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S1000D Learning Standards Harmonization Task Team (LSHTT)

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LSHTT Presentation Topics

- Problem, Vision and Solution Statements
- Approved LSHTT CPFs
- Upgraded Learning and Training Data Module Support
- Bridge Application Programming Interface (API)
- S1000D-SCORM Bridge Toolkit
- S1000D-SCORM Bike Course

LSHTT Problem, Vision and Solution Statements

LSHTT Problem, Vision & Solution Statements

- **Problem**

  - **Technical learning content cannot be easily discovered, reused and adapted, reconfigured for delivery, and life-cycle managed**

    - Vendor-neutral communication protocols do not exist between content development tools and CSDBs

    - Learning content and associated technical data are not aligned by a common specification.
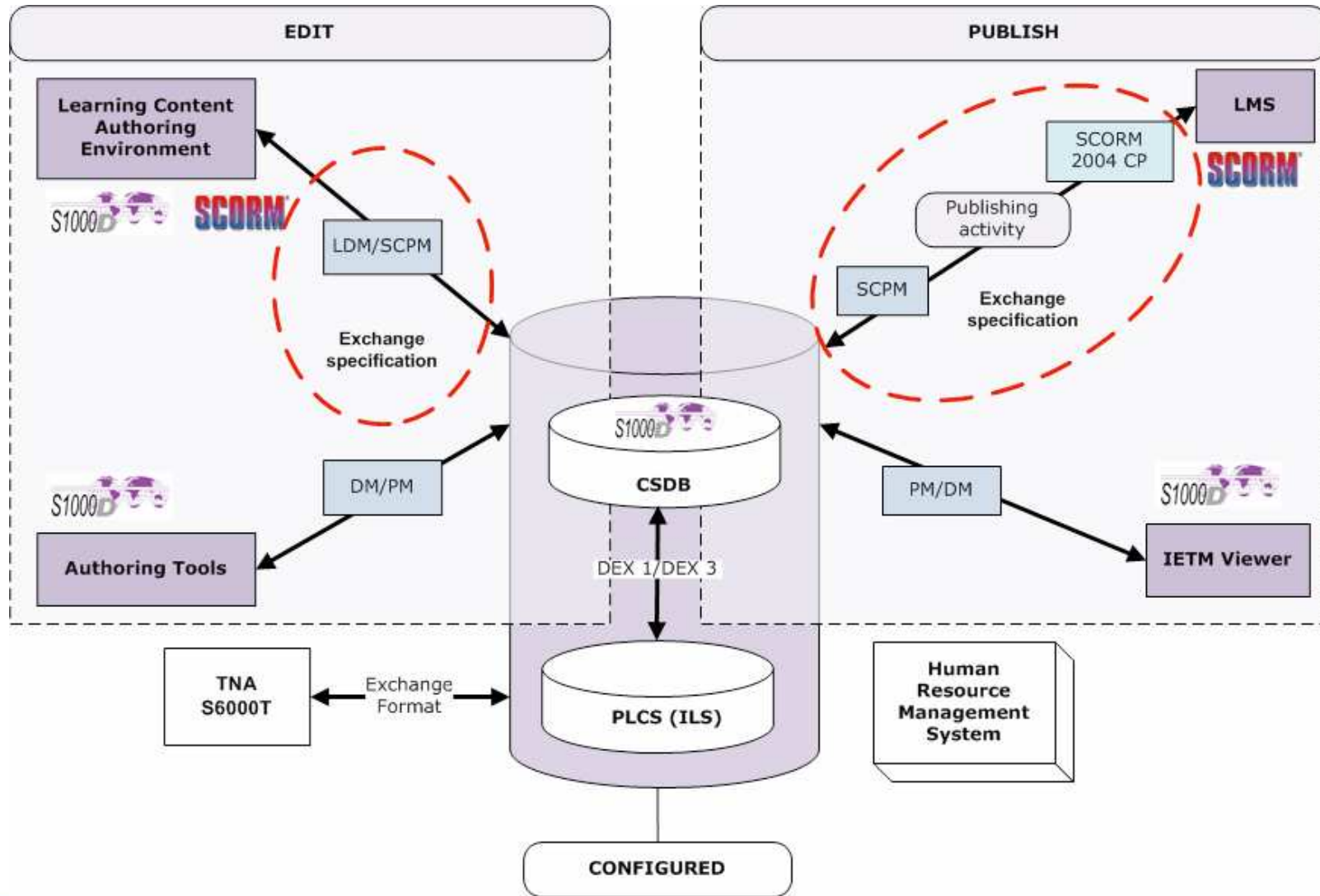
- **Vision**

  - **Technical learning data and technical publication data are developed and maintained based on consistent Integrated Logistics Support data.**

- **Solution**

  - **Make content standard and robust by using a common data structure; Link instructional design and learning data to maintenance and operational data.**

Problem Illustration

Approved 4.1 LSHTT
Change Proposal Forms:

Upgraded Training Content Support

CPF-LSHTT-2009-018 – Learning Data Module (LDM) Improvements

- Improved "Training Needs Analysis"
- Improved "mapping" of "learning objectives" through course and technical publication
- Improved "learning assessment interactions"

Learning Data Module Schema

Content Markup -

    a.   Learning Plan
    b.   Learning Overview
    c.   Learning Content
    d.   Learning Summary
    e.   Learning Assessment

Learning Plan Segment of LDM

Issue 4.0

Learning Plan
- Project
- Needs Analysis
- Gap Analysis
- Intervention
- Technical

Approved 4.1 Changes

Learning Plan
- Project
- Performance Analysis
- Cause Analysis
- Intervention Definition
- Intervention Implementation
- Performance Evaluation

(More Human
Performance Oriented)

Learning Overview Segment of LDM

Issue 4.0

Learning Summary

 Title
 Short Description
 Intro
 Audience
 Duration
 Prerequisites
 Objectives
 Resources
 Section

Approved 4.1 Changes

Learning Summary

 Title
 Description
 Audience
 Duration
 Resources
 Section

Main Learning Content Segment of LDM

Issue 4.0

Learning Content
- Title
- Short Description
- Intro
- Duration
- Objectives
- Challenge
- Instruction

Approved 4.1 Changes

Learning Content
- Title
- Description
- Instruction

Learning Summary Segment of LDM

Issue 4.0

Learning Summary
  - Title
  - Short Description
  - Summary
  - Objectives
  - Review
  - Next Steps
  - Resources
  - Section

Approved 4.1 Changes

Learning Summary
  - Title
  - Description
  - Summary
  - Review
  - Next Steps
  - Resources
  - Section

Learning Assessment Segment of LDM

Issue 4.0
Assessment
- Title
- Short Description
- Introduction
- Duration
- Interaction
  - True False
  - Single Select
  - Multiple Select
  - Sequencing
  - Matching
  - Hotspot

Approved 4.1 Changes
Assessment
- Title
- Description
- Introduction
- Duration
- Interaction
  - True False
  - Single Select
  - Multiple Select
  - Sequencing
  - Matching
  - Hot Spot
  - Completion
  - Drag-and-Drop
  - Feedback Group

CPF 018 Affected Chapters and Status

Chap 3.9.5.2.13 Content section - Learning data module	Chris Robbins	Approved
Chap 3.9.5.2.13.1 Learning data module - Learning plan information type	Steve Worsham / Chris Robbins	Approved
Chap 3.9.5.2.13.2 Content section - Learning overview information	Steve Worsham / Chris Robbins	Approved
Chap 3.9.5.2.13.3 Content section - Learning content information	Steve Worsham / Chris Robbins	Approved
Chap 3.9.5.2.13.4 Content section - Learning summary information	Steve Worsham / Chris Robbins	Approved
Chap 3.9.5.2.13.5 Content Section - Learning assessment information	Steve Worsham / Chris Robbins	Approved
Chap 3.9.5.2.18 Content Section - SCO Content Data Module	Stefano / Steve	Approved
Chap 3.9.7 Authoring - Human performance technology and training	Jeff Clem	Approved
Chap 4.3.9 Data module code - Learn code	Chris Robbins, Jeff Clem	Approved
Chap 8 Standard numbering systems, information codes and learn codes	Paul Haslam and Jeff Clem	Approved
Chap 8.1 SNS information and learn codes - General	Paul Haslam and Jeff Clem	Approved
Chap 8.2 SNS information and learn codes - Maintained SNS - General	Paul Haslam and Jeff Clem	Approved
Chap 8.3 SNS information and learn codes - Example SNS	Paul Haslam and Jeff Clem	Approved
Chap 8.4 SNS information and learn codes - Information codes	Paul Haslam and Jeff Clem	Approved
Chap 8.4.1 Information codes - Short definitions	Chris Robbins, Jeff Clem, Stefano	Approved
Chap 8.4.2 Information codes - Full definitions	Chris Robbins, Jeff Clem, Stefano	Approved
Chap 8.5 SNS information and learn codes - Learn codes	Jeff Clem	Approved
Chap 8.5.1 Learn codes - Human performance technology codes	Jeff Clem	Approved
Chap 8.5.2 Learn codes - Training codes	Jeff Clem	Approved

CPF-LSHTT-2009-019: S1000D Training Aggregation Improvements

- Separate the *structure of the training course* and the *definition of the SCOs* into two different XML Schemas:

  - SCPM (*SCORM Content Packing Module)*
  - SCO DM (*SCO Data Module)*

- Allow reuse of *SCOs* in different training courses without "redeclaring" it inside each training course structure definition.

SCORM Content Package Module

SCPM (Schema: Structure)

<SCPM>

    <IdentandStatus>

    <Content>

      <SCO Entry>

        <SCOEntryItem>

          <DMREF> (to a SCODM)

SCO DM (Schema: Definition)

<Dmodule>

    <IdentandStatus>

    <Content>

      <SCOContent>

        <TrainingStep>

          <DMRef> (to a LDM/DM)

          <DMSegmentRef>

CPF 019 Affected Chapters and Status

Chap 3.9.5.2.1.2 Common constructs - Referencing	Svante Ericsson	Approved
Chap 4.3.6 Data module code - Information code	Svante Ericsson and Stefano Tedeschi	Approved
Chap 4.5.9 Publication and SCPM Management - SCO Content Data Module	Stefano Tedeschi	Approved
Chap 4.9 Information management - Publication and SCORM content package management		Approved
Chap 4.9.3 Publication and SCORM content package management - Building of publications and SCOs		Approved
Chap 4.9.5 Publication and SCPM Management - SCO Content Data Module	Stefano Tedeschi and Steve Worsham	Approved
Chap 5.2.1.19 Common information sets - Training	Paul Haslam	Approved
Chap 7.3.1.1 Data module Schema - Version summary	Assigned to ALL	Approved
Chap 7.3.1.3 Data module schema invocation	Steve Worsham	Approved
Chap 7.3.1.4 Data module Schema - Backwards compatibility	Steve Worsham	Approved
Chap 7.4.2 Generation of publications - Publication module and SCORM Content Package Schema	Stefano Tedeschi	Approved
Chap 7.4.2.2 SCORM Content Package module Schema - Version summary	Stefano Tedeschi	Approved

Affected Chapters for both CPF 018 and CPF 019

Chap 8.4 SNS information and learn codes - Information codes	Chris Robbins, Jeff Clem, Stefano Tedeschi	Approved
Chap 8.4.1 Information codes - Short definitions	Chris Robbins, Jeff Clem, Stefano Tedeschi	Approved
Chap 8.4.2 Information codes - Full definitions	Chris Robbins, Jeff Clem, Stefano Tedeschi	Approved

CPF-LSHTT-2009-020 – Targeted reuse of Objects in LDM

- Revision of element <xPaths>/<xPath>
  - New name: *dmSegmentRef*
- CPF coordinated with related changes (eg "SCO dm")

Chap 7.7.5 Guidance and examples – XPath	*Svante Ericsson*	*Approved*

DMSegmentRef Schema Structure

SCO DM (Schema: Definition)

<Dmodule>

<Content>

<SCOContent>

<TrainingStep>

<DMRef> (to a LDM/DM)

<DMSegmentRef>

TargetPath (Attribute)

<DMRefIndent>

<DMCode>

S1000D-SCORM Bridge Application Programming Interface (API)

S1000D-SCORM API Bridge

Integrates any learning content development tool with any authoritative source database using an API data exchange specification

Provides ability to rapidly adjust learning content in response to changing operational environment

Optimizes the development process for content reuse

Facilitates integration of technical learning content into life cycle support

API Use Cases & Functional Requirements

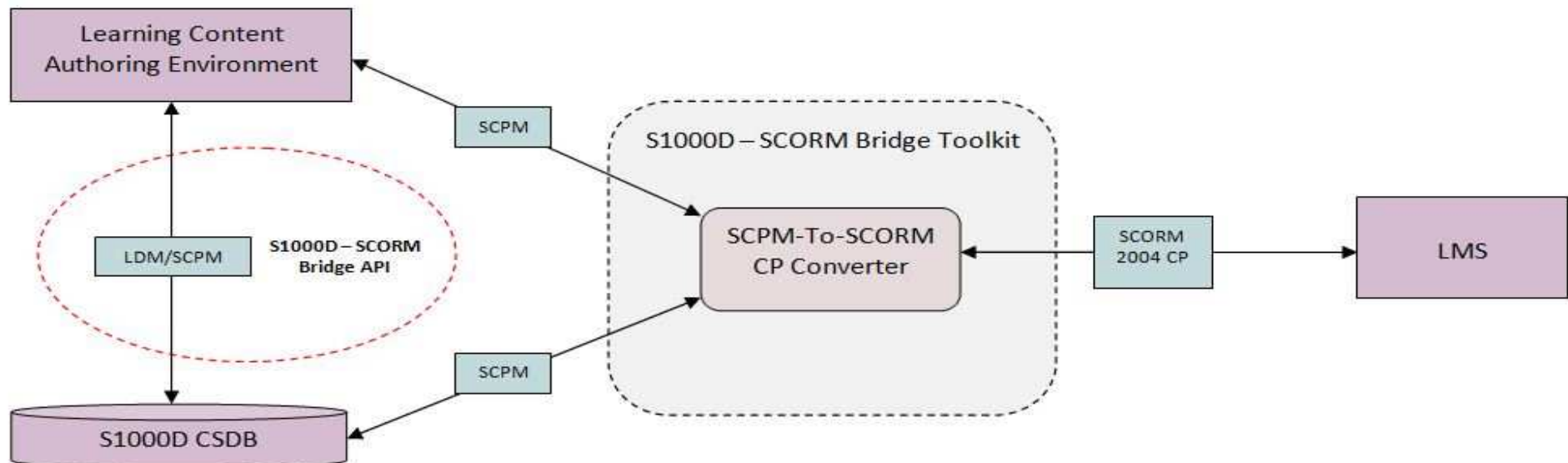| Use Case	API Method(s)
Authenticate with CSDB	**Connect, Disconnect**
Query CSDB	**Search**
Create CSDB Object	**AddCSDBObject, AddDM, CreateDMForDMC**
Create New Issue of CSDB Object	**CreateNewIssueForCSDBObject**
Modify CSDB Object	**CheckOut, CheckIn**
Delete CSDB Object	**DeleteCSDBObjectInstance**
…	…

S1000D-SCORM Bridge Toolkit

Bridge Toolkit Focus Area

- **S1000D-SCORM Open Toolkit**
  - Conversion of S1000D V4.x technical learning content to SCORM 2004
  - For use by: authoring tools, CSDB environments or supporting applications
  - Provide an expandable architecture and design to support the evolutionary changes.
  - Provide an open source hosting environment to reduce the work load

S1000D-SCORM Bike Course

Bike Operation
Assessment

S1000D-SCORM Bike Course

- **First fully developed example of S1000D learning and technical data modules conformant to SCORM.**

- **Available in a public learning management system**

- **Available in "raw" SCORM and S1000D code for analysis**

Access to Bike Example

- Registration Required.

- Example at:

  http://cloud.scorm.com/sc/InvitationConfirmEmail?publicInvitationId=897da767-83a3-4f20-8e6c-c241324f41a3

- Email wayne.gafford@adlnet.gov for XML code.

Questions or Comments?

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