

IT Standards for Learning

IEEE 1484 (some *nouns* and *plumbing*)

Chad J. Kainz

Senior Director, NSIT Academic Technologies, University of Chicago

Vice-Chair, IEEE Learning Technology Standards Committee

cjkainz@uchicago.edu

Motivators

Diverse marketplace

Variety of learning sectors

Globalization of learning

Interoperability across systems and borders

“Personal learning system”

Student-centered learning

History

- **Established in December 1996**
IEEE, Microsoft, Edutool, Kutz & Assoc., Osaka University, Carnegie Mellon, MITRE, US Army
- **Over 200 participants worldwide**
US higher education participation is “light”
- **First standard released in June 2002**

Relationships

ADL: Advanced Distributed Learning Initiative

ALIC: Advanced Learning Infrastructure Consortium

ARIADNE: Alliance of Remote Instructional & Distribution
Networks for Europe

ASTD: American Society for Training & Development

AICC: Aviation Industry CBT Committee

LTWS: CEN/ISSS Learning Technology Workshop

CETIS: Centre for Educational Technology Interoperability
Standards

Dublin Core Metadata Initiative

EdNA: Education Network Australia

IMS Global Learning Consortium

SC36: ISO/IEC Joint Technical Committee 1, Subcommittee 36

SIF: Schools Interoperability Framework

Current Projects

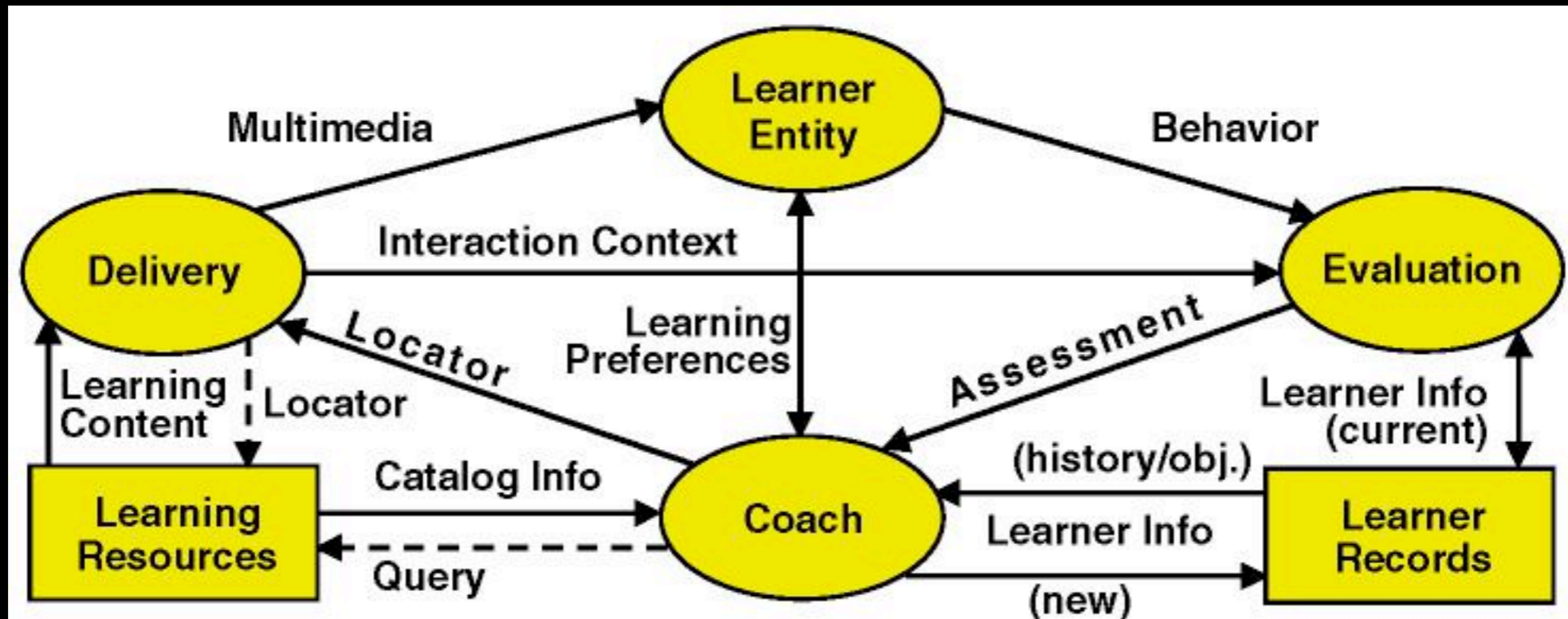
Architecture & Reference Model

IEEE P1484.1

- High-level architecture specification
- Conceptual framework that is...
 - Content neutral
 - Pedagogically neutral
 - Platform neutral
 - Culturally neutral

G.A.D.

from IEEE P1484.1 draft 9



Computer-Managed Instruction

IEEE P1484.11

- P1484.11.1: Data model for Content to LMS Communication
- P1484.11.2: ECMAScript API for Content to Runtime Services Communication
- Roots in AICC CMI specification
- Included in SCORM 1.3

CMI & SCORM

IEEE P1484.11

“Many learning technologists seem to wonder whether to stick with *AICC's* original *CMI*, bet on *ADL's SCORM* or else *IMS Content Packaging plus Simple Sequencing*, or perhaps wait for *IEEE LTSC's* proper standards...

“...the *ADL, IMS, ALIC, CEN/ISSS, ARIADNE* and *AICC* standards, specs and application profiles are not really in competition, they are just different aspects of what is now routinely referred to as *SCORM*.”

Major SCORM stakeholders unify message

Wilbert Kraan, CETIS staff

March 18, 2003

CMI Advisory Group

IEEE P1484.11

- Establishing an inter-organizational CMI/SCORM Advisory Group
 - First meeting in Chicago, June 20, 2003
 - IEEE LTSC, ADL, AICC, DEST, ALIC, ARIADNE, CEN/ISSS WS-LT

Learning Object Metadata

IEEE P1484.12

- 1484.12.1 (LOM 1.0): Conceptual Data Schema for Learning Objects
- Bindings
 - ISO 11404 (P1484.12.2)
 - XML (P1484.12.3)
 - RDF (P1484.12.4)

LOM 1.0 Details

IEEE 1484.12.1

- Basic Metadata Structure
 - General, Lifecycle, Meta-Metadata, Technical, Educational, Rights, Relation, Annotation, Classification
- *Everything is optional*
- Dublin Core interoperability
-

Platform & Media Profiles

IEEE P1484.18

- Standardized methodology for representing and referencing “browser” requirements
- Focuses on functionality (JPEG, HTML 4.0) rather than implementation (IE, Netscape)

Competency Definitions

IEEE P1484.20

- Standard data model for CD records
- Reconcile various existing models into a single, widely acceptable model
- Method to identify CD type and precision
- Provide a unique ID for CD
- Model for additional CD information
- Controlled vocabulary to express CDs
- *IMS base document?*

Digital Rights Expression Lang.

IEEE 1484 Study Group

- Develop a recommended practice for expressing digital rights for education and training
- Idea is to extend existing DR work such as MPEG-21, ODRL, etc.
- Currently looking for rights expression requirements for higher education

Training Simulations

IEEE 1484 Study Group

- Exploring the need for a standard to express complex simulations and scenarios used in teaching and learning

Why standards?

- Interoperability
 - between systems
 - across “sectors”
 - between nations
- Stability... ..but at a cost
- Sustainability...
- International and legal issues...