IMS Abstract Framework: Glossary

Version 1.0

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1. Introduction

1.1 Overview

The IMS Abstract Framework (IAF) is a device to enable the IMS to describe the context within which it will continue to develop its eLearning technology specifications. This framework is not an attempt to define the 'IMS architecture', rather it is mechanism to define the set of interfaces for which IMS may or may not produce a set of interoperability specifications. In the cases where IMS does not produce a specification then every effort will be made to adopt or recommend a suitable specification from another organization.

Extensive experience in the development of the current IMS specifications has shown that agreement on key terminology is an essential component for success. The current set of IMS specifications are a rich source of agreed key term definitions within the IMS context but so far no single record of those definitions exists. This glossary is an attempt to create a single common record of all of the key words to be adopted within IMS documentation. It is stressed that the following terminology is not an attempt to create a normative set for the eLearning industry as a whole. Its normative context is limited to usage within the IMS Abstract Framework and the derived specifications, white papers, etc.

1.2 Scope and Context

This is a 'living' document i.e., it is not archival in nature. Our ideas for various parts of the IAF are constantly being developed and so the information contained herein should always be considered in that context. This document is one of a set of closely related documents, the others being:

- The IMS Abstract Framework: White Paper [IMS, 03a] – the definitions of the key terms used throughout the ALF and the associated specifications;
- The IMS Abstract Framework: Glossary [IMS, 03b] – the identification of the set of applications and services and their corresponding implementation components which can be used to support eLearning system interoperability (the separation of the detailed descriptions of the applications, services and components allows the details of this white paper to focus on the abstract representation itself);
- The IMS Learning Activity Model – the description of the underlying content model and the learner design mechanisms to be adopted for the provision of learning content (this document will not be available until mid 2004);
- The IMS Use Case Portfolio – the collection and collation of the core set of use cases that reflect the interoperability needs within eLearning systems (work on the collection of these use cases is underway);
- The IMS Specification Development Methods and Best Practices [IMS, 03c] – the identification of the methods and best practices that must be used when developing and documenting IMS specifications.

This glossary defines the key terms used within the abstract framework and the associated IMS specifications.

1.3 Structure of this Document

The rest of this document contains:

The structure of this document is:

2. List of Acronyms	The list of acronyms used throughout the IMS specifications;
3. Glossary of terms	The definition of the keywords;
4. List of Reserved terms	The list of terms that should be used with caution within the context of the IMS specifications;

5. Maintenance of the Glossary	The process undertaken to ensure that the glossary reflects current practice within IMS;
Bibliography	The list of references and sources for the enclosed definitions.

1.4 Reference Documents

[IMS, 03a]	*IMS Abstract Framework: White Paper*, K.Blinco, S.Griffin, J.Merriman, C.Smythe, IMS Publication, Final Release, July 2003.
[IMS, 03b]	*IMS Abstract Framework: Applications, Services and Components*, C.Smythe, IMS Publication, Final Release, July 2003.
[IMS, 03c]	*IMS Specification Development Methods and Best Practices*, C.Smythe, IMS Publication, Final Release, July 2003.

2. List of Acronyms

The list of acronyms used within the IMS specifications is:

ADL	Advanced Distributed Learning
AICC	Aviation Industry CBT Committee
AMS	Assessment Management System
ANSI	American National Standards Institute
API	Application Programming Interface
ASI	Assessment, Section, Item
ASL	American Sign Language
as-SAP	Application Service Service Access Point
AT	Assistive Technology
ATRC	Adaptive Technology Research Centre, University of Toronto, Canada
BAT	Balanced Adaptive Testing
CAT	Computer Adaptive Testing
CBT	Computer Based Training
CEN/ISSS	Centre for European Normalisation/Information Society Standardisation Service
CETIS	Centre for Educational Technology Interoperability Standards (UK)
CMI	Computer Managed Instruction
CMU	Carnegie Mellon University
CP	Content Package
CPI	Content Packaging Interchange
CSS	Cascading Style Sheet
cs-SAP	Common Service Service Access Point
DC	Dublin Core
DCMI	Dublin Core Meta-data Initiative
DEST	Department of Education, Science, and Training (Australia)
DOI	Digital Object Identifier
DR	Digital Repository
DRI	Digital Repositories Interoperability
DTD	Document Type Definition
ebXML	e-Business XML
EDI	Electronic Document Interchange
EML	Educational Modelling Language
ETS	Educational Testing Service
FIB	Fill In Blank
FTP	File Transfer Protocol

GUID	Globally Unique Identifier
HEKATE	Higher Education Knowledge and Technology Exchange
HRMS	Human Resources Management System
HR-XML	Human Resources XML
HTML	Hypertext Mark-up Language
HTTP	Hypertext Transfer Protocol
HTTPS	Secure-Hypertext Transfer Protocol
IAF	IMS Abstract Framework
ICSE	IMS Common Service Infrastructure
IEEE	Institute of Electronic & Electrical Engineers
IETF	Internet Engineering Task Force
iAcc	IMS Accessibility Guidelines
iCP	IMS Content Packaging Specification
iDRI	IMS Digital Repositories Interoperability Specification
iEnt	IMS Enterprise Specification
iLD	IMS Learning Design Specification
iLIP	IMS Learner Information Package
iMD	IMS Meta-Data Specification
iQTI	IMS Question and Test Interoperability Specification
iRDCEO	IMS Reusable Definition of Competency and Educational Objective
iSS	IMS Simple Sequencing Specification
in-SAP	Infrastructure Service Access Point
IP	Internet Protocol
IRT	Item Response Theory
ISO	International Standards Organization
ISO/IEC	International Standards Organization/International Electrotechnical Committee
JTC	Joint Technical Committee
KM	Knowledge Management
LAN	Local Area Network
LCMS	Learning Content Management System
LDAP	Lightweight Directory Access Protocol
LDS	Logical Data Structure
LIP	Learner Information Package
LMS	Learning Management System
LOM	Learning Object Metadata (IEEE 1484.12.1 – 2002)
LTS	Learning Technology System

LTSA	Learning Technology Systems Architecture
LTSC	Learning Technology Standards Committee
MD	Meta-data
MIME	Multipurpose Internet Mail Extensions
MIT	Massachusetts Institute of Technology
MLE	Managed Learning Environment
NATO	North Atlantic Treaty Organization
NCAM	The CPB/WGBH National Center for Accessible Media
NISO	National Information Standards Organization
NUM	Numeric
OAI-PMH	Open Archive Initiative Protocol for Meta-data Handling
OKI	Open Knowledge Initiative
OpenUSS	Open University Support System
PAPI	Personal and Privacy Information
PDF	Portable Document Format
PLIRI	Position Location-independent Resource Identifier
QCL	Qualifications, Certifications & Licenses
QTI	Question & Test Interoperability
RDCEO	Reusable Definition of Competency or Educational Objective
REL	Rights Expression Language
RFC	Request For Comment
SA	Student Administration
SAP	Service Access Point
SAS	Student Administration System
SCA	Sharable Content Asset
SCO	Sharable Content Object
SCORM	Sharable Content Object Reference Model
SIF	Schools Interoperability Framework
SIIA	Software & Information Industry Association
SIS	Student Information System
SMIL	Synchronized Multimedia Integration Language
SMTP	Simple Mail Transfer Protocol
SOAP	Simple Object Access Protocol
SOAPwA	SOAP with Attachments
SS	Simple Sequencing
SVG	Scalable Vector Graphics

TCP	Transmission Control Protocol
TR&P	Transaction, Routing & Packaging
TTY	Text Telephone
UDDI	Universal Data Discovery Interface
UDP	User Datagram Protocol
UML	Unified Modelling Language
URI	Universal Resource Identifier
USOeC	United States Open e-Learning Consortium
VLE	Virtual Learning Environment
W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WAN	Wide Area Network
WGBH	Boston, Massachusetts Public Broadcaster
WSCL	Web Services Control Language
WSDL	Web Services Description Language
WSFL	Web Services Flow Language
XDR	XML Data Representation
XHTML	XML HyperText Mark-up Language
XML	Extensible Mark-up Language
XP	XML Protocol
XQuery	XML Query
XSD	XML Schema Definition
XSLT	Extensible Style-sheet Language Transformation
ZIS	Zone Integration Server

3. Glossary of Terms

The glossary is described using three columns:

- Term – the key word being defined;
- Definition – a short definition of the key word and its usage in IMS documents;
- Source – the original source of the definition. The actual definition may not reflect the origin of the term. The set of sources are taken from:-
  - AICC - from the Aviation Industry CBT Committee
  - ANSI - from the American National Standards Institute
  - CEN - from the European CEN standardization activities, particularly the CEN/ISSS
  - ebXML - from the E-business XML specifications
  - IEEE - predominantly from the IEEE Learning Technology Standards Committee
  - IETF - predominantly terms related to the Internet Protocol Suite and its associated applications
  - IMS - generic IMS usage
  - IMS/Acc - the IMS Accessibility guidelines
  - IMS/CP - the IMS Content Packaging specification
  - IMS/DRI - the IMS Digital Repositories Interoperability specification
  - IMS/Ent - the IMS Enterprise specification
  - IMS/ES - the IMS Enterprise Service specification
  - IMS/LD - the IMS Learning Design specification
  - IMS/LIP - IMS Learner Information Package specification
  - IMS/MD - the IMS Meta-data specification
  - IMS/QTI - IMS Question & Test Interoperability specification
  - IMS/RDCEO - the IMS Reusable Definition for Competency and Educational Objectives specification
  - IMS/SS - IMS Simple Sequencing specification
  - ISO/IEC - a formal definition from the ISO/IEC
  - OKI - the Open Knowledge Initiative activities
  - SC36 – the ISO/IEC JCT1 SC36 committee
  - SCORM - the ADL's Sharable Content Object Reference Model
  - SIF - Schools Interoperability Framework
  - Standards Australia – the Australian standards organization
  - UML - from the Unified Modelling Language definition activities
  - W3C - World Wide Web Consortium.

Term	Definition	Source
A		
Abstraction	A concept or generalization that specifies only those features of its instances relevant to a particular purpose.	SC36
Access	An action (such as a query or direct hyperlink) by either a human or machine enabling the retrieval of data.	IMS/DRI
Access Control	A security technology that selectively permits or prohibits certain types of data access based on the identity of the accessing entity and the data object being accessed.	ISO
Access Management Common Service	This is the common service definition within the *Common Services Layer* of the *Access Management Service*.	IMS
Access Management Service	The application of data about users, user profiles and services to access control systems so that authenticated users have access to those system, functions and resources that they are authorized to use. Typically Access Management Systems also seek to support single sign on, where the user is challenged for a single name and password and has access to more than one system or resource.	
Accessibility	Accessibility is concerned with ensuring that products and technologies are capable of supporting people with disabilities. The term disability is accepted in its broadest sense and so both physical and cognitive accessibility must be addressed.	
Activity	A discrete unit of learning that is sequenced. Activities may have associated *resources* that represent content that can be delivered to the learner. Activities can be organized in aggregations to form higher-level activities and may be composed of multiple levels of sub-activities. *Alternative*: An instantiation of a node in the activity tree for a learner.	IMS/SS
	An action to be undertaken by a role within a specified environment. There are two types of activities: learning activities and support activities.	IMS/LD
Activity Diagram	An Activity Diagram describes the sequencing of activities and includes support for sequential and parallel behavior. These diagrams are particularly useful for modelling workflow.	UML
Activity Structure	A container for activities and/or other activity-structures allowing sequencing and selection of its elements, and assigned to a role at a particular point in the learning process. Arbitrarily complex structures of activities can be formed, such as tree hierarchies.	IMS/LD
Activity Tree	The hierarchical collection of content objects (activities) with associated rules and specifications of learning behaviors, conditions and limits. The activity tree describes a complex learning experience. *Alternative:* The representation of the parent-child relationships between activities.	IMS/SS
Actor	An Actor is a role that a user or other agent plays with respect to a system. Actors are a key part of a *Use Case Diagram*.	
Adaptive Keyboard	Adaptive keyboards are designed for users with physical disabilities who cannot use a standard keyboard. Users with reduced range of motion may require smaller keyboards. Conversely, those without fine motor control may require a keyboard that is somewhat larger. Keyboards that offer fewer choices are helpful to users who benefit from a more structured learning environment and one-handed keyboards are helpful for those who can only type with one hand.	IMS/Acc

Term	Definition	Source
Agent	Software or a system component designed for a specific, automated task such as the discovery of *Meta-data* or *to* request *Assets.*	IMS /DRI
Aggregated Content Repository	A content repository aggregated from other content repositories.	SCORM
Alert	A message instigated from a *repository* and received by a *resource utilizer* often to inform a *resource utilizer* of new or updated meta-data and/or resources.	IMS/DRI
Alt Text	For blind or visually impaired users, applications should provide equivalent access to all visual aspects of learning technologies and content. Specifically, developers should add text descriptions (alternative text or alt-text) to all static images (e.g., pictures, logos, charts, links, other graphics) so the text can then be read by a screen reader or output to a Braille display.	IMS/Acc
Alternative Access	Alternative access provides the disabled user with a learning activity that differs from the activity used by the non-disabled user. However, the alternative activity is designed to achieve the same learning objectives. For example, a mobility-impaired student might be given the option of conducting a science experiment in a virtual laboratory, where the levels of dexterity, strength, and physical access are different from those required in a physical laboratory.	IMS/Acc
American Sign Language (ASL)	A signing language used to annotate content as a substitute for audio information.	IMS/Acc
ANSI TS130 Student Educational Record	The ANSI TS130 contains the format and establishes the data contents of a Student Educational Record (Transcript) Transaction Set for use within the context of Electronic Data Interchange (EDI) environment. The student transcript is used by schools and school districts, and by post-secondary educational institutions to transmit current and historical records of educational accomplishment and other significant information for students enrolled at the sending schools and institutions. The transcript may be sent to other educational institutions, to other agencies, or to prospective or current employers. The student transcript contains personal history and identifying information about the student, the current academic status, dates of attendance, courses completed with grades earned, degrees and diplomas awarded, health information (Pre-Kindergarten through Grade 12 only), and testing information.	ANSI
Application	A system, system component, tool, or agent that uses the *Application Services* to support an eLearning function. These are specific to the domain of use (e.g., student system, course management system, etc.) and they can vary from large, monolithic systems to very small agents. The IMS will not be defining the full set of possible applications that can be formed as a part of the abstract learning framework.	
Application Layer	When describing the abstract framework it is useful, for completeness, to refer to the layer where applications reside. Of particular importance is the identification of the boundary abstraction that exists between the framework and the application layer.	IMS
Application Program Interface (API)	An application program interface is an implementation of a *Service Access Point* (SAP) or collection of SAPs. A set of standard software interrupts, calls, functions, and data formats that can be used by an application program to access network services, devices, or operating systems.	SC36

Term	Definition	Source
Application Service	A Service providing functionality of particular importance to eLearning applications including, but not limited to those relating to content delivery, registration and enrolment, collaboration, sequencing, etc.	IMS/OKI
Application Services Layer	The Application Services Layer is one of the service layers defined within the *IMS Abstract Framework*. It contains the set of eLearning *Application Services* that are available to the set of *Applications* (represented by the *Applications Layer*) and these services will make the appropriate usage of the services available in the *Common Services Layer* and *Infrastructure Layer*.	IMS
Architecture	In the context of eLearning, an architecture is a representation of a collection of services which cooperate to provide a particular set of electronic-based learning capabilities. The abstract framework can be used to create any number of eLearning architectures. An eLearning architecture may be constructed by the Application Profiling of the IMS and other specifications.	
Assessment	Within the IMS QTI specification, an Assessment is equivalent to a 'Test'. It contains the collection of Items that are used to determine the level of mastery, or otherwise, that a participant has on a particular subject. The Assessment contains all of the necessary instructions to enable variable sequencing of the Items and the corresponding aggregated scoring for all of the Items to produce the final score. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Assessment Application Service	This is the application service definition within the *Application Services Layer* of the *Assessment Service*.	IMS
Assessment Engine	An Assessment Engine is the part of an eLearning system that is responsible for driving the Assessment process from start to finish. This will include the presentation of the assessment, quiz, test, etc., the processing of the user responses and the reporting of the corresponding scores and other management information.	IMS/QTI
Assessment Result	This is the data structure that contains the detailed assessment information for a particular attempt at the assessment. Each result can contain information about one assessment only (including any contained sections and items). http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Assessment System	A computer-based application designed to evaluate a person's level of understanding of a particular content area.	
Asset Repository	A computer-accessible collection of electronic representations of media, text, images, sound, Web pages, assessment objects or other pieces of data that can be delivered to a Web client.	SCORM
Asset	Any digital resource that can be submitted to or requested from a *Digital Repository*. In an IMS context, such a resource is typically used in instruction or learning, and is either purposed as a learning object, a component of a learning object, or a 'raw' information resource. While meta-data can also be utilized as an asset, the model distinguishes between assets and their associated meta-data.	IMS/DRI
Assignable Unit	The smallest element of a course that can be managed by a learning management system.	AICC

Term	Definition	Source
Assistive Technology (AT)	Assistive technology is an umbrella term used to describe any product or technology-based service that helps disabled people to live, learn, work, and enjoy life. In the context of online education, AT refers to hardware and software technologies that enable people with disabilities to use a computer more effectively.	IMS/Acc
Authentication	Verifying a user's claimed identity.	SC36
Authentication Common Service	This is the common service definition within the *Common Services Layer* of the *Authentication Service*.	IMS/OKI
Authentication Service	A service that verifies the identity of an OKI-agent and introduces that agent and its credentials to the application.	OKI
Authorization	The permission to perform certain operations or use certain methods or services.	IEEE
Authorization Common Service	A Service that allows an application service to establish and query Authorizations. An Authorization has three components: the Agent that is authorized; the Function that the Agent is authorized to do; and the Qualifier representing the context in which the Agent can perform the Function. This is the common service definition within the *Common Services Layer* of the *Authorization* service.	IMS/OKI
Aviation Industry CBT Committee (AICC)	The Aviation Industry CBT Committee is a membership-based international forum that develops recommendations on interoperable learning technology, principally for the commercial aviation and related industries. As such its members include both plane and equipment manufacturers, carriers, software and multimedia vendors and a growing number of interested parties not directly engaged in the sector, but nevertheless interested in the work being done there. The AICC was responsible for the development of the Computer Management Instruction (CMI) specification. http://www.aicc.org	AICC
B		
Behavior	The term behavior is used to describe the ways in which a system, an application, an object, a component, etc. is permitted to respond to stimuli. The behavior is normally represented by a set of stable states across which the system moves in response to stimuli that cause the transition. Behavior is normally time dependent and so a pure data model representation is insufficient.	
Binding	An application or mapping from one framework or specification to another. This word should not be used by itself without qualification and clear definition. XML-binding (the mapping of the corresponding information model into one of its XML equivalents) is the default realization of each the IMS specifications.	SC36 IMS
Block	An arbitrarily defined grouping of structure elements. A block is composed of related assignable units or other blocks. In the case of SCORM a block consists of one or more SCOs.	AICC
C		

Term	Definition	Source
Cascading Style Sheets (CSS)	Cascading Stylesheets (CSS), as used with HTML and defined by W3C, are able to alter the display and formatting of all or part of the contents of the HTML file to which they apply. For example, <H1> tags in the HTML file can be designed to appear as bold, 15 point, and blue. But a different CSS can instead render them as 30 point for a low-vision learner. CSS are, however, capable of altering the formatting and display of selected aspects of the entire contents of the HTML file. The browser will display the whole HTML file to every user. http://www.w3.org/Style/CSS/	W3C
Cataloguing Information	Information about content that facilitates its labelling, indexing, search, storage, retrieval, execution, display, licensing, maintenance, or use.	
CEN/ISSS	The CEN in co-operation with the European Commission's DG III & DG XIII has set up the CEN/ISSS, a working group, to address European requirements for Educational Technology.	CEN
Certification	In the IMS context, Certification is the process undertaken to determine whether or not an implementation of an IMS specification conforms to that specification as stated by the associated conformance statement.	IMS
Class	The Class of an *Object* is the abstract descriptor of a set of object instances. It describes the set of objects instances that share the same attributes, operations and relationship with other objects. The dependencies between classes are shown using a *Class Diagram*.	UML
Class Administration Application Service	This is the application service definition within the *Application Services Layer* of the *Class Administration Service*.	IMS
Class Administration Service	A Service allowing educational applications to use and manage information regarding classes and people. In higher education implementations this service typically defines the interface between educational applications and student information systems.	IMS/OKI
Class Diagram	A Class Diagram describes the objects in the system and the various kinds of static relationships that exist among them. The static relationships are Associations (a student may read a number of books) and Sub-types (a student is a type of person). Class diagrams also show the attributes and operations of a class and the constraints that apply to the way the objects are connected e.g., the multiplicity.	UML
Collaboration Application Service	This is the application service definition within the *Application Services Layer* of the *Collaboration Service*.	IMS
Collaboration Diagram	A Collaboration Diagram is one form of *Interaction Diagram*. The Collaboration Diagram shows the exchange of messages between the objects for a particular use case. Unlike the *Sequence Diagram* the order of the messages is denoted by explicit numbering and not by their order in the collaboration diagram.	UML
Collaboration Service	A collection of components that serve to manage the synchronous and asynchronous interaction between any two or more users of the system. The service is context neutral to the users role or profile and can be accessed from any part of the system.	IMS

Term	Definition	Source
Collaborative Learning	Involves learning activities based on two or more participants, including both asynchronous (e.g., discussion board) and synchronous (e.g., chat, video conferencing) systems. Standards based descriptions of collaboration require descriptions of the participants involved (and their different roles), the content involved, and the systems required to facilitate collaboration (cf. Learning Design WG).	
Commerce Application Service	This is the application service definition within the *Application Services Layer* of the *Commerce Service*.	IMS
Common Service	A software service that is common across a wide variety of enterprise application domains, for instance finance and accounting, digital library, human resources, etc. A software service that is foundational and can serve as critical building blocks for higher-level domain specific service implementations.	IMS/OKI
Common Services Layer	The Common Services Layer is one of the service layers defined within the *IMS Abstract Framework*. It contains the set of eLearning *Common Services* that are available to the set of *Application Services* (represented by the *Applications Services Layer*) and these services will make the appropriate usage of other services available in the *Common Services Layer* and *Infrastructure Layer.*	IMS
Competency Management Application Service	This is the application service definition within the *Application Services Layer* of the *Competency Management Service*.	IMS
Competency Management Service	A Service that allows the management of the competencies-related aspects within an eLearning system. This includes the management of a learner's competencies, the creation of competency definitions and the association of these definitions within learner content, etc.	IMS
Component	A Component is a physical and replaceable part of a system that conforms to and provides the realization of a set of interfaces. Classes and components are similar however components physically exist and they consist of operations i.e., they have attributes, that are reachable only through their interfaces. The dependencies between a set of components is shown using a *Component Diagram*.	UML
Components	The collection of parts that are reusable within a learning design. The elements role, activity-structure, learning-activity, support-activity and environment are all included in the components section of an IMS Learning Design document instance.	IMS/LD
Component Diagram	A Component Diagram shows the various *Components* in a system and their dependencies. It is used to represent the physical realization of a system. A Component Diagram can be combined with a *Deployment Diagram*. This diagram should be used when the physical information is different from the associated logical information.	UML
Computer Managed Instruction (CMI)	A computer-based process that facilitates and controls access to content, testing, and tracking of relevant data to achieve a learning outcome. http://www.aicc.org	AICC/ SCORM

Term	Definition	Source
Condition	A rule used to influence for flow of a play in a unit of learning. Used in conjunction with properties, conditions add further refinement and personalization facilities to a learning design. Conditions have the basic format: IF [expression] THEN [show, hide, or change something or notify someone]. The expressions are mostly defined on properties (e.g., IF pre-knowledge-English="4").	IMS/LD
Confidentiality	The holding sensitive data in confidence, limited to an appropriate set of individuals or organizations.	
Conformance	In the IMS context this is the statement of the properties that an implementation of an IMS specification must possess in order to be defined as providing the functionality defined within the specification. The implementation may provide other functionality beyond the scope of the defined conformance.	IMS
Conformance Profile	This is the further profiling of a Domain Profile to create a definitive statement of how the specification(s) must be used to support conformance testing. Successful completion of the corresponding conformance testing is used to identify systems that are compliant with the conformance profile.	IMS
Conformance Summary	This is one part of the conformance statement that is used in some of the first generation IMS specifications. It is a summary that shows, in colloquial terms, the capabilities of a particular implementation with respect to the corresponding IMS specification. The other part of the conformance statement is the *Interoperability Statement*.	IMS
Content Aggregation	The process of creating content by combining two or more existing pieces of content.	
Content Management Application Service	This is the application service definition within the *Application Services Layer* of the *Content Management Service*.	IMS
Content Management Service	A Service that provides mechanisms for the creation, flexible management (e.g., aggregation, sequencing, dynamic rendering) and publishing of content. This service allows educational applications to publish, deliver, search for, and manage rights, role and meta-data information on digital assets.	
Content Package	A unit of usable (and reusable) content as defined within the *IMS Content Package Specification*. An IMS Content Package consists of a logical description of the package (the *Manifest*) and the physical resources. http://www.imsglobal.org/content/packaging/index.cfm	IMS/CP
Content Package Specification	An information model describing data structures that are used to provide interoperability of Internet based content with content creation tools, learning management systems (LMS), and run time environments. http://www.imsglobal.org/content/packaging/index.cfm	IMS/CP
Corporate Training Management System (CTMS)	A computer-based application used to track training plans and schedules for employees and/or customers, manage enrolments, record training outcomes, and communicate training outcomes to other systems or people (e.g., managers, Human Resource Management System).	
Course Catalogue	This is a list of courses that are available to a set of learners. This list will consist of the course tile, its identifier plus any other appropriate information.	IMS/Ent

Term	Definition	Source
Course Construction	Course Construction refers to the assembly of learning objects or courseware objects within a framework that accommodates their sequencing and assessment.	
Course Element	One of the three building blocks of a course, namely assignable units, blocks, and objectives.	AICC
Course Structure	The description of all course elements, their relationships to each other, their prerequisites, and their completion requirements.	AICC
Creator	An entity primarily responsible for making the content of a *resource*.	IMS/DRI
Curriculum	A set of courses or smaller learning units grouped according to one or more educational specializations.	SC36
D		
Database Management Common Service	A Service that allows an application to access and update the contents of a database.	IMS
Definition Model	TBD.	IMS/SS
Deliver	To transport an *asset* from a *digital repository* to a *resource utilizer* in response to a *request*.	IMS/DRI
Delivery Behavior Model	The process that validates that the content resources for the identified activity may be delivered, i.e., none of the conditions that apply to the delivery of the content for the activity and attempt have been or are being violated.	IMS/SS
Deployment Diagram	A Deployment Diagram shows the physical relationships among software and hardware components in a delivered system. It can be used to show how *Components* and *Objects* are routed and moved across a distributed system. This diagram should be used when the physical information is different from the associated logical information.	UML
Digital Repositories Interoperability Specification	A recommended set of information models and protocols to enable interoperability between two digital repositories during search, publish, and store operations.	IMS/DRI
Digital Repository	A collection of digital assets and/or meta-data accessible via a network without prior knowledge of the digital repository's structure.	IMS/DRI
Digital Repository Management Application Service	This is the application service definition within the *Application Services Layer* of the *Digital Repository Management Service*.	IMS
Digital Repository Management Service	A service that enable access to, and the management, of a *Digital Repository.*	IMS
Digital Resource Management	Management of a digital resource through its entire lifecycle, including creation of the resource and its meta-data, versioning, publishing, access management, discovery, digital rights management, preservation/archiving and destruction.	
Digital Rights Management	Digital Rights Management (DRM) includes a range of functions to support the management of intellectual property for digital resources. These functions include description, identification, trading, protection, monitoring and tracking of digital content. DRM systems also support the expression of rights offers and agreements (e.g., licenses) for content and all the parties involved (including rights holders).	

Term	Definition	Source
Digital Rights Management Common Service	This is the common service definition within the *Common Services Layer* of the *Digital Rights Management Service*.	IMS
Digital Rights Management Service	A Service that provides mechanisms to enable permissions over learning object usage to be offered, controlled, tracked, and managed. The DRM service also provides for the management of rights holders and their entitlements related to the usage of learning objects.	
Directory	Typically a digital repository of information about network-accessible entities such as services, other repositories, specifications, content objects, people, and organizations that is managed, searchable, and organized according to a specific logic such as alphabetical order.	IMS/DRI
Directory Common Service	This is the common service definition within the *Common Services Layer* of the *Directory Service*.	IMS
Directory Service	A service that typically holds information about network-accessible entities such as services, other repositories, specifications, content objects, people and organizations, and provides a way of storing, operating on and retrieving directory information that is both human and machine accessible. Information required by other services such as an authorization service or digital rights management service may be provided by a directory service.	
Discover	An action resulting from a query that involves presentation of results to the user. Querying typically depends on meta-data being exposed for effective discovery. Querying, browsing, 'following a path' are all aspects of the discover function commonly called discovery.	IMS/DRI
Discovery Common Service	This is the common service definition within the *Common Services Layer* of the *Discovery Service*.	IMS
Discovery Service	A service that enables the discovery of learning content and other related information sources.	IMS/DRI
Document Type Definition (DTD)	The Document Type Definition (DTD) was the primary XML binding control document format of IMS but this has now been superseded by XSD (at present these bindings are working to the May 2001 version of XML Schema). The DTD defines a set of elements, their content models and attributes, and their simple relationships.	W3C
Domain Profile	Customizing parts of one or more standards and/or specifications to meet the needs of a particular market or community i.e., a domain. A set of one or more base standards and/or specifications, and where applicable the identification of chosen classes, subsets, options, vocabularies and parameters of those standards/specifications necessary for accomplishing a particular function. In this context, the SCORM is an *Application Profile*. In general an *Application Profile* will not consist solely of IMS specifications.	
Dublin Core	(1) An information model for defining interoperability between content catalogues. (2) An organization that promotes development of meta-data standards and practices.	DCMI

Term	Definition	Source
Dublin Core Metadata Initiative	An open forum engaged in the development of interoperable online meta-data standards that support a broad range of purposes and business models. DCMI's activities include consensus-driven working groups, global workshops, conferences, standards liaison, and educational efforts to promote widespread acceptance of meta-data standards and practices.	DCMI
E		
Electronic Business XML (ebXML)	The Electronic Business Extensible Markup Language (ebXML) is an international initiative established by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) and the Organization for the Advancement of Structured Information Standards (OASIS) with a mandate to undertake a 15-18 month program of work. The purpose of the ebXML initiative is to research and identify the technical basis upon which the global implementation of XML can be standardized. The goal is to provide an XML-based open technical framework to enable XML to be utilized in a consistent and uniform manner for the exchange of electronic business data in application-to-application, application-to-human, and human-to-application environments. http://www.ebxml.org	ebXML
Enrolment Management	Enrolment management encompasses the initial creation of group membership and various changes to that data over time. Examples of enrollment management include learner enrollment in courses and instructor assignment to courses.	IMS/Ent
Enterprise Service	The reworking of the IMS Enterprise Specification to support behavioral definitions. This is an aggregation of the *Party Management Application Service*, *Group Management Application Service* and *Membership Management Application Service*.	IMS/ES
Enterprise Specification	An information model that supports the interoperability of information about people, groups, and group affiliations between two or more systems. http://www.imsglobal.org/enterprise/index.cfm	IMS/Ent
Enterprise System	A computer application that is used to store and manipulate information representing people, groups, and affiliations within an organization.	
Environment	A structured collection of learning objects, services, and sub-environments within which activities take place.	IMS/LD
Equivalent Access	Equivalent access provides the disabled user with content identical to that used by the non-disabled user. For the disabled user however, that content is presented using a different modality. Providing a course textbook in Braille format, on audiotape, or in digital format are examples of equivalent accessibility. Equivalent access should be provided whenever possible and *Alternative Access* should be provided only if equivalent access is not possible. However, there are numerous examples where software developed for alternative access has become the mainstream choice when its value to all learners was recognized.	IMS/Acc
Exemplar Implementation	A non-normative implementation of a specification or set of specifications, most frequently of a standard, that is looked to as a concrete example of how an *Application Profile* could be implemented.	
Expose	To make *meta-data* available to *resource utilizers* for purposes of *searching*, *gathering*, and *alerting*.	IMS/DRI

Term	Definition	Source
Extensible Stylesheet Language Transformations (XSLT)	Extensible Stylesheet Language Transformations (XSLT) allow the selection and formatting of particular parts of an XML file. They also allow the addition (within the XSLT file itself) of other elements such as images, text, or video not included in the default presentation. Thus, authors need only write data files once but can specify a variety of presentations to suit different needs. For example, using HTML to create multi-language websites requires separate files for each language for each page. XSLTs allow the stylesheet to select each language's text from the contents of a single file for the page and display it together with any language-specific images, audio, or video. http://www.w3c.org/Style/XSL/	W3C
F		
File Management Common Service	A Service that provides a way of storing and retrieving static content. It provides an abstraction layer between the file system and the Application.	IMS/OKI
File Transfer Protocol (FTP)	An Internet application protocol i.e., a part of the Internet Protocol Suite, for transferring files of different types between computers over a TCP/IP network. http://www.ietf.org/rfc	IETF
Framework	By itself, this term has no meaning in IMS specifications, and should not be used in IMS documents unless referring to the usage of the term referentially.	
G		
Gateway	Typically, a functional interface to a digital repository that provides pathways to either single or multiple search requests and results. Translations of syntax may be performed by a gateway.	IMS/DRI
Gather	To identify, transport, and process *meta-data* that is *exposed* by a *digital repository* for the purposes of resource utilization.	IMS/DRI
Gather Engine	A software application commonly known as a Harvester.	IMS/DRI
Generic Transport Sub-layer	The Generic Transport is the bottom-most sub-layer of the *Infrastructure Layer* in the abstract learning framework. It is the portion of the abstract learning framework responsible for providing the actual end-to-end data transport across the data network. This is based upon established protocols such as FTP, SMTP, HTTP, HTTPS, etc.	IMS
Global Elements	A mechanism used in order to be able to set and view properties during the teaching and learning. There are four global elements: set-property, view-property, set-property-group and view-property-group. Global elements are designed to be included in any XML content schema by use of XML namespaces (e.g., for inclusion in XHTML).	IMS/LD
Grade-book	A grade-book is a record of the grades, comments, attendance, and scores for a student or group.	IMS/Ent
Group Management Application Service	This is the application service definition within the *Application Services Layer* of the *Group Management Service.*	IMS

Term	Definition	Source
Group Management Service	Group management services can include data from class creation and class scheduling, and the ongoing maintenance of that data. A source system creates and maintains group information, which needs to be shared with other systems that are involved with group management functions. The flow of group management information is not necessarily one way; some data may be updated by a target system and passed back to the source system.	IMS/ES
H		
Higher Education Knowledge and Technology Exchange (HEKATE)	The Higher Education Knowledge and Technology Exchange (HEKATE) is a not-for-profit international exchange whose mission is to help shape the next generation of education products and services. HEKATE's goal is to offer innovative, transcultural approaches for 21st century learning environments. Its members are individuals and organizations involved in higher education, publishing, consulting, and research, as well as a broad array of technology vendors. http://www.hekate.org	
HR-XML	The Human Resources (HR-XML) Consortium is an independent, non-profit association dedicated to the development and promotion of a standard suite of XML specifications to enable e-commerce and the automation of human resources-related data exchanges. http://www.hr-xml.org	
Human Resource Management System (HRMS)	A computer-based application that manages personnel records, financial data, benefits, and other functions for an organization.	
Hypertext Transfer Protocol (HTTP)	An Internet protocol i.e., a part of the Internet Protocol Suite, which defines message format and transmission for media objects in a TCP/IP network. HTTP is typically used to transmit HTML documents between a web server and a web client e.g., a browser. http://www.ietf.org/rfc	IETF
I		
Identification Common Service	This is the common service definition within the *Common Services Layer* of the *Identification Service*.	IMS
Identification Service	A service that is responsible for producing and making available Global/Local User Identifiers (GUIDs/LUIDs).	
IEEE Personal & Privacy Information (PAPI)	A terminated IEEE LTSC standardization activity similar, but of more limited scope, to that completed by IMS with their Learner *Information Package Specification*.	IEEE
Implementation	Within the context of IMS – the realization of a specification into data or a computer-based operation, as applicable.	
IMS Abstract Framework (IAF)	The abstract representation of the systems, applications, components and infrastructure used to provide eLearning. The abstract framework can be considered a meta-architecture and as such it is not possible to create an implementation of abstract learning framework.	IMS

Term	Definition	Source
In-built Scoring Algorithms	This is the set of *Outcomes Processing* scoring algorithms that are defined within the IMS *QTI Specification*. These algorithms are characterized by a set of default parameters and behavioral models that must be supported by an IMS QTI savvy *Assessment Engine*.	IMS/QTI
Information Resources System	A computer application that enables discovery and delivery of information resources. The application may operate with a single repository, provide access to a set of related repositories or provide a single interface to distributed heterogeneous resources.	
Infoseeker	Any user or agent attempting to *discover*, *access*, *search*, or *gather* assets.	IMS/DRI
Infrastructure	The mechanism through which the *Application Components* and *Common Components* interact i.e., communication, messaging, discovery, workflow, security, encryption, transaction. The infrastructure can be supplied through any appropriate combination of communications technology.	IMS
Infrastructure Layer	The Infrastructure Layer is the bottom layer in the abstract framework. This layer is decomposed into several sub-layers which may, or may not, be realized within any particular system implementation. The services defined within the Infrastructure Layer are capable of supporting the services in both the Application and Common Service layers.	IMS
Initiator	An Initiator is the system, agent, etc. that starts, or initiates, the data exchange. As a consequence it will send and, in general, receive data from the target *Respondent*(s).	
Institute of Electronic & Electrical Engineering Learning Technology Standards Committee (IEEE LTSC)	The IEEE Learning Technology Standards Committee is the only industrial or professional body engaged in the educational domain, which has a recognized formal standing in standardization. Given the diversity of the forums represented by the participants in the IEEE, there exist a large number of working groups focused on specific activities, as well as more horizontal activities (such as the Architecture and Reference Model and the Glossary working groups) that attempt to tie the wider ranging work together. http://ltsc.ieee.org	IEEE
Institution Role	The Institution Role identifies the type of role that an agent has within an institution.	IMS/Ent
Instructional Content	Instructional Content refers to resource material(s) used to support learning – may consist of textual, graphic or multimedia assets contextualized by learning objectives or tasks.	
Interaction Diagram	Interaction Diagrams are models that describe how groups of objects collaborate in some behavior. There are two kinds of Interaction Diagram: *Sequence Diagrams* and *Collaboration Diagrams*.	UML
Interface	A shared boundary between the layers of the abstract learning framework across which information is passed. Types of interfaces are the User Interface and SAPs.	
Internet Engineering Task Force (IETF)	The IETF is responsible for the development of the 'Internet' with respect to the set of underlying protocols, services and support tools and techniques. The IETF releases its technical work in the form of Request For Comments (RFCs). The IETF was responsible for the creation of vCard. http://www.ietf.org	IETF

Term	Definition	Source
Internet Protocol	The primary internetworking protocol defined by the IETF and a core component of the Internet Protocol Suite. It is responsible for ensuring that the data is correctly routed across a data network. http://www.ietf.org/rfc	IETF
Interoperability Binding	A binding that supports interoperability between two systems, with no ambiguity. Interoperability can occur at several levels within the layered abstract framework and so the content must be clearly defined.	
Interoperability Statement	This is one part of the conformance statement that is used in some of the first generation IMS specifications. It is a detailed technical checklist that identifies all of the feature capabilities of the implementation in terms of the corresponding IMS specification functions. The other part of the conformance statement is the *Conformance Summary.*	IMS
ISO/IEC JCT1 SC36	The International Organization for Standardization and the International Electrotechnical Commission has formed a Joint Technical Committee (JTC1) that is focused on the area of Information Technology standardization. ISO/IEC JTC1/SC36 (Sub Committee 36) is intended to address standardization in the area of information technologies that support learning, education and training. http://www.ISO/IEC.org/ISO/IEC/en/stdsdevelopment/tc/TC.html	ISO/IEC
Item	In the IMS QTI specification, an Item is the smallest exchangeable object within QTI-XML. An Item is more than a 'Question' in that it contains the 'Question', the presentation/rendering instructions, the response processing to be applied to the participant's response(s), the feedback that may be presented (including hints and solutions) and the meta-data describing the Item.	IMS/QTI
	When a component, a learning objective, or a prerequisite needs a resource, an 'item' element is used in the similar way to the organization part of IMS Content Packaging.	IMS/LD
	A node that describes the shape of the organization.	IMS/CP
Item Result	The data structure that contains the detailed information about the IMS QTI Item(s) completed, or to being attempted. Each result can contain information about one item only.	IMS/QTI
J		
K		
Knowledge Management	The term Knowledge Management (KM) refers to a multi-disciplined approach to achieving organizational objectives by making the best use of knowledge. KM focuses on processes such as acquiring, creating and sharing knowledge and the cultural and technical foundations that support them. The aim is to align knowledge processes with organizational objectives. The way in which KM is approached varies from organization to organization. There is no limit on the number of knowledge processes that can be used including community-based collaboration, knowledge repositories, competitive intelligence, experiential learning and environmental considerations for encouraging sharing.	Standards Australia
L		

Term	Definition	Source
Language Binding	As per 'Interoperability Binding' but substitute any implementation-specific language (Java, C#, etc.).	
Learner	Any user who uses resources to gain knowledge, understanding or skill.	IMS
Learner Information Package (LIP)	A Learner Information Package is an IMS LIP Specification compliant XML instance that is exchanged between Profile Systems. It contains information about a single person or agent. http://www.imsglobal.org/profiles/index.cfm	IMS/LIP
Learner Information Package Specification	An IMS information model used to describe learners and their learning history. http://www.imsglobal.org/profiles/index.cfm	IMS/LIP
Learning Object Metadata (LOM)	LOM is an IEEE multi-part standard that includes both a data model and various bindings. http://ltsc.ieee.org/wg12/index.html	IEEE
Learner Progression Management Application Service	This is the application service definition within the *Application Services Layer* of the *Learner Progression Management Service*. It is based upon the components derived from the IMS *Learner Information Package specification*. Learner progression is one facet of profile management.	IMS
Learner Progression Management Service	A service that is used to access and manipulate the information related to the progression of a learner through learning activities.	
Learning Activity	An activity to be carried out by a learner in order to obtain a learning objective. The notion of a Learning Activity recognizes that learning can happen with or without learning objects (learning is different from content consumption) and that learning comes from learners being active.	IMS/LD
	See *Activity.*	IMS/SS
Learning Content Management System (LCMS)	An LCMS is a multi-user environment where learning developers can create, store, reuse, manage, and deliver digital learning content from a central object repository. LCMS products allow users to create and reuse small units of digital learning content. An LCMS manages the process of creating and delivering learning *content*, just as the words indicate.	
Learning Design	A description of a method enabling learners to attain certain learning objectives by performing certain learning activities in a certain order in the context of a certain environment.	IMS/LD
Learning Management	Learning Management refers to the processes of administering, tracking, scheduling, and reporting activities associated with a learner interacting with (online) instructional content.	
Learning Management System (LMS)	A computer application that enables learning management.	
Learning Object	Any reproducible and addressable digital or non-digital resource used to perform learning activities or support activities. Represented in IMS Content Packaging with the element 'Resources'.	IMS/LD
Learning Objective	The intended outcome for learners. It is possible to define learning objectives both at the global level of the unit of learning and for every single learning activity in the learning design.	IMS/LD

Term	Definition	Source
Library Management System	A computer application that manages the assets of a library throughout their lifecycle. An infoseeker typically discovers these assets through an interface known as the OPAC (online public access catalogue). As the assets of libraries expand to include digital assets, some Library Management Systems now incorporate digital asset management functions. Discovery and delivery services for assets located in remote repositories may also be provided by the Library Management System or by a complementary Information Resource System.	
Life Long Learning Log	This is a lifetime record of the learning activities undertaken by a learner. It may also include electronic copies of all of the products produced by the learner as a part of the learning activities. This is also known as the *Life Long Learning Portfolio*.	
Life Long Learning Portfolio	This is a lifetime record of the learning activities undertaken by a learner. It may also include electronic copies of all of the products produced by the learner as a part of the learning activities. This is also known as the *Life Long Learning Log*.	
Lightweight Directory Access Protocol (LDAP)	The Lightweight Directory Access Protocol (LDAP) v3 specification core is defined in IETF RFC 2251-2256 and 2829-2831. LDAP is a protocol for accessing distributed directory services that act in accordance with X.500 data and service models. LDAP can be mapped to any underlying directory system provided the LDAP interface with the X.500 data and service model as defined in LDAP. Most X.500 directories support both LDAP and DAP (X.500 Directory Access Protocol). http://www.ietf.org/rfc	IETF
M		
Manage	Functions related to the internal maintenance and operation of a *digital repository.*	IMS/DRI
Managed Learning Environment (MLE)	The whole range of information systems and processes (including Virtual Learning Environments) that contribute directly, or indirectly, to learning and the management of that learning.	JISC
Manifest	A description in XML of the resources comprising meaningful instruction. A manifest may also contain zero or more static ways of organizing the instructional resources for presentation. The scope of manifest is elastic. A manifest can describe part of a course that can stand by itself outside of the context of a course (an instructional object), an entire course, or a collection of courses. http://www.imsglobal.org/content/packaging/index.cfm	IMS/CP
Membership	The Membership structure, within the IMS *Enterprise Specification* is used to define the members of a Group. A member can be a Person or another Group. A Group or Person can be a member of any number of groups. The Group and the member are identified using their sourcedids.	IMS/Ent
Membership Management Service	Membership management services allow the management of the relationships between group/group and group/party. This service includes the creation, deletion, reading and updating of the membership record. The membership information defines the role(s) of the member (party or group) in the group.	IMS/ES

Term	Definition	Source
Membership Management Application Service	This is the application service definition within the *Application Services Layer* of the *Membership Management Service.*	IMS
Meta-data	Descriptive information about data that typically supports operations on *digital assets*. Structured data used to describe the characteristics of a learning resource, a data object, or a component of a learning technology system.	IMS/MD SC36
Meta-data Management Application Service	This is the application service definition within the *Application Services Layer* of the *Meta-data Management* Service. It is based upon the components derived from the *IMS Meta-data specification*.	IMS
Meta-data Management Service	A service that enable access to, and the manipulation of, the meta-data for a set of objects.	
Meta-data Specification	An IMS information model used to describe content. http://www.imsglobal.org/metadata/index.cfm	IMS/MD
Method	The container element for a play and the conditions governing its execution.	IMS/LD
N		
Navigation Event	In the *Simple Sequencing specification*, when a learner is interacting with a learning experience through a user interface, each leaner request to move through the content or branch within the learning experience results in a "navigation event", e.g., a click to move to the next activity. These events map to a set of "navigation requests". In turn, each navigation request maps to an "exit request" and a "sequencing request" that will be used to both terminate the current activity and determine the next activity in the learning experience. http://www.imsglobal.org/simplesequencing/index.cfm	IMS/SS
Networked Information Discovery	The discovery of information and services via a computer network. Discovery is initiated by a query and is completed with the presentation of results to the user. Querying typically depends on either full text indexing or meta-data being exposed for effective discovery. Querying, browsing, 'following a path' all fall under the discovery process.	
Networked Information Retrieval	Retrieval of information identified in a discovery action. The asset may be located locally or remotely.	
Notification	The triggering of new activity or the sending of a message in response to an event. Events which trigger notifications include the completion of an activity and the changing of a property-value.	IMS/LD
O		
Object	An Object is an abstraction of a physical entity or conceptual thing. It has states and an inherent identity. It attains certain behavior through a set of predefined operations that may access or change its state. An object encapsulates its properties (called attributes) and the operations that access or change those properties. The state of the object is determined by the values of its attributes. The *Class* of an object is the abstract descriptor of a set of object instances.	UML

Term	Definition	Source
Object-bank	In the IMS QTI specification, an Object-bank is a collection of Items, Sections or a mixture of Items and Sections. An object-bank has its own unique identifier and meta-data to enable its contents to be searched. An object-bank is used to contain the database of evaluation objects that can be used to construct Assessments. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Objectives	In Simple Sequencing learning objectives are separate from learning activities. Learning objectives represent a set of locally and globally scoped data items, each with a satisfaction status and a satisfaction measure. Simple Sequencing makes no assumption as to how to interpret the objective (e.g., is it a competency, is it a mastery, or is it simply a shared value?). Activities may have more than one associated local objective and may reference multiple globally shared objectives. Multiple activities may reference the same global objective, thus sharing the data values. http://www.imsglobal.org/simplesequencing/index.cfm	IMS/SS
Open Knowledge Initiative (OKI)	The Open Knowledge Initiative is defining a service-based architecture, consisting of service and Application Programming Interface (API) specifications, designed to support educational software, e-learning applications, and learning management systems. OKI also provides support services to its developer and architectural specification communities, though online forums, documentation, training, and community events. OKI is led by the Massachusetts Institute of Technology and is a collaborative effort among a number of higher education institutions including Stanford University, North Carolina State University, The University of Pennsylvania, The University of Wisconsin, Dartmouth College, The University of Michigan, and Cambridge University. http://web.mit.edu/oki/	OKI
OpenUSS	The Open University Support System (OpenUSS) concept is based on the Application Service provider (ASP) model, which means that one or more organizations (Universities, Schools, Communities and Companies) can be handled within one instance of OpenUSS. OpenUSS gives users the flexibility to use their chosen appliances – the so-called multi-channel information delivery – to access the OpenUSS instance e.g., InternetPC, PDAs and mobile phones. http://www.openuss.org	OpenUSS
Organization	A particular hierarchical structure of the content in a package.	IMS/CP
Outcomes Processing	Outcomes processing is the operation by which the scores from a series of individual assessment mechanisms are aggregated to create one or more composite scores. The aggregation can be based upon any combination of Items and Sections. The set of algorithms available for the aggregation are accessed through the outcomes processing component operators. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
P		
Package	A Package is a grouping of *Classes* to create a higher-level unit. A visualization of the dependencies between packages is sometimes referred to as a *Package Diagram*. Packages may own other packages.	UML

Term	Definition	Source
	A unit of usable (and reusable) content. This may be part of a course that has instructional relevance outside of a course organization and can be delivered independently, as an entire course or as a collection of courses. A Package must be able to stand-alone; that is, it must contain all the information needed to use the contents for learning when it has been unpacked.	IMS/CP
Package Diagram	A Package Diagram is a visualization of the dependencies between two or more *Packages*.	UML
Package Interchange Format (PIF)	A computer-readable representation of an IMS content package. Usually the representation (binding) is expressed in XML. http://www.imsglobal.org/content/packaging/index.cfm	IMS/CP
Party Management Service	Party management services allow the management of the information about people and organizations. This service includes the creation, deletion, reading and updating of the party record. The party information includes name, address, contact information, etc.	IMS/ES
Party Management Application Service	This is the application service definition within the *Application Services Layer* of the *Party Management Service.*	IMS
Persistent Location independent Resource-Identifier	The Persistent Location-independent Resource Identifier is the IMS proposal for the construction of a globally unique identifier. http://www.imsglobal.org/implementationhandbook/index.cfm	IMS
Play	Specifies which roles perform what activities in what order. A play is modelled according to a theatrical play with acts and role-parts. In general: a play consists of a sequence of acts. In each act, different activities are set for different roles and are preformed in parallel. When an act is completed, the next act starts until the completion requirements for the learning design are met.	IMS/LD
Portfolio Management Service	Portfolio management services allow the management of an ePortfolio. This service includes the creation, deletion, reading and updating of the portfolio.	IMS
Portfolio Management Application Service	This is the application service definition within the *Application Services Layer* of the *Portfolio Management Service.*	IMS
Prerequisite	An entry requirement for learners engaging in learning. As with learning objectives, the prerequisites can be provided at the level of the unit of learning and/or for individual learning activities.	IMS/LD
Privacy	The concept of ensuring that access to, use, modification, disclosure or retention of personal information is restricted to those authorized. Individual legislatures may set down specific requirements for implementation of privacy.	
Profile Management	Typically, data about people is maintained in Enterprise systems, and is passed to the learning management system. When this personal profile data changes in the Enterprise system, it needs to be updated in the learning management system. This is termed profile management.	IMS/LIP
Profile Management Application Service	This is the application service definition within the *Application Services Layer* of the *Profile Management Service*.	IMS

Term	Definition	Source
Profile Management Service	A service that enables access to, and the manipulation of, a learner's profile, *Life Long Learning Log* or *Life Long Learning Profile*. This service enables a single point of management access to a profile that may be replicated and or distributed in partial form across many Profile Repositories.	
Property	A variable used for a variety of purposes including monitoring, personalization and assessment. Learning Design supports five types of properties: local properties, local-personal properties, local-role properties, global-personal properties and global properties.	IMS/LD
Publish	To transport an asset from a creator to a digital repository for storage.	IMS/DRI
Q		
QTILite Specification	This is an IMS specification that describes a reduced form of the IMS QTI ASI Information Model, XML Binding and Best Practice specifications. It focuses on the specification of a reduced form of *Items* i.e., there is no support for *Assessments* and *Sections*. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Qualifications, Licences, Certificates (QCL) Component	The QCL Component is derived from the qcl data structure created as a part of the *IMS Learner Information Package* specification. The QCL Component defines the data structures and interfaces responsible for describing the qualifications, certifications and licenses awarded to the learner i.e., the formally recognized products of their learning and work history. This includes information on the awarding body and may also include electronic copies of the actual documents. http://www.imsglobal.org/profiles/index.cfm	IMS/LIP
Query	Operation performed typically by a user or agent wishing to discover and have information delivered from a system.	IMS/DRI
Question & Test Interoperability Specification	An information model that describes question (item) and test (assessment) data and their corresponding results reports. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
R		
Reference Implementation	A normative implementation of a *Domain Profile*, showing how it should be implemented.	
Reference Model	Has no IMS specific meaning in the IMS specifications, and as such is not to be used in any normative IMS context. Its usage is limited to the adoption made in other standards/specifications.	
Refreshable Braille Display	Refreshable Braille displays are tactile devices that move small pins up and down to create Braille letters. These Braille displays are the primary means of access to computers for users who are deaf-blind.	IMS/Acc
Registry	A system that typically holds meta-data schemas, configuration data, application profiles, identifiers or other lookup data that is both human- and machine-accessible. A registry can also be understood as an instance of a digital repository.	
Registry Common Service	This is the common service definition within the *Common Services Layer* of the *Registry Service*.	IMS
Registry Service	A service that enables access to, and manipulation of, a *Registry.*	

Term	Definition	Source
Relational Rules Common Service	This is the common service definition within the *Common Services Layer* of the *Relational Rules Service*.	IMS
Relational Rules Service	A service that enables the creation and management of rules that define the relationship between data objects.	OKI
Repository	Has no normative meaning in the IMS specifications unless accompanied by a qualifier e.g., *digital repository.* Its usage is limited to the adoption made in other standards/specifications.	
Request	To ask a *digital repository* for the *delivery* of an *asset*.	IMS/DRI
Resolver	A service that enables access to a specific instance of a resource.	IMS/DRI
Resource	Any digital asset that can be accessed to support learning. A resource can be a meta-data record, a learning object, or a component of a learning object.	IMS/DRI
	A physical asset such as a web page, media file, text file, assessment object or other piece of data in file form.	IMS/CP
Resource Utilizer	Any functions that make use of *assets* or *meta-data*.	IMS/DRI
Respondent	A Respondent is the system, agent, etc. that replies, or responds, to the data exchange request issued by an *Initiator.* As a consequence it will receive and, in general, send data to the source *Initiator*(s).	
Response Processing	Response Processing is the set of algorithms and instructions that are executed as a result of the responses supplied by a user to a presented Item Component. The output from the response processing consists of a set of values allocated to the corresponding scoring variables and the triggering of the appropriate feedback. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Reusable Definition for Competency or Educational Objectives	A computer-accessible representation of skills, knowledge, tasks, and learning outcomes that can be used in any particular context. http://www.imsglobal.org/rcd/index.cfm	IMS/RDCEO
Reusable Definition for Competency or Educational Objectives Specification	An information model for describing, referencing and exchanging definitions of competencies, primarily in the context of online and distributed learning. http://www.imsglobal.org/rcd/index.cfm	IMS/RDCEO
Role	A specification of the type of participant in a unit of learning. There are two basic role types—Learner and Staff, which can be sub-typed to allow learners to play different roles in different learning activities (e.g., task-based, role-play, simulations). Similarly support staff can be sub-typed and given more specialized roles, such as Tutor, Teaching Assistant, Mentor, etc. Roles thus lay the basis for multi-user models of learning.	IMS/LD
Rollup	The Simple Sequencing process uses information about the results of a learner's interactions with activities, and the learner's record for objectives (e.g., completion, score) to control the sequencing of other activities. The data attributes that describe the results of the learner's interactions, i.e., the elements of the tracking model, may be referenced for any activity in the activity tree. The results data for an activity may be determined from the results data from the children of the activity. The process of computing the results data for an activity from the results data from the children of the activity is called the "rollup process" or just "rollup".	IMS/SS

Term	Definition	Source
S		
Scalable Vector Graphics (SVG)	Scalable Vector Graphics Language (SVG) is a vector graphics language recommended and supported by W3C, and is thus used by many of the W3C member companies who develop relevant authoring and user agent software. SVG supports meta-data about the object so that an image object can point to an alternative description of the object located elsewhere.	IMS/Acc
Scheduling Common Service	This is the common service definition within the *Common Services Layer* of the *Scheduling Service*.	IMS
Scheduling Service	The service that allows the creation and management of the sequencing of activities according to some time reference.	
Schools Interoperability Framework (SIF)	The Schools Interoperability Framework is an industry initiative, based in the USA, to develop a technical blueprint for K-12 software that will enable diverse applications to interact and share data now and in the future. SIF has two deliverables: the SIF Message Specification and the Implementation Specification. While the SIF Message Specification defines the messages that each application can exchange with others, the Implementation Specification defines the software implementation guidelines for SIF. The Implementation Specification does not make any assumption of what hardware and software products need to be used to develop SIF-compliant applications. Instead, it only defines the requirements of architecture, communication, software components, and interfaces between them. SIF is focused on supporting interoperability between schools-based educational administration systems. http://www.sifinfo.org/	SIF
SCO Repository	A computer-accessible collection of sharable content objects, which are one or more assets that include a specific launchable asset that utilizes the SCORM Run-Time Environment to communicate with Learning Management Systems (LMSs). http://www.adlnet.org/index.cfm	SCORM
SCORM Run-Time Environment	The purpose of the SCORM Run-Time Environment is to provide a means for interoperability between SCO-based learning content and LMSs. The three components of the SCORM Run-Time Environment are defined as the 'Launch', 'Application Program Interface (API)' and 'Data Model'. http://www.adlnet.org/index.cfm	SCORM
Screen Magnifier	Screen magnifiers are software solutions for users with low-vision. These products allow the user to enlarge the size of images and text displayed on screen. Screen magnifiers may also permit the user to change the default colors of the display. Typical screen magnifiers track the cursor or the active region of the screen and will automatically enlarge that portion of the display.	IMS/Acc
Screen Reader	Screen readers are software products designed for blind users. Screen readers are also useful to users with learning disabilities. Screen readers locate information on the computer screen and vocalize it for the user using text-to-speech audio hardware and software. Most screen readers work in close concert with the operating system, relying on the computer's built-in capabilities.	IMS/Acc
Search	Operation performed by a user or agent using *meta-data* and the *expose* function typically prior to retrieving desired assets.	IMS/DRI

Term	Definition	Source
Search Model	A defined method for searching the *meta-data*.	IMS/DRI
Section	A Section is an IMS QTI data object that used to construct hierarchical evaluation objects. A Section may contain one or more other Sections. A Section is used to support two different needs: to represent different grouping constructs as defined by the appropriate educational paradigm e.g., a Section could be equivalent to a subject topic; and to constrain the extent of the sequencing instructions and to control the ways in which the different possible sequences may be constructed. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Section Result	This is the data structure that contains the detailed information about the IMS QTI Section(s) completed, or to being attempted. Each result can contain information about one section (including any contained sections and/or items). http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Security	Security is the mechanism by which access to information is prohibited without appropriate authorization. The information is protected using a variety of mechanisms e.g., encryption, access control, etc.	
Security & Privacy Common Service	This is a *Common Service* in the *Common Services Layer*. This is a service that provides data encryption thereby making the information private and/or secure (the degree of depends on the cryptographic security of the encryption codes). This service may or may not be used in conjunction with other similar services supplied as a part of the *Infrastructure Layer*.	IMS
Sequence Diagram	A Sequence Diagram is one form of *Interaction Diagram*. The Sequence Diagram shows the exchange of messages between the objects for a particular use case. The order of the messages on the diagram denotes the sequence.	UML
Sequencing	Sequencing is defined as a method for representing the intended behavior of an authored learning experience such that any learning technology system can sequence discrete learning activities in a consistent way. A learning designer or content developer declares the relative order in which elements of content are to be presented and the conditions under which a piece of content is selected or skipped during presentation. http://www.imsglobal.org/simplesequencing/index.cfm	IMS/SS
Sequencing Application Service	This is the application service definition within the *Application Services Layer* of the *Sequencing Service*.	IMS
Sequencing Behavior Model	The process that evaluates a sequencing request in terms of the content model described by the activity tree and determines what actual content object should be delivered to the learner.	IMS/SS
Sequencing Control	Simple Sequencing provides a means to control sequencing behavior by defining the set of sequencing requests that can be applied to, and are permissible for, a cluster of activities. To achieve this, a learning designer can define a Control Mode for a set of aggregated activities.	IMS/SS
Sequencing Definition Model	An information model describing intended sequencing behaviors. Rules, limit conditions and sequencing behaviors defined for activities.	IMS/SS
Sequencing Request	The identification of a sequencing action.	IMS/SS

Term	Definition	Source
Sequencing Rule	Simple Sequencing processes may reference the sequencing rules for any activity in the activity tree. Sequencing rules are optional. Sequencing rules are defined only where needed. Default data is used if the data is not instantiated for a given rule, if needed. The sequencing rule descriptions (the set of attributes shown below) specify the details of individual rule-based sequencing behaviors for an activity. Sequencing rule description information for an activity includes the associated data listed below.	IMS/SS
Sequencing Service	A Service that enables any set of objects to be performed in any particular sequence. The set of possible sequences is defined using an appropriate set of sequencing rules. This service is based upon the *Sequencing Component*.	
Service	An identifiable i.e., named, software component, whose behaviors, objects and *Service Access Points* are defined, described and discoverable, and support interactions with other services via their *Service Access Points*. A normative description of each service is presented in *UML*.	
	Facilities used during teaching and learning, for instance, a discussion forum or some other communication facility.	IMS/LD
Service Access Point (SAP)	A service access point is an interface between two adjacent layers of the abstract framework. The SAP is an abstract representation of the service available through the interface and as such its physical implementation could be referred to as an API.	
Session	A lasting connection across which data is exchanged between an application, such as a web browser, and another application, usually located on a server.	IMS
Sharable Content Object (SCO)	A Sharable Content Object (SCO) represents a collection of one or more Assets that include a specific launchable asset that utilizes the SCORM Run-Time Environment to communicate with LMSs. A SCO represents the lowest level of granularity of learning resources that can be tracked by an LMS using the SCORM Run-Time Environment. http://www.adlnet.org/index.cfm	SCORM
Sharable Content Object Reference Model (SCORM)	The Sharable Content Object Reference Model (SCORM) defines a Web-based learning 'Content Aggregation Model' and 'Run-Time Environment' for learning objects. At its simplest, it is a model that references a set of interrelated technical specifications and guidelines designed to meet the DoD's high-level requirements for Web-based learning content. From an IMS perspective, SCORM is an Application Profile. http://www.adlnet.org/index.cfm	SCORM
Simple Mail Transfer Protocol (SMTP)	The Simple Mail Transfer Protocol is one of the IETF's Internet email protocols. It is used to support the exchange of emails from the client to the email server (POP or IMAP are used to send the email from the server to the client). http://www.ietf.rfc	IETF

Term	Definition	Source
Simple Object Access Protocol (SOAP)	SOAP version 1.2 provides the definition of an XML document which can be used for exchanging structured and typed information between peers in a decentralized, distributed environment. It is fundamentally a stateless, one-way message exchange paradigm, but applications can create more complex interaction patterns (e.g., request/response, request/multiple responses, etc.) by combining such one-way exchanges with features provided by an underlying transport protocol and/or application-specific information. SOAP is silent on the semantics of any application-specific data it conveys, as it is on issues such as the routing of SOAP messages, reliable data transfer, firewall traversal, etc. However, SOAP provides the framework by which application-specific information may be conveyed in an extensible manner. Also, SOAP provides a full description of the expected actions taken by a SOAP processor on receiving a SOAP message. http://www.w3.org/2000/xp/Group/	W3C
Simple Sequencing	Simple Sequencing is the functionality developed in the *IMS Simple Sequencing Specification* to make available alternative paths through a set of aggregated content. The sequencing instructions are embedded within the *Manifest* of the *Content Package* of the learning materials. The actual route through the learning material can be dependent upon the actions of the user.	IMS/SS
Simple Sequencing Specification	A method for representing the intended behavior of an authored learning experience. Therefore, any learning technology system can sequence the discrete learning activities in a consistent way. http://www.imsglobal.org/simplesequencing/index.cfm	IMS/SS
Simulation Application Service	This is the application service definition within the *Application Services Layer* of the *Simulation Service*.	IMS
Simulation Service	A Service that enables real-time simulation of a system to be rendered through a generic user interface. Any type of system can be simulated and so this service defines the set of permitted interactions to a particular simulation. Simulation is a particular type of *Learner Activity.*	
Single Switch	Single switches are hardware solutions for users with physical disabilities who can only control the computer with one or two specific movements. Single switches are used with software that works by scanning through preset options on screen. The user triggers the switch when the option they wish to choose has been highlighted during scanning. Single switches can be used in conjunction with on-screen keyboards and word prediction software. Scanning software can be used to create customized screen layouts for use with a variety of applications.	IMS/Acc
SOAP with Attachments	SOAP with Attachments is the extension of *SOAP* to support the exchange of MIME files as a part of the XML message data body. This allows SOAP to be used to exchange non-XML information in the same overall structure as the XML message document. http://www.w3.org/2000/xp/Group/	W3C
Spider	A software application used by search engines to index website content. Also commonly referred to as a ‘crawler’.	IMS/DRI
State Diagram	A State Diagram describes the behavior of a system i.e., it describes all of the possible states that a particular object can enter and how the object’s state changes as a result of events that affect the object. A state diagram consists of a set of labelled states and transitions.	UML

Term	Definition	Source
Store	To receive and maintain an *asset* in a persistent form upon its *publication*.	IMS/DRI
Student Administration System (SAS)	A computer-based application used to track training plans and schedules for students, manage enrolments, record training outcomes, and communicate training outcomes to other systems or people (e.g., teachers). See also Student Information System. Although similar to Student Information Systems, a SAS supports more details of a student's learning experience. An SAS generally is used in the context of a LMS or CMS and a Student Information System, whereas a Student Information System may be used separately and is normally the system of record for student data. The distinction between an SAS and SIS will blur over time as each take on more functions of the other.	
Student Information System (SIS)	A computer-based system used in educational institutions to store and manipulate data about students, courses, course grades, and course enrolments. It is generally the system of record for student data (cf. Student Administration System).	
Sub-manifest	A manifest within a manifest.	IMS/CP
Submit	To transport an asset from a *creator* to a *digital repository* for *storage*.	IMS/DRI
Subscription Service	A registry where users can log interest in events being posted by eLearning services. An example may be configuring which noticeboard events a student wishes to receive.	IMS
Summary Result	This is the data structure that contains the summary information for a particular instance of the evaluation e.g., an assessment. Each result can contain only one set of summary information. http://www.imsglobal.org/content/question/index.cfm	IMS/QTI
Support Activity	An activity carried out in support of a role performing one or more learning activities. For example, a staff role might have the support activity to grade reports made by people in the learner role named 'student'. Each student creates his/her own report and the tutor grades every report (repeating the 'grade report' support activity).	IMS/LD
Synchronized Multimedia Integration Language (SMIL)	The Synchronized Multimedia Integration Language (SMIL) is another XML language. SMIL, pronounced "smile", is recommended for the creation of multimedia presentations for the Web and is supported by popular user agents, including RealPlayer and QuickTime Media Player. http://www.w3.org/AudioVideo/	W3C
System Role	The system Role is the role that an agent is permitted within a software environment.	IMS/Ent
T		
Taxonomy	A logical system of classification and nomenclature structured into ordered categories.	
Text Telephone (TTY)	A text telephone (TTY) is a telephone with added text display that is used to assist deaf or hard-of-hearing customers.	IMS/Acc
Tracking	Tracking is the process by which detailed information about an agent, data structure, object, etc. is recorded so that any moment in the history of the structure can be recreated. Tracking information includes data about transitory states or actions.	
Tracking & Logging Common Service	This is the common service definition within the *Common Services Layer* of the *Tracking & Logging Service*.	IMS

Term	Definition	Source
Tracking & Logging Service	A Service that enables any other service to be tracked and the corresponding information and events to be logged. The log will be made available via a range of report formats. The tracking of a service enables all, or part of, the sequence of stable and meta-stable states to be recreated.	IMS
Tracking Model	An information model containing results data for a learner related to objectives and progress on learning activities.	IMS/SS
Transaction, Routing & Packaging	The ebXML have produced a 'Transaction, Routing & Packaging specification' to define a communications-protocol neutral method for exchanging electronic business messages. It defines specific enveloping constructs that support reliable, secure delivery of business information. Furthermore, the specification defines a flexible enveloping technique that permits ebXML-compliant messages to contain payloads of any format type. This versatility ensures that legacy electronic business systems employing traditional syntaxes (i.e., UN/EDIFACT, ASC X12, or HL7) can leverage the advantages of the ebXML infrastructure along with users of emerging technologies. http://www.ebxml.org/	ebXML
Transcript	A record of a student's summary performance from an educational interaction.	
Transmission Control Protocol (TCP)	The Transmission Control Protocol is the original Internet protocol responsible for proving reliable end-to-end communications. As such it is used on top of the *IP* protocol, by applications such as *FTP*, *HTTP*, etc., to turn the Internet into a reliable communications network. http://www.ietf.org/rfc	IETF
U		
Unit of Learning	An abstract term used to refer to any delimited piece of education or training, such as a course, a module, a lesson, etc. A unit of learning represents more than just a collection of ordered resources to learn—it includes a variety of prescribed activities (e.g., problem solving activities, search activities, discussion activities, peer assessment activities), assessments, services and support facilities provided by teachers, trainers and other staff members.	IMS/LD
Use Case	A use case is a set of scenarios tied together by a common user goal; a scenario is a sequence of steps describing an interaction between a user and a system. A use case can be explained through a *Use Case Diagram*.	UML
Use Case Diagram	A Use Case Diagram is a combination of visual and textual information used to describe a use case. Both tabular and graphical representations will be used by IMS to realize use case diagrams. A use case diagram identifies the Actors undertaking the user actions.	UML
Use Case Portfolio	This is the collection of reference use cases that have been collected by IMS. It is from the analysis of this portfolio that the core set of requirements for the IMS specifications have been identified.	IMS
User	In a broad sense, the roles of *learner*, *cr*eator, or infoseeker.	IMS/DRI
User Interface	How the user interacts with an application. In the abstract learning framework the User Interface is equivalent to the service access points into the *Application Layer.*	
User Messaging Common Service	Service that supports posting of instant or deferred and/or reliable messages from user to user, user to group, or system to user.	IMS/OKI

Term	Definition	Source
V		
vCard	The vCard specification allows the open exchange of Personal Data Interchange (PDI) information typically found on traditional paper business cards. The specification defines a format for an electronic business card, or vCard. The vCard specification is suitable as an interchange format between applications or systems. The format is defined independent of the particular method used to transport it. The transport for this exchange might be a file system, point-to-point public switched telephone networks, wired-network transport, or some form of unwired transport. The vCard has direct application to the way users utilize the Internet network. The vCard can be used to forward personal data in an electronic mail message. The numerous forms a user of the WWW fills out on a homepage can also be automated using the vCard. The Internet Mail Consortium is working with the Internet Engineering Task Force (IETF) to complete work on an extension to the Internet MIME-based electronic mail standard to allow for this capability. An XML binding of the vCard specification has produced a DTD. http://www.ietf.org/rfc	IETF
Virtual Learning Environment (VLE)	The “online” interactions of various kinds that take place between learners and tutors i.e., those components in which learners and tutors participate in “online” interactions of various kinds, including online learning.	JISC
Vocabulary	An established list of terms arranged in alphabetic order and explained.	
Voice Recognition Software	Voice recognition software allows the user to input data or control the computer by speaking. Voice recognition software benefits users who have difficulty typing or using their hands. Generally, applications and software that allow full access through keyboard commands are well suited for use with voice recognition software.	IMS/Acc
W		
Web Accessibility Initiative (WAI)	The definitive source for information on accessibility in Web technologies is the Web Access Initiative at the World Wide Web Consortium (W3C WAI). The WAI provides recommendations for achieving accessibility using W3C technologies for Web content, authoring tools, and user agents such as browsers and media players. Information is available on W3C technologies including, XML, HTML, SMIL, CSS, and SVG. http://www.w3.org/WAI/	W3C
Web Services Description Language (WSDL)	Web Services Description Language (WSDL) is an XML format for describing Web services. WSDL enables the separation of the description of the abstract functionality offered by a service from concrete details of a service description such as ‘how’ and ‘where’ that functionality is offered.	W3C
Workflow Common Service	This is the common service definition within the *Common Services Layer* of the *Workflow Service*.	IMS
Workflow Service	A Service that supports the automation of the learning process. As such it allows a set of procedural rules to be defined and actioned across a number of actors and supporting systems.	
World Wide Web Consortium (W3C)	A non-profit organization created to develop common protocols and promote the evolution and interoperability of the World Wide Web. http://www.w3c.org	W3C

Term	Definition	Source
X		
XML	Extensible Markup Language. A uniform method for describing and exchanging structured data that is independent of applications or vendors. http://www.w3.org/XML/	W3C
XML Binding	The abstract framework is expressed using UML. The XML binding is the preferred transformation of the UML to XML instances. The permitted syntax and semantics of the XML binding is defined using the appropriate *XSD(s)*.	
XML Instance	An XML Instance is a data structure, typically a file, which contains a series of XML statements. The IMS use XML control documents (*DTDs* and *XSDs*) to determine the validity of the structure and contents of the XML instance. An IMS XML Binding specification is in effect a definition of the valid structure and contents of the corresponding XML instance.	
XML Protocol (XMLP)	XMLP is a framework that can accommodate an open-ended set of XMLP modules defining a large variety of functions and services. Typical functions and services defined by XMLP modules can range from generic mechanisms for handling security, caching, routing and events to specific functions like submitting a purchase order. While XMLP itself is intended to be as simple and lightweight as possible, XMLP modules can be designed and composed to perform arbitrarily complex operations allowing the core protocol to remain simple. XMLP itself can be layered on top of a variety of underlying protocols that can help facilitate the transfer of XMLP messages. http://www.w3.org/2000/xp/Group/	W3C
XML Schema Definition (XSD)	XML Schema Definition (XSD) is the primary XML binding control document format of IMS (at present these bindings are working to the May 2001 version of XML Schema). The XSD defines elements, their content models, and attributes. It also defines the standard IMS vocabularies. The XSD defines the element types and attribute groups separately from the elements. http://www.w3.org/XML/Schema	W3C
XML-based Context Sub-layer	The XML-based Context is the topmost sub-layer of the *Infrastructure Layer* in the abstract framework. The Context Sub-layer is responsible for encapsulating the XML *Component* behaviors in a sequence of XML messages and associated resources e.g., images. The Context Sub-layer supports all of the services required to provide the required end-to-end behaviors.	IMS
XML-based Envelop Sub-layer	The XML-based Envelop is a sub-layer of the *Infrastructure Layer* in the abstract framework. The Envelop Sub-layer is used to encapsulate the XML data structures (messages and associated resources) supplied via the *XML-based Context Sub-layer* and to provide reliable exchange of these structures across the data network e.g., using *SOAP with Attachments*.	IMS
Y		
Z		

Term	Definition	Source
Z39.50	Z39.50 refers to the International Standard, ISO/IEC 23950: "Information Retrieval (Z39.50): Application Service Definition and Protocol Specification", and to ANSI/NISO/IEC Z39.50. The standard specifies a client/server-based protocol for searching and retrieving information from remote databases.	ISO/IEC
Zone Integration Server (ZIS)	The Zone Integration Server is a key device in the *SIF* architecture. The ZIS is the SIF messaging switch for a zone. Zones are linked by internetworking the ZIS for each zone. All SIF agent transactions take place through the ZIS. http://www.sifinfo.org/	SIF

4. List of Reserved Terms

Table 4.1 contains the list of reserved words and the conditions that limit their usage.

Word/Phrase	Usage Conditions
Application Profile	The phrase Application Profile is overused and this excess is causing confusion. The term 'Profile' can be used but it must be used to define a specific context e.g., 'Conformance Profile', 'Domain Profile', etc.
IMS Architecture	There is no such thing as the IMS Architecture, Learning Architecture, etc. This phase must not be used.
Learning Object	This phrase must not be used until an appropriate definition has been established in the context of the IMS specifications. One proposed definition is: "Any entity, digital or non-digital, which may be used for learning, education or training" *(IEEE LOM referenced by IMS Meta-Data Specification)*. In the IMS context, the term designates a digital resource that is an aggregation of one or more assets, purposed for learning, and contained in a Content Package together with the Learning Resource Meta-data describing the resource. Another proposal is to use the term 'Learning Component' and to define this in terms of the behaviors that are permitted by the component that encapsulates the content (this is from T.Anderson).
Reference Model	This has no meaning within an IMS context. It should only be used when describing a term that requires its adoption within the context of that term e.g., in SCORM.
Repository	This word should only be used with an associated qualifier e.g., a digital repository.

5. Maintenance of the Glossary

5.1 Glossary Implementation

This glossary will be made available as both a '.pdf' document and 'html' resource. The HTML resource will support:

- Multiple definitions for the same term with the appropriate source and context being displayed;
- Multilingual translations for each term, where available;
- Each term and language form will have its own meta-data description that will identify when the entry was last updated and the current status i.e., final or provisional;
- The history of the definition will also be maintained and displayed;
- An XML resource that can be visualized using an appropriate XML style-sheet;
- A packaged XML resource using the IMS Content Packaging format.

The HTML and XML resources will contain the most up-to-date definitions. The '.pdf' version will not be updated on a regular basis.

5.2 Adding New Terms

The glossary will be maintained by IMS staff (in this instance Mark McKell). The process for agreeing and mounting new entries is:

- New entries will be submitted, electronically, to the relevant IMS staff member;
- The IMS staff member will verify that the submitted entry has been agreed by one of the appropriate Project Groups, Area Interest Committees, etc.
- Once acceptance of the definition has been confirmed it will be added to the glossary with a provisional status (this will be shown visually using an appropriate mechanism);
- At an appropriate Development Committee (see the IMS Technical Board Policies and Procedures Document, V2.0, November 2002) meeting all of the provisional entries will be subjected to acceptance. Once accepted the status will be changed to 'final'.

5.3 Amending Terms

The process for agreeing amendments to established entries is:

- The modification will be submitted, electronically, to the relevant IMS staff member;
- The IMS staff member will verify that the modification has been agreed by one of the appropriate Project Groups, Special Interest Groups, etc.
- Once acceptance of the modification has been confirmed it will be added to the glossary with a provisional status (this will be shown visually using an appropriate mechanism);
- At an appropriate Infrastructure Committee meeting all of the provisional modifications will be subjected to acceptance. Once accepted the status will be changed to 'final'.

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