PESC Technical Advisory Board

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

- The TAB maintains the “PESC Guidelines for XML Architecture and Data Modeling”
- Meetings are held on most Thursdays at 3PM ET.
- Any PESC member is invited to participate.
TAB Team

○ Co-chairs:
  ● Gideon Sanstra (Ellucian)
  ● Michael Morris (ACT, Inc.)

○ Chairman Emeritus:
  ● Steve Margenau

○ PESC Board Liaison:
  ● Jeff Alderson

○ Active Participants:
  ● Jam Hamidi (BCC)
  ● Sue Lou (FSA)
  ● Tuan Ahn Do (SFSU)
  ● David Weber (Oracle)
Current Activities

- Implementation Guide Automation
- NIEM Conformance
- JSON and PESC
Creating an Implementation Guide is a major issue with most standards workgroups.

- Workgroup finishes schema and then activity slows to a crawl

- Prototyping Word VBA to create diagrams from schema and update document

- Prototyping Mind Map diagrams using CAMV
National Information Exchange Model
Naming and Design Rules

NIEM Technical Architecture Committee (NTAC)

October 31, 2008
Version 1.3
Schema upgrades using NIEM Guidelines

- NIEM is the National Information Exchange Model
- PESC and FSA are contemplating applying to be stewards of the NIEM Education Domain
- There are several NIEM practices that PESC should adopt even if not adopting NIEM
All Elements, Types, and Enumeration Values should contain definitions through embedded annotations in PESC schemas:

```xml
<xs:simpleType name="TestYearType">
  <xs:annotation>
    <xs:documentation>
      A data type for the date when a standardized test was administered to the person
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:gYear"/>
</xs:simpleType>
```
Systematic Naming of Elements

- Tag Names should usually contain Object Class, Object Class Property, and a Representation Term:
  - StudentGradeCode
  - CourseStartDate
  - CourseName
  - PersonDeceasedIndicator
  - InvoiceAmount
Other NIEM Changes

- Merge xsd:group into surrounding complex type
- Make Elements global rather than locally defined except those that simple types that are defined by “xs:<type name>”.
- Add “Type” to all Type definitions not including “Type” in the name
- Evaluate all component names against NIEM naming standards and change where needed.
TAB NIEM Activities

- TAB worked with the CCB to gather all definitions for elements and enumeration values of core-main.
- TAB developed Excel tool to convert core-main (or other schema) to NIEM conformance.
- David Webber (Oracle) has started transforming CEDS to be compliant with NIEM by using CAMV to extract from definitions from workbook.
Decisions about NIEM

- Decision to apply for NIEM Stewardship of the Education Domain (Board)
- Decision on core-main elements with multiple definitions (CCB)
- Decision on how to integrate CEDS into NIEM Education domain (Board, CEDS User Group)
JavaScript Object Notation (JSON)

- In use by most RESTful web services
- Can be marshaled and unmarshaled directly with JavaScript
- All major programming languages provide JSON APIs.
- Comprised of Objects({}), Arrays ([[]]), and values arranged in lists of name value pairs
PESC Uses

- Provide standards in JSON using JSON schemas
- Provide instance documents in JSON generated from XML
- Do nothing and praise XML
- TAB Current Thinking:
  - Validate XML and then convert to JSON for exchange
JSON Conversion Issues

- No universal standard for conversion of XML to JSON
- Reversible vs. Nonreversible
- Conventions
  - Attributes (@)
  - Text (#)
  - Multiple nonconsecutive same named elements in a sequence
  - Simple data type conversions
  - Namespaces
<A attr1="z">
    <B attr2="x">test1</B>
    <B attr2="y">test2</B>
</A>

{"A":"@attr1": "z","B":
 [{"@attr2":"x","#":"test1"},
  {"@attr2":"y","#":"test2"}
] }
The TAB is not a policy body
We make technical appraisals and recommendations
The business case for JSON is an organizational decision
Questions