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AICC Packaging Specification

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AICC CMI (Computer Managed Instruction) Subcommittee

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ABSTRACT

This document discusses packaging AICC courseware to facilitate moving it from one organization to another (via the Web or other media), from the holder of the courseware to a user (via any media such as a CD), or from a content server to a user (via the Web).

KEY WORDS

CMI	Nomadic CBT
LMS	Communication, CBT
Offline CMI	Packaging Guidelines
Courseware transfer	Transfer of courseware
Mobile CBT	
Moving courseware	

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1 Overview

CMI001 AICC CMI Guidelines for Interoperability defines a way to describe a course, its structure, and how the units in the course should be sequenced. However, it does not describe a mechanism to bundle all the pieces of a course to transfer them.

Several specifications including CMI011 Package Exchange Notification Services and CMI010 Offline CMI Communication describe scenarios in which AICC courseware is transferred. In the case of PENS (Package Exchange Notification) the transfer is normally from one organization to another. In the case of Offline CMI the transfer is from an organization to a user.

This specification describes one way in which courseware materials may be bundled or packaged for transfer.

1.1 Purpose

This specification defines the structure of AICC courseware packaged to facilitate its transfer. The package may be used to transfer courseware

- From one organization to another (via the Web or in media such as a CD or DVD)
- From one part of an organization to another part of the same organization.
- From a server to a user of the courseware via the Web.
- From an organization to a user via media such as CD or DVD.

1.2 Scope

This specification describes:

- Rationale for packaging a course into a zip archive
- Course Package Structure

1.3 Rationale

Packaging a course as a ZIP archive is important for the following reasons:

- Ability to download/distribute the complete course from a single web-URL or CD
- Compression of course data ensures faster download and easier distribution

1.4 Future Versions

In future versions of this specification, other mechanisms for describing an AICC course, its structure, and its sequencing rules will be included as alternatives to zipping the current AICC course description files. An XML file describing the course and its contents is being developed by the AICC CMI subcommittee.

2 Conformance

This conformance clause describes requirements the creating implementation (the implementation that generates the courseware package).

2.1 Creating Implementation

The creating implementation shall:

Include the following files - as defined in CMI001 - in the package.

- The course description file (*.crs)
- The assignable unit file (*.au)
- The descriptor file (*.des)
- The course structure file (*.cst)

All internal links to all pages/resources in the course may be relative or absolute.

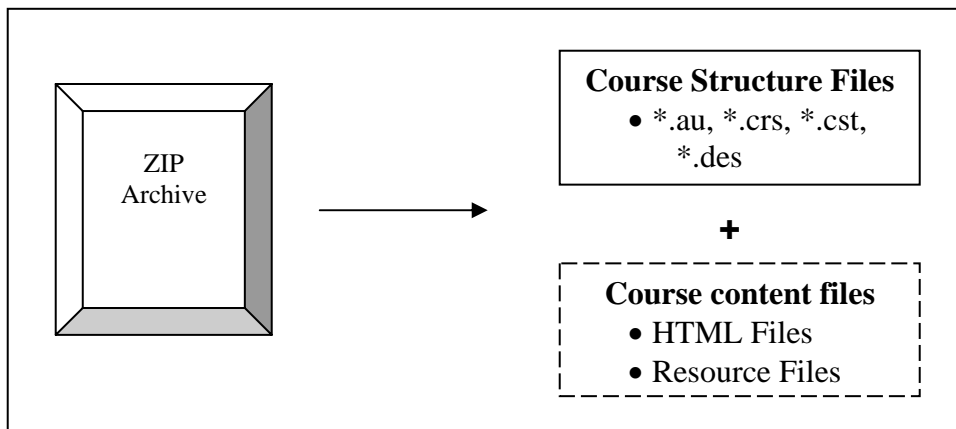
The creating implementation may include the following files defined in CMI001:

- The objectives relationships file (*.ore)
- The prerequisites file (*.pre)
- The completion requirements file (*.cmp)
- Content files. This includes assignable unit files and all of the assets required by the assignable unit files to deliver the content to a learner.

3 Course Package Structure

In general, the structure for a ZIP archive of a course to be downloaded/distributed is as follows:

1. The PKZip file shall conform to RFC 1951.
2. The zip file shall contain
 - a. A root folder
 - b. Course structure files (*.au, *.crs, *.cst, *.des) that are defined in CMI001
 - i. When decompressed/unzipped the course structure files shall be present in the root folder
3. The zip file may contain.
 - a. Subfolders for content files.
 - b. Course content files which may be local or remote. Content that is included in the zip file is considered local. All other content required for the course is considered remote.
 - i. Content files (local or remote) include html pages along with all resources i.e. scripts, style sheets, images, audio, video etc.
 - ii. The local content is referenced by a relative path
 - iii. The “remote” content is referenced by an absolute path ([file://](#), [http://](#),...)
 - c. Additional files describing the course (*.ore, *.pre, *.cmp) that are defined in CMI001. When decompressed/unzipped these additional files shall be present in the root folder
4. The zip archive shall not be password protected.



4 Glossary and Abbreviations

AICC	Aviation Industry CBT Committee
CMI	Computer Managed Instruction. In this document, this term refers to the system that manages a course and the student taking that course. (More general definitions will indicate that CMI's may be online as well as offline.)
LMS	Learning Management System (online CMI). In this document, this term is used to refer to an online system that manages a course and the students taking that course. (More general definitions describe other features of an LMS.)
Offline CMI	A program or set of programs that enable a student to study a course or part of a course and get credit from an online CMI system for doing so.
Download	The process of an Offline CMI, which can be used to get information on students and courseware that is necessary to support an offline learning experience for students.
PENS	Package Exchange Notification Services

5 Bibliography

1. CMI001 AICC CMI Guidelines for Interoperability version 4.0
2. CMI009 AICC Offline CMI Guidelines (currently in draft)
3. CMI011 Package Exchange Notification Services version 1.0a
4. HTTP: RFC 1945 – Hypertext Transfer Protocol – HTTP/1.0.