost) may preclude the ability or interest of an SSO to create a test suite and/or engage a third party testing service. For example, the commercial value of compliance may not be high enough, or the standard itself may not be sufficiently robust enough to achieve a conclusive result, and therefore compliance with the standard alone would not imply a result that has significant public commercial value. Where cost is the true reason, however, the achievements of the affected organization may be more modest than those of another group that is capable of supporting a full certification program, especially where reliable interoperability is highly important to the end user.

**Self-Asserted Compliance (or Self-Certification):** In this model, some type of test suite exists (although it may be a "paper test" that states required results of one sort or another), but the vendor performs the test itself and asserts success. In some cases, there may be little effort to publicize the fact that a product meets the test, because the test suite has been created primarily as a tool for vendors to use in order to achieve interoperability or another goal at a lower cost. In other cases, credibility is an important goal, but the consortium has not been motivated, or able, to arrange for verification. As a result, only a very modest increase in trust may be gained over self-assertion of compliance, since only one leg (thoroughness or rigor of test) has been strengthened, but not the other (independent verification).

**Self-Certification with Verification:** If a higher degree of credibility for the certification program is deemed to be desirable, the vendor is required to return some type of evidence of satisfactory test completion to the SSO (or a third party) for verification. The deliverable
typically will be a paper or electronic record of the test results, with the credibility of the
program relying in part on how stringent and conclusive the test suite provided may be. Again,
depending on the consortium’s resources and the degree to which vendors are willing to pay
certification fees, the report may either simply be filed away to create what is essentially a record
of self-assertion, or may be examined for completeness and consistency, but not otherwise
directly confirmed by an independent test of the product. Hence, an element of unsupported trust
is still involved, and the credibility of the certification is therefore still qualified.

**Third Party Testing:** This is the highest standard of formal testing, since the vendor must
submit its product to a third party for testing. However, the efficacy of testing may vary widely,
being limited in part by the sophistication of the standard to which the test applies (some
standards are very detailed and comprehensive, while others are less so), and the effectiveness of
the test itself. Hence, a product built to one standard which successfully passes certification
testing may indeed "plug and play" with another compliant product, while a product built to
another, less comprehensive standard may require further refinements in order to reliably
interoperate. The degree to which a standard is capable enabling full interoperability is also
affected by factors other than technical challenges, including political compromises (such as
permitting alternate ways to implement a single element of a standard) among members that are,
after all, usually competitors.

With third party testing, the final results are often submitted to the SSO, which will then issue
the actual certification, along with a license to use its trademarks in connection with assertions of
satisfactorily passing a certification test.

**Other Processes:** There are other mechanisms besides certification testing that a consortium
may take to increase the credibility of its standards and/or assist its members and other
companies in achieving a high degree of compliance.

**Interoperability Testing:** In some cases, a third party testing service may be engaged to run
submitted products directly against other compliant products, in addition to (or instead of)
running them against the test suite. In others, a consortium may set up such an "interoperability
center" itself (usually at a member site or at a trade show) to which members may (or in some
cases are required to) bring their hardware and software products and run them against each
other, in order to work out final interoperability issues not able to be resolved by means of a test
suite.

The purpose of such testing can be either very secret or very public. In the former case, stringent
confidentiality agreements may be utilized, particularly where the testing being conducted relates
to products that are not yet announced in the marketplace, and/or where the failure of a product
to demonstrate interoperability could have a negative impact on sales. In this case, the purpose
of the exercise is all about compliance confirmation and not at all about branding.

At the opposite extreme is the very much public "plug fest" at a trade show, where multiple
vendors demonstrate the interoperability of their products. In this case, the purpose is entirely
brand-related, since no vendor would wish to publicly demonstrate the non-compliance of its
products, and confirmation of interoperability is usually therefore tested in advance.
In each case, although the activity in question may not be part of the formal certification testing process, it provides another example of the way in which an SSO may initiate and coordinate activities in order to lower costs and improve outcomes for its members in support of the standard that it has developed.

**Reference Software:** In some cases, an SSO will provide actual software instantiating a specification. The software is often made available in both source code as well as object code form, and is commonly referred to as a reference implementation. Where such software is available (sometimes only to members, and at others as a free download from the consortium's website), an implementer is spared the expense of developing its code to comply with the standard.

One common reason for the existence and use of reference software is that a member may have already created it for its own purposes, and is willing to make it freely available to all in order to reap some greater benefit from wide adoption of the standard. Another reason may be that a standard has been created in a patent-rich environment, and there is a common benefit to be gained from the availability of an implementation of the standard that is not believed to infringe upon known intellectual property rights of (at least) members. While the primary motivation may therefore not be to save compliance testing time and expense, those indirect benefits automatically follow.

**III. Trademarks and Branding**

While discussing intellectual property concerns in standard setting almost always focus on patent and copyright issues, trademarks play an essential role as well. The reason is that while patent law may control what can be in a standard, and copyright law protects the text of the standard itself, only trademark law provides the means to control whether or not a vendor is entitled to claim that its products actually comply with a standard.

**Using Trademarks to Enforce Quality Control:** As noted earlier, standards need to be credible in order to have value. This is because standards are only useful to a customer to motivate a purchase, or to a vendor to secure market advantage, when the promise they make is valid (e.g., a brand request to "buy this because it will work with that" only works if in fact "this" really does work with "that"). Moreover, if a vendor asserts compliance where compliance does not exist, an end user may be unable to tell whether the fault lies with a non-compliant product or with an inadequate standard. As a result, not only the vendor that failed to comply loses credibility, but all products of all vendors that assert compliance with the same standard will lose credibility as well, and the goals of the SSO that created the standard and its members will be defeated.

False claims of compliance are therefore of great concern to SSOs and to end users alike. Where an SSO gives a name to a standard and the public knows the standard by that name alone, then the SSO may prevent false claims of compliance from being made by withholding the legal right of the offending vendor to refer to the standard in connection with a non-compliant product.

While it is not legally necessary to obtain a formal trademark registration in the United States on the name of a standard in order to own all rights to its usage, it is prudent to do so, since the cost is modest in comparison to the benefit of putting the world on notice that the SSO owns the
trademark. Since it is widely known that it has become very simple to perform an on-line search of issued trademarks, obtaining a trademark registration will also make it far less likely that someone else will begin to use the same, or a confusingly similar, name for its product or service. As a result, there will be less potential that someone else's actions will dilute the value and effectiveness of the SSO's mark, or that the SSO will be put to the trouble and expense of asserting or defending its trademark.

However, since ITC standards are usually intended for global adoption, it is important to undertake an analysis in order to settle upon a cost-effective strategy for protecting a mark, due to the fact that a commercial-scale, global trademark program would invariably be prohibitively expensive. Fortunately, the trademark convention in Europe now permits a single filing to secure rights in multiple countries, and a very large proportion of sales of certified products are usually expected to occur in a comparatively small number of first world countries. The result is that it is possible to achieve a very meaningful degree of protection by obtaining trademark protection in just the United States, Europe and selected Pacific Rim countries. Such a measured program of trademark registration can be completed within the budget of most SSOs.

Using Trademarks to Associate Value with Products: The term "branding" usually connotes a use of trademarks that is broader than simply policing compliance. Rather, it seeks to associate value with compliant products in the mind of the buying public that relates to the purpose for which the standard was created, rather than simply with compliance with the technical elements of the standard itself. For example, the right to include the familiar "Dolby" brand logo on a product, indicating the use of patented Dolby noise-suppression technology, was a valuable product differentiator in the early days of tape decks. More recently, the earlier noted "Intel Inside" ad campaign provides an example of a brand usage that is intended to promote the goodwill of Intel as much, if not more, than the vendor of the product in which the chip finds a home. In sum, Intel is seeking to create a market perception that its technology represents a "standard of excellence and innovation" with which consumers should associate added value.

Where a branding campaign is to be launched in connection with a certification program, however, a much larger budget is required. To be effective, such an initiative also requires the active cooperation of SSO members, who should place certification logos on their compliant products, packaging and advertising in order for the program to be truly successful. Often, engaging the cooperation of the marketing departments of large corporate members proves to be an insurmountable hurdle, regardless of the fact that the same companies may have invested heavily in creating the standards to which the certification and branding would apply. Nonetheless, as the video format and ATM examples discussed above illustrate, branding may be vital in persuading the marketplace to buy (or, in the case of the credit card, to buy into) new classes of products and services, and the costs of brand creation may therefore prove to be wise, or even unavoidable, investments. Absent such a program in the video example, many consumers might have shied away from purchasing or renting any products at all while the vendor community engaged in its standards war.

The costs of brand maintenance in such an example may also be finite. After a single standard "wins", or after interoperability issues are resolved between competing standards, the brand may
be allowed to languish, as an end-user comes to take interoperability for granted, and expects that all products, regardless of the technology upon which they are based, will be usable in connection with all other logically related products.

For example, today the user of an ATM is not likely to look for, or even notice, the multiple acceptance network logos on an ATM, because such a high degree of technical interoperability and business reciprocity has been achieved that virtually every ATM will now accept almost any and every card, regardless of the issuer. Similarly, after the VHS format vanquished Betamax, video rental and consumer electronics stores discontinued stocking Betamax products entirely, making the use of the mark "VHS" no longer meaningful in anything other than an historical sense. At that point in each example, the brand had already done its job, although the certification process continued to live on unnoticed by consumers in order to confirm actual compliance with the VHS standard for the benefit of manufacturers.

**Summary:** Notwithstanding the costs and constraints associated with developing, administering and participating in standards certification programs, vendors and service providers nonetheless voluntarily implement and comply with hundreds of thousands of standards, because they believe that the benefits of compliance outweigh the costs. Since one of the anticipated benefits in complying with standards is increasing sales through customer awareness of product compliance, vendors are often willing to make promotional investments in conducting standards-based brand awareness campaigns as well.

When the certification process works best, larger markets for goods and services are created more quickly, and end users are better served by the greater likelihood that their purchase expectations will be fulfilled. While providing conclusive certification testing in every market situation is not necessary, cost constraints would often render this goal infeasible in many situations in any event. In response, the marketplace has evolved multiple levels of compliance assertion and testing that can provide both cost effective as well as meaningful comfort in a variety of different situations, to the ultimate benefit of vendors and end users alike.

**End Notes**


2. Like virtually all compliance testing organizations, Underwriters Laboratories does not test and certify every individual product. Instead, it tests samples, and then allows its marks to be displayed on products that the manufacturer attests are consistent with the tested sample. Current UL marks can be viewed at this page of the UL Website: [http://www.ul.com/marks_labels/mark/art.htm#ul](http://www.ul.com/marks_labels/mark/art.htm#ul) (accessed July 29, 2006).

3. Prohibiting the use of compliance testing to favor domestic industry by making it difficult, expensive or impossible for foreign goods to be imported is a goal of the World Trade Organization's Agreement on Technical Barriers to Trade. Before the enactment of such laws,
countries would frequently require local compliance testing of goods that had already been tested elsewhere instead of respecting the certification already granted by a neutral, but non-domestic, testing service.

4. While each format has its own differentiating features, these features tend to be of greatest interest to distinct stakeholders (e.g., content owners, hardware vendors, software vendors, and so on) rather than to all stakeholders. As a result, if one format is "better" for the consumer, it will only be likely to win the current standards battle by coincidence. For an example of the hundreds – if not thousands - of articles that have been written over the past several years assessing the advantages and chances of one format over another at any particular point in time (a search of "HD-DVD vs. Blu-Ray features" at Google yields 2,450,000 hits), see: Perenson, Melissa J., More from the Blu-Ray vs. HD-DVD Front. PC World.com (November 15, 2005), at <http://www.pcworld.com/news/article/0,aid,123491,00.asp> As of this writing, it is uncertain which format – if either – will ultimately prevail. For an example of a current analysis on that question, see: Belcher, James, Blu-ray and HD-DVD: Only One Winner? Or Two Losers? (July 26, 2006) EMarketer.com, at <http://www.emarketer.com/Article.aspx?1004082>.

5. While there is consensus on not using the word "certification" in connection with self-assertions of compliance, there is no general agreement on whether, or how, to use words such as "compliant" and "conformant" across SSOs. As a result, it is important for an SSO to define with precision which word(s) may be used in connection with the performance of what types of tests in connection with its standards, so that the marketplace understands what a vendor is saying when it uses a permitted term.

6. While the use of trademarks in certification and branding programs has many similarities to the usage of the same tools in connection with building brand awareness in support of proprietary products, there are also important differences, not all of which are immediately obvious. For example, while marks designated as "certification marks" can be registered in some (but not all) countries, it may be appropriate to use trademarks, service marks or certification marks (and sometimes all three) in support of a given standards effort, depending upon the goals and circumstances in a given case. A detailed review of this topic is beyond the scope of this article.

7. Exercising a sufficient degree of "quality control" over a widely used trademark is a sensitive issue for SSOs, which commonly do not have the resources needed to police the usage of their marks to the same extent as commercial entities. As a result, it is essential for an SSO to institute good practices with respect to each standard as soon as it is complete, to prevent members and others from taking actions (such as incorporating the name of a standard into a product name) that could result in the mark becoming generic.

8. One of the first consortia that the author represented was formed to initiate a very ambitious certification-based branding program. The most interested members paid hundreds of thousands of dollars in annual dues to fund the development of sophisticated hardware and software certification suites and the founding and staffing of a sophisticated interoperability testing center. However, few – if any – members actually branded their products with certification marks after their products had been proven to be compatible. The author has ensured that every
consortium he has helped structure since then has included a marketing committee that is co-
equal with the technical committee from the date of formation, in order to make it more likely
that both the marketing, as well as the technical management of member companies would be
committed to achieving the goals for which the consortium was founded.
February 1, 2008

Michael Sessa  
Executive Director  
Postsecondary Electronic Standards Council  
One DuPont Circle – Suite 520  
Washington, DC 20036

Dear Michael:

On behalf of the PESC Board, I am submitting this proposal to work collaboratively with the PESC member community to develop a PESC Seal of Approval process.

This collaboration will result in the development of a program that allows interested users of PESC Standards to apply for and receive an official Seal of Approval. The PESC Seal of Approval helps the community and members to determine who has received a Seal of Approval or who is in the application processes when distinguishing between a number of products. The Seal of Approval also offers exposure to these products and an affirmation by the PESC members that the approved products have followed certain PESC standards and processes.

Attached is brief business case which includes an overview, justification, and a description of the planned collaboration.

The PESC Board looks forward to working with the community to develop this process. Please contact me at bill.hollowsky@sungardhe.com if you have any questions.

Sincerely,

Bill Hollowsky  
PESC Board Member  
General Manager, SunGard Higher Education
Overview

The Postsecondary Electronic Standards Council (PESC) is a non-profit, community-based, umbrella association of colleges and universities; professional and commercial organizations; data, software and service providers; and state and federal government agencies. PESC’s mission is to lead the establishment and adoption of data exchange standards in education. The goals of the mission 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.

To support the mission while growing and protecting the PESC brand, the Board formed a subcommittee to research a certification and seal of approval program. In conclusion, it was recommended that a member working group be formed to create a seal of approval program.

Justification

Standards provide value to many constituencies from improved services to lowered costs but a key benefit is when the community is made aware that a product complies with a standard. In order for the community to benefit, there should be a program that asserts some level of compliance or approval.

With the PESC approved standards increasing and adoption steadily increasing, many constituencies wonder which vendors use and comply with PESC Standards. Today, PESC has no official means to document, approve, or assert compliance with the community approved standards.

The PESC community and Board realized the importance providing such a program.

Planned Collaboration

It is proposed that an official working group be established to develop and launch a Seal of Approval program.

The Seal of Approval program will be developed as follows:

- PESC will assist with community notification of the project to ensure wide community support and participation.
- A work group will be formed and will determine appropriate polices and procedures.
- Co-chairs will be selected from the group of interested community participants. The co-chairs will be responsible for scheduling the conference calls, laying out the project plan, following the project plan, and providing written reports to the PESC Standards Forum Steering Committee.
- All interested parties will work together to identify the necessary data elements and negotiate the definitions and facets of each of the components.
- Once the program is defined it will be submitted to the PESC Submission Advisory Board for review and approval. The PESC Submission Advisory Board will then submit the components to the PESC Change Control Board for review and approval.
- After program is approved, it will undergo a 30-day community comment period. Community comments will be reviewed and changes made as necessary.
- Following the community review, the PESC membership will vote to accept the new program.
- If the PESC membership votes to accept the new standard, then the PESC Board of Directors will ratify the vote and release the necessary related documentation.
# PESC - Seal of Approval Draft Project Plan

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<td>Thu 6/12/08</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Establish &amp; Formalize SOA Review Panel</td>
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<td>Fri 5/2/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Establish Priority Focus (Transcripts, DTC, CRC, OLL)</td>
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<td>Mon 5/5/08</td>
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<td>Fri 5/16/08</td>
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<tr>
<td>32</td>
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<td>Mon 4/14/08</td>
<td>Fri 4/18/08</td>
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<td></td>
</tr>
<tr>
<td>33</td>
<td>Solicit SOA Applications from Candidates</td>
<td>Mon 4/21/08</td>
<td>Fri 5/16/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Web Site</td>
<td>Fri 3/21/08</td>
<td>Thu 5/8/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Design SOA section for PESC web site</td>
<td>Fri 3/21/08</td>
<td>Thu 4/10/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Design status/mapping/progress</td>
<td>Fri 4/11/08</td>
<td>Thu 5/1/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Deploy web site changes</td>
<td>Fri 5/2/08</td>
<td>Thu 5/8/08</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>Fri 3/7/08</td>
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<tr>
<td>40</td>
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<td>Mon 4/14/08</td>
<td>Tue 5/13/08</td>
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<tr>
<td>41</td>
<td>Issue Press Release 3</td>
<td>Wed 5/14/08</td>
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<td></td>
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<tr>
<td>42</td>
<td>Publicize in Standard 1</td>
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<td></td>
</tr>
<tr>
<td>43</td>
<td>Publicize in Standard 2</td>
<td>Wed 1/30/08</td>
<td>Thu 2/28/08</td>
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</tr>
<tr>
<td>44</td>
<td>Publicize in Standard 3</td>
<td>Fri 2/29/08</td>
<td>Mon 3/31/08</td>
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<td></td>
</tr>
<tr>
<td>45</td>
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<td>Tue 4/1/08</td>
<td>Wed 4/30/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Execute First SOA Application</td>
<td>Mon 5/19/08</td>
<td>Fri 9/19/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Issue first SOA</td>
<td>Mon 5/19/08</td>
<td>Fri 6/27/08</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Issue second SOA</td>
<td>Mon 6/30/08</td>
<td>Fri 8/8/08</td>
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<td></td>
</tr>
<tr>
<td>49</td>
<td>Issue third SOA</td>
<td>Mon 8/11/08</td>
<td>Fri 9/19/08</td>
<td>0%</td>
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Context

The Round Table had two parts. Three presentations in the first part were activities that may affect PESC priorities. Dave Moldoff, AcademyOne Inc. and PESC Board, reported on his participation in the Rome Workshop, November 9, 2007, sponsored by three companies interested in automating the exchange of academic data within the 45-country European Higher Education Area (EHEA).¹ The group expects to create a European Union data standard and is recommending the OSCI (Online Services Computer Interface) protocol for web services (XML/SOAP/WS-*) data transport. Tim Cameron, the Meteor Project, reported on new initiatives that may expand the Meteor network. Jim Farmer reported on the Kuali initiatives.

In the second part, a general group discussion focused on whether these activities should change PESC priorities or activities. This ended with a question about recommendations to the PESC Board; all participants gave their suggestions.

Exchanging Academic Data – Dave Moldoff

Dave began emphasizing the cultural difference between higher education in Europe and in North America. He said tradition is more important in Europe—some of these universities have been operating for 1,300 years.² At the same time, Europe has adopted new technology with ubiquitous broadband and text-messaging cell phones. The Bologna process facilitates transferability of credit for academic work or training.³ At this time the focus is on programmes recorded as electronic diploma supplements, but courses—similar to the U.S. definition—will follow. Dave said he told the Workshop “standards are not standards until there is widespread adoption.” He also said the Workshop had not considered the automation of course credit equivalencies; he responded to questions about the purpose and use of AcademyOne by colleges

¹ The European Community permits the participation of countries outside the European Union. EHEA includes the Russian Federation among other non-European countries. Several Latin American countries, including Mexico, have asked about participation as well.
² According to Wikipedia “The University of Constantinople, founded in 849 in Byzantium is considered by some to be the earliest institution of higher learning with some of the characteristics we associate today with a university (research and teaching, auto-administration, academic independence, et cetera), though it was not considered a "degree-granting university". The first university in the modern sense, which issued academic degrees, was the University of Al Karaouine in Fez, Morocco, … [founded] in 859. The University of Bologna (1088) in Italy, the University of Paris (c. 1100) in France (later associated with the Sorbonne), and the University of Oxford (11th century) in England.”
³ Training in the sense of formal apprenticeships or on-the-job training.
and universities as an example. The Workshop focused on CDM, the course specification referred for CEN (European Committee for Standardization) standardization.\textsuperscript{4} Dave commented on the young entrepreneurs hosting the Workshop: Simone Ravaioli, Kion Spa and Manual Dietz and Stéphane Velay, unisolution GmbH.\textsuperscript{5} He said Kion was government sponsored (in the U.S. it would be called an NGO non-government organization).\textsuperscript{6} All three are in their early 30s, speak English well, and have the characteristics of the young entrepreneurs who founded higher education software firms in the U.S.\textsuperscript{7}

The Workgroup expects to meet again in Dublin in March. Dave said he expects to represent PESC at the meeting.

The Meteor Project and Network – Tim Cameron

Meteor Network traffic continues to increase; 2007 statistics should be available soon. Meteor has realized an over 600\% increase in usage since access to students was first made available in 2006. The Meteor project team is currently working on two pilot implementations for early 2008. The first will establish colleges and universities as Authentication Agents to the Meteor Network. This will allow students to access the Meteor Network utilizing their campus authentication.\textsuperscript{8} Additionally, he commented on a custom application which will combine information from the Meteor Network and local campus online award letter information. This will allow a student to review their borrowing history PRIOR to accepting new loans. Detailed information about these pilot projects will be released soon. Currently, several organizations have released custom implementations that incorporate loan data in real-time into an exit counseling application. This allows the student to review complete information about their debt obligations while completing their exit counseling sessions after graduation or withdrawal. Tim also said there has been interest in Meteor from the Canada Student Loans Program and the Province of British Columbia, but nothing public. He expects details to be made public later.

\textsuperscript{4} The CDM (Course Definition Metadata) specification was developed in Norway. It has been proposed for European Union standardization. A version—CDM-FR—has been implemented in France. (The ESUP Portail participants—originally the 17 universities implementing uPortal—were the primary implementers). Sweden implemented a version of CDM called EIML (Education Information Markup Language). The JISC-funded XCRI specification was developed by Manchester Metropolitan University; project lead Mark Stubbs attended the Workshop.

\textsuperscript{5} More than 20 colleges and universities attended unisolution’s moveon 2007 conference. Their clients Germany 147, France 80, Belgium 4, Netherlands 3, Spain 8, UK 7, Sweden 6, Switzerland 4, Ireland 3, Portugal 2, Turkey 2, and Italy 1; a total of 267.

\textsuperscript{6} Kion Spa supplies student system software and other software and services to the 80 universities in Italy. Kion may reach an agreement to provide software and services in Spain. Each university has the option of using Kion software or services or their own development.

\textsuperscript{7} I think of John Robinson who founded Information Associates, Fred Gross who founded Systems and Computer Technology Inc.—later acquired by SunGard, and Dave Duffield who founded first Integral Systems and then PeopleSoft—acquired by Oracle Corporation. All were in their late twenties or early thirties when they began.

\textsuperscript{8} This would be “transitive trust” as proposed by JA-SIG Board member Bernie Gleason in a presentation at the U.S. Department of Education’s “CIO Technology Update,” May 8, 2002. At the same conference Andy Boots described the implementation of “transitive trust” for FSA (Federal Student Aid).
Kauli Foundation and Kauli Development – Jim Farmer

The Kauli website describes the Foundation saying:

The Kuali Foundation is a non-profit organization responsible for sustaining and evolving a comprehensive suite of administrative software that meets the needs of all Carnegie Class institutions. Its members are colleges, universities, commercial firms and interested organizations that share a common vision of open, modular, and distributed systems for their software requirements. The goal of Kuali is to bring the proven functionality of legacy applications to the ease and universality of online services.

The Kauli development projects can be divided into two types: Those above the line are enhancements of legacy systems. Those below the line will be developed using current technology standards. These standards will be used in subsequent releases of Kuali products beginning with Kuali Research Management.

- Kuali Financial Systems (KFS)
- Kuali Endowment Manager (KEM)
- Kuali Research Management (KRA)

- Kuali Rice (Software Development Simplified)
- Kuali Student

Kuali Student is important to PESC because of the possible application of PESC data standards and the definition of web services. Kuali Rice and Student will implement Service Oriented Architecture (SOA).

The colleges and universities listed below are participating and funding Kuali development for the product shown.
Group Discussion

One software supplier commented globalization of higher education should be a general interest of PESC though at this time is not a priority for his firm. Another said specifications reduce development and maintenance costs for software suppliers and maintenance and support costs for colleges and universities. Therefore their incentive to develop specifications if they will be widely implemented. Another asked about the role of IMS Global noting there is some overlap in interests (e.g. IMS Enterprise). An organization called LETSI has been formed to advance the use of interoperability standards.  

A participant suggested PESC should encourage representatives to attend meetings, like the Rome Workshop, and report to the PESC members. Dave’s report of the Rome Workshop was included in the October PESC Standard. He acknowledged this was “an appreciated” volunteer effort.

There was general agreement that standards for the real-time exchange of data were important. Perhaps PESC should be considering working with others such as EDUCAUSE.

Another said this is an effort that should be undertaken by the EA2 (Electronic Authentication and Authorization Task Force) since they had representation from other organizations and this was within the Task Force’s scope. Steven Margenau recalls the group’s recommendation as:

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9 From the LETSI (Learning-Education-Training Systems Interoperability) Website: “With a common goal of advancing learning internationally, the following current Sponsor organizations have joined together to comprise the LETSI Sponsor Executive Committee (SEC): Adobe Systems, Advanced Distributed Learning (ADL) Initiative, Aviation Industry Computer-Based Training Committee (AICC), Booz Allen Hamilton, Institute of Electrical and Electronics Engineers (IEEE) Computer Society, IEEE Learning Technology Standards Committee (IEEE LTSC), Fraunhofer Institute Digital Media Technology, Korea Institute for Electronic Commerce (KIEC), Latin American Institute of Educational Communication (ILCE), Masie Learning Consortium, MedBiquitous, and the Schools Interoperability Framework Association.”

Jim Farmer, Georgetown University with comments from Steven Margenau, Great Lakes Educational Loan Services, and Tim Cameron, Meteor Project Revised 28 January 2008
EA2 should suggest which standards should be used how to achieve real-time exchange of data. That is, use the suggestion from the March 2007 EA2 meeting to use existing implementations, such as Meteor, Shibboleth, etc. to create a roadmap forward. [This was the Task Force’s] principal recommendation.

A participant commented that states are centralizing academic (transcript) data with each state having a different format. But don’t a large number of students transfer across state boundaries? And shouldn’t their records be transferred via the Texas server? A federated model would be preferable. Or a federation of the centralized state systems. While the states are interested in academic data for accountability, students are interested in real-time transfer of current data to other institutions or to employers. Another participant commented there is dual enrollment [high school and college], especially in Florida, so current data needs to be available to both institutions.

Another commented that data standards among states or nations may not be reasonable; developing cross-walks may be sufficient.

Several PESC Board members participated in the group discussion. Thus the Board will be aware of the suggestions and opinion expressed at the Round Table.
January 23, 2008

Re: Letter of Intent

Dear Michael Sessa,

I am pleased to submit this letter to notify PESC that Federal Student Aid intends to work collaboratively with the higher education community to develop the following standard: **XML Common Origination and Disbursement Schema for Federal Student Aid Title IV programs.**

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

**We intend to submit for approval a national standard format for Federal Student Aid, postsecondary education institutions, and trading partners to exchange an XML version of student level origination and disbursement reporting data.**

We look forward to continuing collaboration in pursuit of higher education standards.

Sincerely,

Lisa R. Elliott
### New Member Dues Schedule

<table>
<thead>
<tr>
<th>Member Type</th>
<th>July 1, 2008</th>
<th>July 1, 2009</th>
<th>July 1, 2010</th>
<th>July 1, 2011</th>
<th>July 1, 2012</th>
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<td>$7,500</td>
<td>$7,700</td>
<td>$6,500</td>
<td>$6,000</td>
<td>$5,000 - reduced from $10,000</td>
</tr>
<tr>
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<td>$16,000</td>
<td>$14,000</td>
<td>$12,000</td>
<td>$11,000 - increased from $10,000</td>
</tr>
<tr>
<td>Federal</td>
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<td>$22,000</td>
<td>$18,000</td>
<td>$16,000</td>
<td>$14,000 - new</td>
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<td>$5,000 - new</td>
<td>$7,500 - reduced from $10,000</td>
<td>$5,500 - reduced from $10,000</td>
<td>$5,000 - new</td>
</tr>
<tr>
<td>Non-Profit Organization</td>
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<td>$5,000 - current</td>
<td>$7,500 - reduced from $10,000</td>
<td>$5,000 - reduced from $7,500</td>
<td>$5,000 - reduced from $7,500</td>
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<tr>
<td>State</td>
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<td>$11,500 - current</td>
<td>$12,000 - current</td>
</tr>
<tr>
<td>Bank, Lender, Servicer</td>
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<td>$11,000 - current</td>
<td>$11,000 - current</td>
<td>$11,000 - current</td>
<td>$11,500 - current</td>
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</table>

**NOTES:**
- Member status is required to participate in PESC workgroups.
- For the US Department of Education (NOAA, NCES, ED, etc.), membership will be handled by the PESC umbrella policy for PESC members (per association members can name up to 5 representatives). Additional revenues can be added at the discretion of the association members.
- In the case of the umbrella policy, in place of the umbrella policy, membership status is required.
- If approved by PESC members (per PESC bylaws), membership status is required.
- PESC members will be the subject of changes effective July 1, 2009.
- The revised schedule will go into effect upon PESC member approval.

**APPROVED:**
- **1/17/08**
- **1/17/09**
- **1/17/10**
- **1/17/11**
- **1/17/12**

*PESC reserves the right to change dues at any time (within the requirements of the bylaws).*

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**APPROVED:**
- **1/17/08**
- **1/17/09**
- **1/17/10**
- **1/17/11**
- **1/17/12**

*PESC reserves the right to change dues at any time (within the requirements of the bylaws).***
DATA QUALITY CAMPAIGN MARKS TWO YEARS
of Championing Longitudinal Data

States making progress in building longitudinal data systems, but need better alignment within and across data systems

November 10, 2007—Columbus, OH: The Data Quality Campaign (DQC), on the second anniversary of its launch at the Council of Chief State School Officers’ Annual Policy Forum, released a progress report showing states’ successes in building longitudinal data systems. Over the past two years, the DQC, a national partnership to improve the quality, accessibility and use of data in education, has highlighted the power of developing and using longitudinal data systems to improve student achievement. Just as more education leaders are recognizing the need for better data, more states are doing the hard work of addressing that need by putting in place the DQC’s 10 essential elements of a longitudinal data system.

Results from the DQC’s 2007 annual survey document the progress states are making:
- Four states (AR, DE, FL, UT) now report having a state data system that includes every one of the 10 essential elements;
- 47 states now have five or more of the elements; and
- Almost every state has unique statewide identifiers for every student; collects student enrollment, demographic and program participation information; and can calculate student-level graduation and dropout data.

In addition, 36 states have built or are planning to build data warehouses, and 35 states have deployed Web-based data analysis and reporting tools to make these data accessible and user friendly.

Work remains, however:
- only 14 states collect student-level college readiness scores;
- only 17 states collect student-level transcript information;
- only 18 states have a teacher identifier system with the ability to match teachers to students; and
- only 22 states have the ability to match student records between the P–12 and postsecondary systems (and fewer actually share and use this information).

“I commend the Data Quality Campaign for helping educators, parents, taxpayers and policymakers see what’s working in our schools and where we need to improve,” states U.S. Secretary of Education Margaret Spellings. “Strong data enable us to focus resources where they’re needed most and to base decisions about our children's futures on facts, instead of wishes or hopes or habits.”

**Year 3: Focusing on the Alignment of P–20 Data Systems**

Educators and policymakers need to not only collect data but also use the information to improve education policy and practice. To do this, they need to know whether schools are preparing students for long-term success in college, postsecondary training and the workplace.

There is a growing national interest in better aligning the P–12 and postsecondary education systems to ensure all students leave high school “college ready.” However, until all states have aligned longitudinal data systems,
these conversations are limited. Therefore, policymakers should consider a range of efforts that will help reduce barriers and increase support for the building and use of longitudinal data systems, and states must continue to build, maintain and align them. With such systems in place, policymakers will be able to answer pressing questions such as:

- What high school performance indicators (e.g., enrollment in rigorous courses or performance on state tests) are the best predictors of students' success in college or the workplace? (5 states can answer this question)
- What percentage of high school graduates take remedial courses in college? (19 states can answer this question)
- Which teacher preparation programs produce the graduates whose students have the strongest academic growth? (13 states can answer this question)

"More students will succeed in college only when colleges and high schools know more deeply which students are failing and why. The improved information systems advocated by the Data Quality Campaign are essential for more student success" says Joseph Savoie, Chairman of the Executive Committee of the State Higher Education Executive Officers (SHEEO) and Commissioner of Higher Education for the Louisiana Board of Regents.

The DQC will focus in its third year on the need to develop linkages between P–12 and postsecondary data systems to ensure that these alignment conversations are informed by high-quality, relevant and timely data. The DQC will assist states as they build aligned data systems that can help them:

- **Match academic records of individual students between P–12 and postsecondary, and use these data to ensure continuous feedback and improvement.** Although 22 states report they have the ability to link P–12 and postsecondary data systems, previous surveys from Achieve and the National Center for Higher Education Management Systems find that only 11 states actually link these data across the sectors and only 10 states regularly report postsecondary data to high schools. Without this two-way data-sharing, secondary school systems won't know if their students are leaving high school prepared for the demands of postsecondary education, training and work.

- **Measure the education pipeline.** As education systems become increasingly aligned through standards, assessments and other measures, providing information about successful transitions and "leaks" in the pipeline is equally vital. Longitudinal data on student courses and grades, test scores, and remediation rates can serve as college readiness indicators.

- **Transfer records across systems and states.** In an increasingly mobile world, not only do education data systems need to be able to exchange information with other systems — such as postsecondary — within the state, but they also need to be able to exchange information with systems in other states.

State policymakers — legislators, governors, state board members, higher education officials, attorneys general and chief state school officers — must work together to ensure that there is not just the political will to build these state longitudinal data systems but also the resources, legal clarity around privacy issues and increased capacity throughout the system to use these data for policymaking and decisionmaking. "Two years ago, all governors agreed to develop a high-quality, comparable high school graduation measure. The Data Quality Campaign has led the charge to create data systems that allow states to report graduation and dropout data. Better data systems help us to better understand policy problems and solutions," say Governors Donald Carcieri (R-RI) and Timothy Kaine (D-VA), NGA Center for Best Practices, Lead Governors on Education.

The DQC’s national partners have renewed their commitment to work together to build support and political will among policymakers to:

- Fully develop high-quality longitudinal data systems in every state by 2009;
- Increase understanding and promote the valuable uses of longitudinal and financial data to improve student achievement; and
- Promote, develop and use common data standards and efficient data transfer and exchange.

"The national forum provided by the Data Quality Campaign is invaluable to state policymakers in building the political will to enhance and use longitudinal data systems as integral parts of our efforts to improve student
achievement,” says Rick Melmer, South Dakota secretary of education and incoming president of the Council of Chief State School Officers (CCSSO). “Over the past two years, the DQC has provided states with a variety of resources that have assisted the Council’s efforts to promote data quality and accessibility through the work of CCSSO’s Education Information Management Advisory Consortium (EIMAC) and the State Education Data Center.”

The 14 DQC managing partners look forward to working with state leaders to develop tools and resources that will assist them in building and using aligned P–20 data systems to inform efforts to improve student achievement and ensure every child is prepared for the increasing demands of college and the workplace in the 21st century.

*****

The Data Quality Campaign is a national, collaborative effort to encourage and support state policymakers to improve the collection, availability and use of high-quality education data and to implement state longitudinal data systems to improve student achievement. The campaign provides tools and resources that assist state development of quality longitudinal data systems, while providing a national forum for reducing duplication of effort and promoting greater coordination and consensus among the organizations focusing on improving data quality, access and use.

For more information on the Data Quality Campaign, its tools and resources, and the 2007 survey results, visit www.DataQualityCampaign.org or e-mail Info@DataQualityCampaign.org.

The campaign is managed by the National Center for Educational Accountability. The Bill & Melinda Gates Foundation is the founding funder; additional support has been provided by the Casey Family Programs and the Lumina Foundation for Education.

In September 2007, NCEA conducted a survey about state data systems to determine the number of states that have built the infrastructure to tap into the power of longitudinal data. Similar surveys were conducted by NCEA in 2003, 2004, 2005 and 2006.

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10 Essential Elements of Longitudinal Data Systems

Longitudinal data — data gathered on the same student from year to year — make it possible to follow individual student academic growth, determine the value-added of specific programs, and identify consistently high-performing schools and systems. The DQC has identified the following 10 essential elements of a longitudinal data system and annually reports state progress in implementing each element:

1. A unique statewide student identifier that connects student data across key databases across years (45 states report having this element, up from 36 in 2005)
2. Student-level enrollment, demographic and program participation information (49, up from 38 in 2005)
3. The ability to match individual students’ test records from year to year to measure academic growth (46, up from 32 in 2005)
4. Information on untested students and the reasons they were not tested (37, up from 25 in 2005)
5. A teacher identification system with the ability to match teachers to students (18, up from 13 in 2005)
6. Student-level transcript information, including information on courses completed and grades earned (17, up from 7 in 2005)
7. Student-level college readiness test scores (14, up from 7 in 2005)
8. Student-level graduation and dropout data (49 up from 34 in 2005)
9. The ability to match student records between the P–12 and postsecondary systems (22, up from 12 in 2005)
10. A state audit system assessing data quality, validity and reliability (41, up from 19 in 2005)
Quotes from DQC Partners

“The DQC is a critical element in moving the profession of teaching forward. Instruction and policy that is developed based on data and aligned to desired student outcomes is critical in our global economy. ECS is proud to be a partner on this important project.”

— Roger Sampson, President, Education Commission of the States

“Reliable information about how our schools and students are doing over time is invaluable to the national effort to close achievement gaps in American education. The ability to follow student growth from elementary school through college and to link student and teacher data together gives policymakers and administrators an opportunity to make truly informed decisions about budgets and policies, and provides teachers themselves with information to improve their own instructional practices. The Data Quality Campaign’s efforts to support and improve state and local capacity in these areas are a strong step forward toward improving educational outcomes for all students.”

— Kati Haycock, President, The Education Trust

“Education needs to continue to look systemically at how we plan, build and utilize comprehensive data management and reporting solutions. The power of the systems being implemented across the country is in changing the way education addresses the business of ‘learning’ for all stakeholders. It is critical that educational decision-making at the local, state and national levels be based on accurate data, and the DQC is helping to frame state and federal data management and policy needs. As a non-profit agency directly supporting schools, states, USED and vendors developing interoperable data solutions, the Schools Interoperability Framework Association is proud to be one of the original managing partners of the DQC. The more than 600 members of our association are passionate about the movement and use of educational data in a manner that does not place an undue reporting burden on states, districts and teachers.”

— Larry L. Fruth II, Ph.D., Executive Director, Schools Interoperability Framework Association

“Improving student academic achievement is crucial to the ability of our young people to succeed in college and compete in an increasingly complex workforce. The Data Quality Campaign’s work in promoting the use of educational data to inform decisions and improve student learning and readiness is right on target. ACT joins in celebrating DQC’s two-year anniversary, and we congratulate them on the significant progress they have made in encouraging states to recognize and use the power of longitudinal data. We are proud to be an endorsing partner in these efforts.”

— Cynthia B. Schmeiser, President and COO, Education Division, ACT

“Perhaps the stars are aligned in Colorado…. Subcommittees of the Governor’s P-20 Council are addressing data issues as are several pieces of 2007 legislation. Leaders in these efforts cite the work of the Data Quality Campaign, and yet as DQC’s most recent survey results show, states have much work to do to align P-20 data systems to inform these conversations. A legislated Quality Teachers Commission - whose work will include addressing unique teacher identifiers - is about to begin its work, hopefully recommending how Colorado will join the 18 other states that can connect teachers to individual students. The Alliance for Quality Teaching renews its commitment to work with the Data Quality Campaign to improve the data available in Colorado, so they may be used to make conversations currently underway a reality for children.”

— Jacqueline J. Paone, Executive Director, Alliance for Quality Teaching
“The world is moving forward at an exponential pace. In order to truly understand the programs and policies that positively impact student achievement we need to have the data. The debate must move from ‘we believe that’ to ‘the data shows that’ and that can only be accomplished when every state has the longitudinal data outlined by the Data Quality Campaign.”

— David Saba, President, American Board for Certification of Teacher Excellence

“In two brief years, the Data Quality Campaign has shown that its disciplined, strategic, and collaborative approach to working with states can have a big payoff. Efforts to improve teaching, learning, and student achievement for all students will take off when states can answer important questions about the progress over time of students with different demographic profiles and educational histories. DQC is doing more than any other group to support and push states toward high quality, usable data systems that can provide policymakers and the public the information they need to make sure that every young person leaves high school ready for college, career, and citizenship.”

— Marlene Seltzer, President and CEO, Jobs for the Future
DQC Managing and Endorsing Partners

Managing partners include:

Achieve, Inc.
Alliance for Excellent Education
Council of Chief State School Officers
Education Commission of the States
The Education Trust
National Association of State Boards of Education
National Association of System Heads
National Center for Educational Accountability
National Center for Higher Education Management Systems
National Governors Association Center for Best Practices
Schools Interoperability Framework Association
Standard & Poor's School Evaluation Services
State Educational Technology Directors Association
State Higher Education Executive Officers

Endorsing partners include:

ACT
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American Youth Policy Forum
APQC
Business-Higher Education Forum
Center for Teaching Quality
College Summit
Consortium for School Networking
Educational Policy Institute
ETS
GreatSchools
Institute for a Competitive Workforce (An Affiliate of the U.S. Chamber of Commerce)
Institute for Educational Leadership
Jobs for the Future
Knowledge Alliance
League of Education Voters Foundation
Learning Point Associates
Midwestern Higher Education Compact
National Alliance for Public Charter Schools
National Association of Secondary School Principals
National Center for Public Policy and Higher Education
National Council for Accreditation of Teacher Education
Pathways to College Network
Postsecondary Electronic Standards Council
Roads to Success
Southern Regional Education Board
Western Interstate Commission for Higher Education

For more information, visit the Data Quality Campaign web site at www.DataQualityCampaign.org.
Creating a Longitudinal Data System To Improve Student Achievement

In the two years since the Data Quality Campaign (DQC) was launched, there has been great progress in the development of state longitudinal data systems. As governors, chief state school officers, educators and other education stakeholders are recognizing the need for better information, more states are doing the hard work of addressing this need by putting in place longitudinal data systems.

Results from the DQC’s 2007 annual survey about state data systems document the progress states are making in implementing the 10 essential elements of a longitudinal data system:

- Four states (AR, DE, FL, UT) now report having a state data system that includes every one of these 10 essential elements;
- 47 states have five or more of the elements; and
- Almost every state (45–49 states) has unique statewide identifiers for every student; collects student enrollment, demographic and program participation information; and can calculate student-level graduation and dropout data.

In addition, 36 states have built or are planning to build data warehouses, and 35 states have deployed Web-based data analysis and reporting tools to make these data accessible and user friendly.

The increased capacity of state data systems to collect, analyze and provide useful data to inform policymaker and educator decisions is testament to the power of the bully pulpit. For example, the intense focus on the National Governors Association (NGA) longitudinal graduation rate in the past two years has borne tangible results: Whereas in 2005 only 14 states had data systems capable of calculating the rate that all 50 governors agreed to, now 35 states have data systems capable of calculating this rate. Similarly, the growing interest in supporting the use of growth or value-add models has increased focus on the need for the ability to follow individual students and their progress over time. As the number of states that have essential longitudinal data system elements in place increases, a growing number of states (now 34, compared to 21 in 2005) are able to determine the schools that produce the strongest academic growth for their students.

However, work remains:

- Only 14 states collect student-level college readiness scores;
- Only 17 states collect student-level transcript information;
- Only 18 states have a teacher identifier system with the ability to match teachers to students; and
Only 22 states have the ability to match student records between the P–12 and postsecondary systems (and fewer actually share and use this information).

To ensure all students leave high school ready for college, states need to collect and use valuable longitudinal data.

**Focusing on the Alignment of P–20 Data Systems: A Look Ahead at Year Three of the DQC**

Educators and policymakers need to know whether schools are preparing students for long-term success in college, postsecondary training and the workplace. There is a growing national interest in better aligning the P–12 and postsecondary education systems to ensure all students leave high school “college ready.” In year three, the DQC will focus on the need to develop links between P–12 and postsecondary data systems to ensure that these alignment conversations are informed by high-quality, relevant and timely data.

The DQC will assist states as they build aligned data systems that can help them:

- **Match academic records of individual students between P–12 and postsecondary, and use the data to ensure continuous feedback and improvement.** Although 22 states report they have the ability to link P–12 and postsecondary data systems, previous surveys from Achieve, Inc., and the National Center for Higher Education Management Systems find that only 11 states actually link the data across the sectors, and only 10 states regularly report postsecondary data to high schools. Without this two-way data-sharing, secondary school systems won’t know if their students are leaving high school prepared for the demands of postsecondary education, training and work. States also should consider incorporating into their education data systems, as needed, records from other social service agencies that have information relevant to students’ health and safety.

- **Measure the education pipeline.** As education systems become increasingly aligned — through standards, assessments and other measures — providing information about successful transitions and “leaks” in the pipeline is equally vital. Longitudinal data on student courses and grades, test scores, and remediation rates can serve as college-ready indicators.

- **Transfer records across systems and states.** In an increasingly mobile world, people regularly move across state borders, making it difficult to tell, for example, whether a student has dropped out or moved to a new state. Therefore, not only do education data systems need to be able to exchange information with other systems — such as postsecondary — within the state, but they also need to be able to exchange information with systems in other states. The key is ensuring that data systems built by different vendors in different states use common data standards and definitions.

State policymakers — legislators, governors, state board members, higher education officials, attorneys general and chief state school officers — must work together to ensure that there is not just the political will to build these state longitudinal data systems but also the resources, legal clarity around privacy issues and increased capacity throughout the system to use these data for policymaking and decisionmaking.

The 14 DQC managing partners look forward to working with state leaders to develop tools and resources that will assist them in building and using aligned P–20 data systems to inform the college-ready agenda.
10 Essential Elements of a Longitudinal Data System — State of State Data Systems, 2007

1. **A unique statewide student identifier.** As students move from grade to grade and from district to district, this ID number will allow states to accurately measure the progress of every student over time, from pre-kindergarten through grade 12.

   - 36 states reported having this element in 2005
   - 45 states report having this element in 2007

2. **Student-level enrollment, demographic and program participation information.** This information will help identify which programs are helping students succeed. It also will help account for students who transfer from school to school and will ensure that test data are disaggregated correctly.

   - 38 states reported having this element in 2005
   - 49 states report having this element in 2007

3. **The ability to match individual students’ test records from year to year to measure academic growth.** Being able to match test records for individual students from last year to this year will provide valuable diagnostic information to teachers and principals and will help educators monitor each student’s academic growth.

   - 32 states reported having this element in 2005
   - 46 states report having this element in 2007

4. **Information on untested students.** With this information, states can ensure that students from all groups are participating in state tests and can account for students who were exempted from the tests.

   - 25 states reported having this element in 2005
   - 37 states report having this element in 2007

5. **A teacher identifier system with the ability to match teachers to students.** Many states collect data on teacher education and certification, but matching teachers to students by classroom and subject is critical to understanding the connection between teacher training and qualifications and student academic growth.

   - 13 states reported having this element in 2005
   - 18 states report having this element in 2007

6. **Student-level transcript information, including information on courses completed and grades earned.** States will be able to track course-taking patterns and analyze their relationship to success on state assessments and readiness for college and work.

   - 7 states reported having this element in 2005
   - 17 states report having this element in 2007

7. **Student-level college readiness test scores.** Student performance on the SAT, SAT II, ACT, Advanced Placement, International Baccalaureate and other college readiness exams is a good indicator of whether students are prepared to succeed in postsecondary education and work; however, currently only 14 states maintain this information from year to year at the student level. But some states are going a step further by building college readiness tests into their statewide assessment systems.

   - 7 states reported having this element in 2005
   - 14 states report having this element in 2007

8. **Student-level graduation and dropout data.** A majority of states currently collect annual records on individual graduates and dropouts. But the NGA compact signed by all states aims to create a more valid, reliable and consistent graduation rate that tracks students from 9th to 12th grade. Based on National Center for Educational Accountability analyses, only 35 states currently have the necessary elements (1, 2, 8, 10) in place to calculate the graduation rate defined in the NGA compact.

   - 34 states reported having this element in 2005
   - 49 states report having this element in 2007

9. **The ability to match student records between the P–12 and post-secondary systems.** Opening the lines of communication between P–12 and higher education is critical to ensuring that students succeed at the postsecondary level. Connecting student performance in college to what happens in high school will give high schools the information they need to align curriculum and instruction to ensure that graduates are better prepared for college and work.

   - 12 states reported having this element in 2005
   - 22 states report having this element in 2007

10. **A state data audit system assessing data quality, validity and reliability.** The decisions made in education are only as good as the information on which they are based.

    - 19 states reported having this element in 2005
    - 41 states report having this element in 2007

To see state-by-state results and find out more about what it takes to create a longitudinal data system, go to www.DataQualityCampaign.org.
The Data Quality Campaign is a national, collaborative effort to encourage and support state policymakers to improve the collection, availability and use of high-quality education data and to implement state longitudinal data systems to improve student achievement. The campaign aims to provide tools and resources that will assist state development of quality longitudinal data systems, while providing a national forum for reducing duplication of effort and promoting greater coordination and consensus among the organizations focusing on improving data quality, access and use.

Managing partners of the Data Quality Campaign include:
- Achieve, Inc.
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- Council of Chief State School Officers
- Education Commission of the States
- The Education Trust
- National Association of State Boards of Education
- National Association of System Heads
- National Center for Educational Accountability
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- Jobs for the Future
- Knowledge Alliance
- League of Education Voters Foundation
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- Pathways to College Network
- Postsecondary Electronic Standards Council
- Roads to Success
- Southern Regional Education Board
- Western Interstate Commission for Higher Education

The campaign is managed by the National Center for Educational Accountability. The Bill & Melinda Gates Foundation is the founding funder; additional support has been provided by the Casey Family Programs and the Lumina Foundation for Education.

Find Out More

Visit the Data Quality Campaign Web site (www.DataQualityCampaign.org) for more information about:
- 10 essential elements and the state policy actions required to establish, maintain and use a quality longitudinal data system;
- Results of NCEA’s 2007 update of its annual survey that show where your state stands on the 10 essential elements;
- Tools, materials, meetings and information that can aid states and interested organizations seeking to ensure increased quality, accessibility and use of data; and
- Information on how your organization can partner with the DQC to generate the understanding and will to build and use state longitudinal data systems.