Digital Content Access for Florida School Districts:
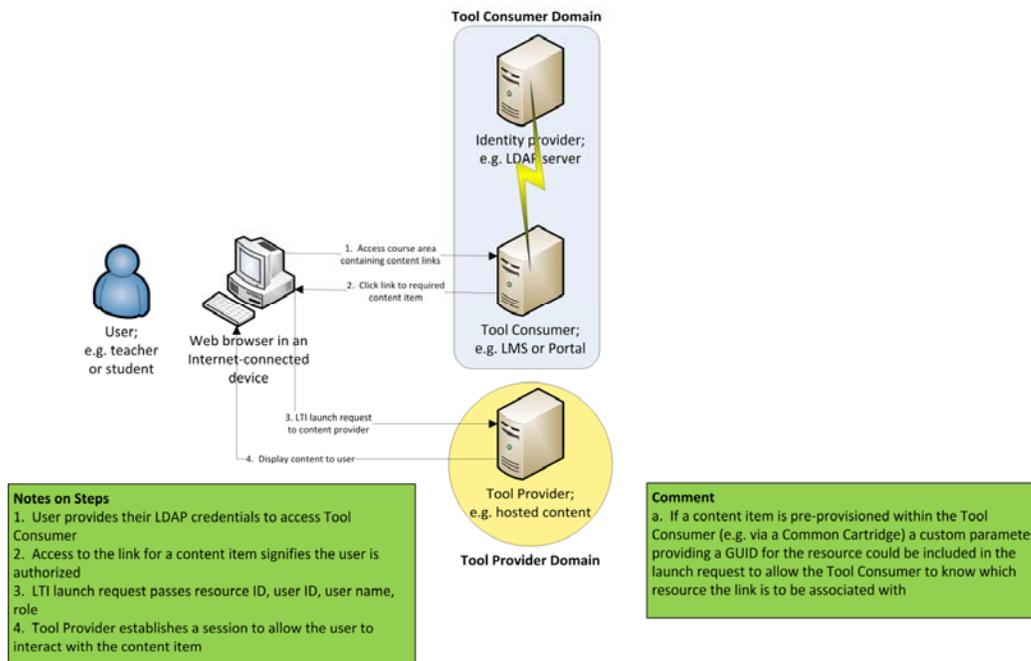
The solution will:

- Provide the state with a unified K-12 content standard for vendor populated digital content for Florida districts

- Allow the State to distribute and manage digital assets residing in district LOR for use in all districts Learning Management System (LMS) or other standards based delivery platforms

The solution must implement and be certified compliant (imscert.org) with IMS Global Common Cartridge, Learning Tools Interoperability™(LTI™) standards to achieve interoperability with a wide variety of IMS Global certified learning platforms.

There are several scenarios that will enable the delivery of digital content. Digital content providers may provide content access through any of these scenarios, but the preferred option is Scenario A: Accessing Content via Learning Tools Interoperability.
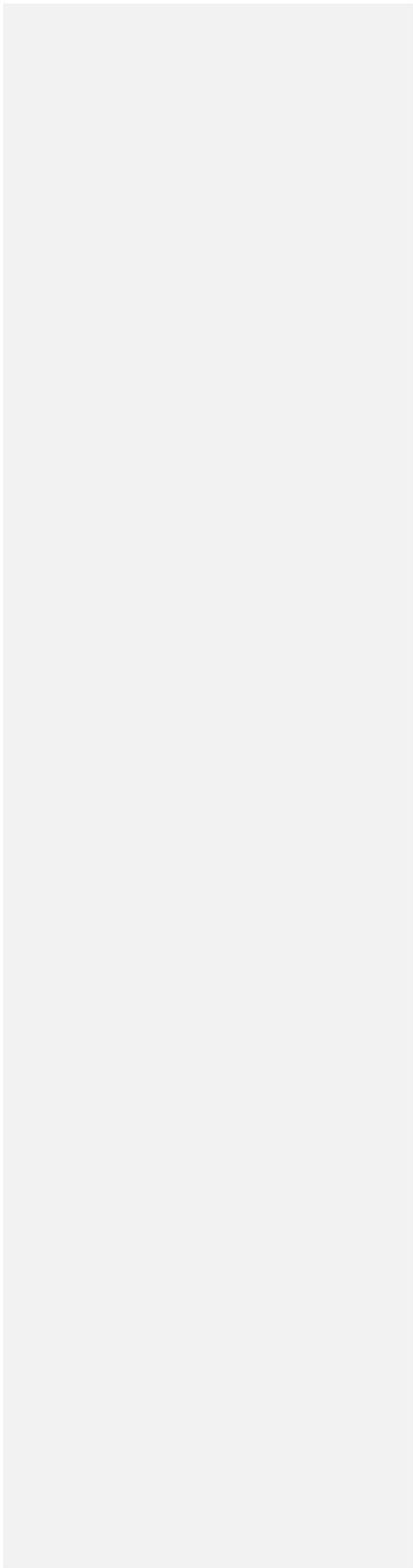
Scenario A: Accessing Digital Content via Learning Tools Interoperability
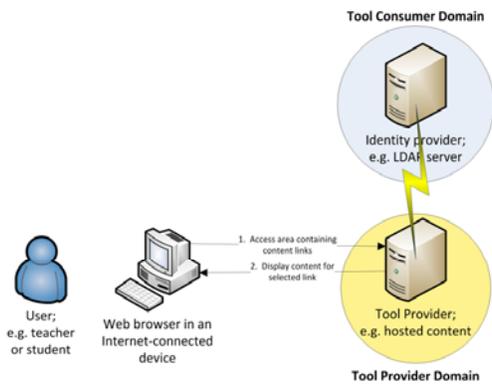
A. Accessing Content via LTI

Tool Consumer Domain

Identity provider;
e.g. LDAP server

1. Access course area containing content links
2. Click link to required content item

User;
e.g. teacher
or student

Web browser in an
Internet-connected
device

Tool Consumer;
e.g. LMS or Portal

3. LTI launch request
to content provider

4. Display content to user

Tool Provider;
e.g. hosted content

Tool Provider Domain

Notes on Steps
1. User provides their LDAP credentials to access Tool Consumer
2. Access to the link for a content item signifies the user is authorized
3. LTI launch request passes resource ID, user ID, user name, role
4. Tool Provider establishes a session to allow the user to interact with the content item

Comment
a. If a content item is pre-provisioned within the Tool Consumer (e.g. via a Common Cartridge) a custom parameter providing a GUID for the resource could be included in the launch request to allow the Tool Consumer to know which resource the link is to be associated with

System Requirements to Support Scenario A

System REQUIREMENTS	Meets	Does Not Meet	VENDOR RESPONSE – Please describe
1. Content must be fully accessible through a web browser, and available 24/7 outside of regularly-scheduled maintenance and/or update windows			
2. The districts Enterprise Directory System (Active Directory or similar) will serve as the authentication source for the districts LTI Tool Consumer (LMS or Portal). Authentication to content is handled via LTI (key and secret) to provide direct object access.			
3. Content Provider must conform to and deliver access to content via IMS Global Learning Tools Interoperability v1.1 (or higher) standard.			
4. Content Provider must provide Thin Common Cartridge v1.2 (or higher) export in the format for provisioning of LTI links provided in attachment A to enable searching of learning objects.			
5. Metadata provided in Common Cartridge must map to a minimum the following user types: Admin, Teacher, and Student. Additional user mapping and roles such as District Admin, Principal, Curriculum Admin, and Parent is preferred.			
6. Content must be accessible via mobile device browsers including iOS and Android.			

Scenario B: Accessing Content Through LDAP

B. Accessing Content via LDAP

Tool Consumer Domain

Identity provider;
e.g. LDAP server

User;
e.g. teacher
or student

Web browser in an
Internet-connected
device

1. Access area containing
content links

2. Display content for
selected link

Tool Provider;
e.g. hosted content

Tool Provider Domain

Notes on Steps
1. User provides their LDAP credentials to access Tool Provider which must be trusted by their identity provider
2. Access to LDAP signifies the user is authorized to access a content item

Comment
a. The Tool Provider will have access to attributes for users from the LDAP server

System Requirements to Support Scenario B

| System REQUIREMENTS	Meets	Does Not Meet	VENDOR RESPONSE – Please describe
1. Content must be fully accessible through a web browser, and available 24/7 outside of regularly-scheduled maintenance and/or update windows			
2. The districts Enterprise Directory System (Active Directory or similar) will serve as the sole source for vendor authentication. Single Sign On (SSO) to the vendor platform may be accomplished by using an accepted industry standard for authentication, such as LTI, LDAP, OAuth, or SAML.			

3. District roster information must be consumed in an automated fashion supporting roster updates at a minimum of a nightly basis. LIS OneRoster™ is the preferred method, however other secure automated methods may be acceptable.			
4. The system must support a minimum of the following user types: Admin, Teacher, and Student. Additional user flexibility and roles such as District Admin, Principal, Curriculum Admin, and Parent is preferred.			
5. Content must be accessible via mobile device browsers including iOS and Android.			
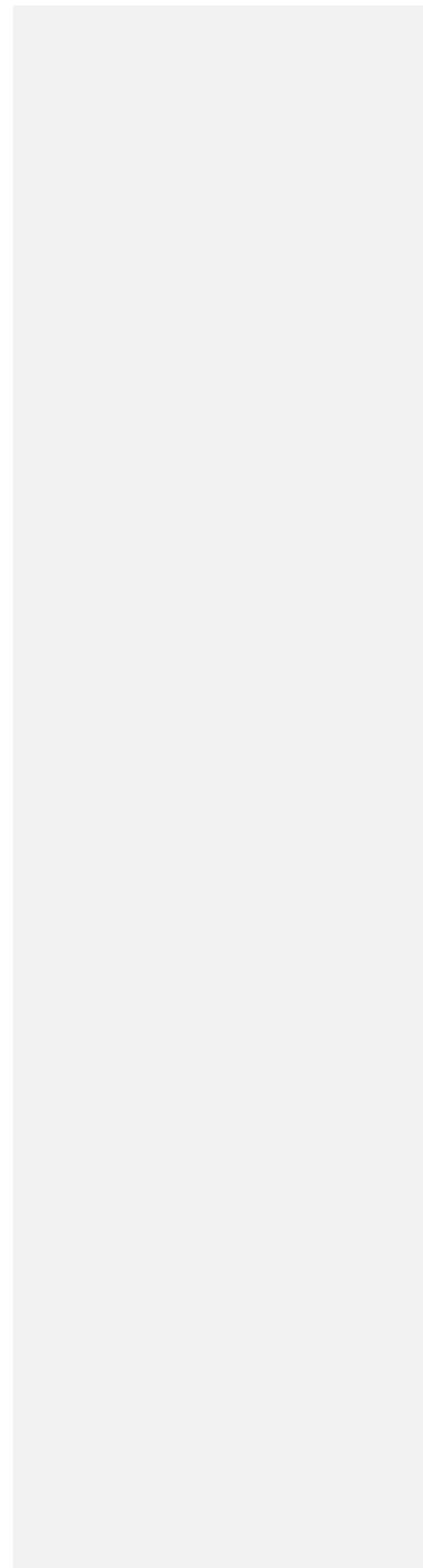
- ATTACHMENT A -

IMS GLOBAL COMMON CARTRIDGE METADATA DESCRIBING LTI LINKS TO CONTENT

*These are fields which will need to be mapped to the IMS Global Common Cartridge v1.3 standard.
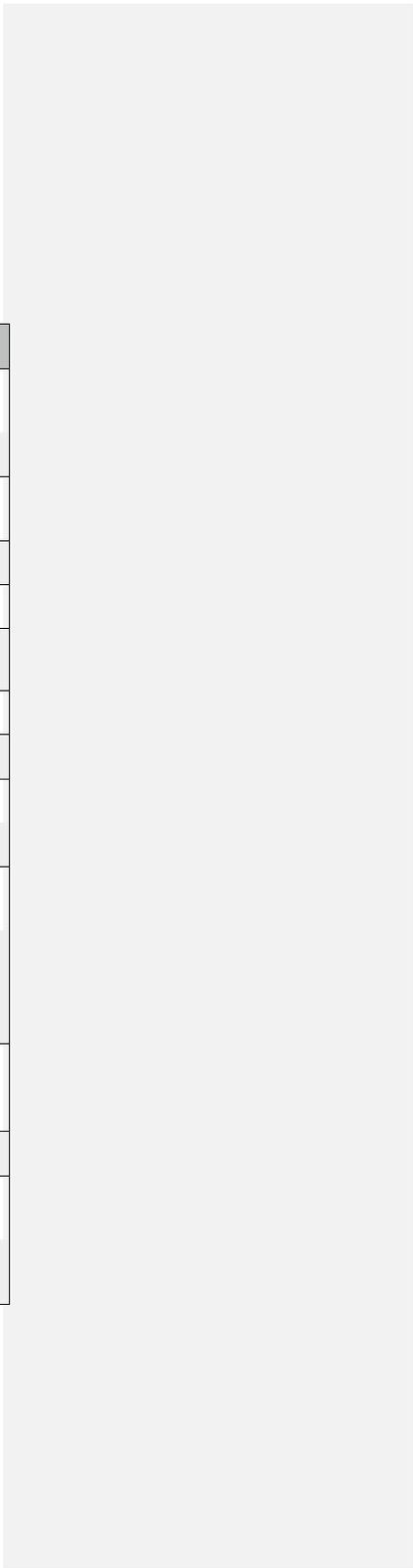
Detailed Description of Fields

GUID

This field is the globally unique identifier of the object from the originator. This will be used to determine if the object already exists in the system in order to avoid duplicates. It will allow the owner of the object to update the metadata or URL when necessary. Systems can also allow direct access to the object within their system by allowing the field to be searched.

LTI URL

This field is the IMS Global Learning Tools Interoperability launch URL to access the tool within the tool provider. It contains either the direct URL to the tool or the authorization service of LTI while the actual tool or resource is at the Resource URL location.

Resource URL

This field is used as a parameter with LTI. It contains the redirect URL that the LTI tool provider requires to access the tool. The LTI URL authorizes and sets up the tool session while the resource URL accesses the specific tool or resource within the tool provider.

Title

This field contains the metadata title of the object.

Description

This field contains the metadata description of the object.

Keywords

This field contains the single words separated by spaces related to the object. This helps organize the object within the system for easier searching and identification.

From Grade

This field contains the lowest grade level that should have access to the object. Any grade level that is lower than this value shall be denied access to the object and it may not even be visible to the user. The grade levels are pre-kindergarten or preschool, kindergarten, 1st grade, 2nd grade, … 12th grade, adult. Adult represents an object that is post High School. The values can be { p, k, 1, 2, 3, 4, 5, 6 ,7, 8, 9, 10, 11, 12, a }

To Grade

This field contains the highest grade level that should have access to the object. Any grade level that is higher than this value shall be denied access to the object and it may not even be visible to the user. The grade levels are pre-kindergarten or preschool, kindergarten, 1st grade, 2nd grade, … 12th grade, adult. Adult represents an object that is post High School. The values can be { p, k, 1, 2, 3, 4, 5, 6 ,7, 8, 9, 10, 11, 12, a }

Copyright

This field contains the year in which the object was created. It represents when the copyright of the object was first introduced.

ISBN

This field contains the ISBN (International Standard Book Number) of the object. This allows quick access to the object during a search.

Type

This field contains a descriptor string of what the object is. This is a simpler form of the MIME type (Multipurpose Internet Email Extensions) of an object. The field is used to categorize the object for easier searching and organization. The values can be { video, audio, image, interactive, game, weblink, ebook }.

AccessPermission

This field contains the permission level needed to access the object. Any user type below the threshold should be denied access to the object and may not be visible to the user. The values can be { parent, student, teacher, school admin, principal, curriculum admin, admin }.

UseType

This field contains the use type of the object. It allows the object to be organized based on the purpose of the object. For example, if the object was a LTI link to resource for homework purposes, it would be set to "assignment". That means the object would be available to a student during an assignment. The values can be { primary, secondary, teacher, assessment, question, concept, assignment }. Primary: within a lesson it would be part of the primary lesson. Secondary: within a lesson it would be a secondary object and not necessarily used, and isn't the main focus of the lesson. Teacher: within a lesson it would be viewable only to a teacher. Assessment: within a lesson it would be an object that would aid in the assessment. Question: within a lesson it would be a reference or the main part of a specific question. Concept: within a lesson it would be part of the concept review. Assignment: within a lesson it would be part of the assignment.

Visibility

This field pertains to the visibility of the object. On initial load, who has the ability to see it. The values can be { private, shared, public }. Private: Only the person who imported the object has the right to view the object. Shared: Users within a department or school can view it. Public: Everyone in the district can view it.

Thumbnail

This field contains the URL to the location of a thumbnail of the object. This would be used in previewing the object while searching or viewing the object. Since the object is a URL and the tool provider may change the object at any time, the thumbnail would be located on the tool provider's servers. Updated when the object is updated and accessible without an LTI launch.

curriculumStandardsMetadata

This field (set of fields) contains each state standard or common core standard for the object.

These are custom parameters with specified names to represent a best practice when launching content using the IMS Global Learning Tools Interoperability standard.

Field Name	Field Format	Sample	LTI 1.1
user_id	string	jsmith	Yes
lis_person_name_given	string	John	Yes
lis_person_name_family	string	Smith	Yes
lis_person_contact_email_primary	string	jsmith@school.edu	Yes
custom_resource_url	string	https://www.sample.com/resource?id=JY_FL14E_GGH_G03U01L01D5S00_0038	*
custom_guid	string	JY_FL14E_GGH_G03U01L01D5S00_0038	*
roles	{ teacher, student }	teacher	Yes
custom_ldap_dn	string	CN=jsmith,OU=students,DC=school,DC=edu	*
custom_ldap_server	string	ldap.school.edu	*

Detail Description of Fields

user_id

This field is the user ID agreed upon between the LTI provider and the LTI consumer. The LDAP common name is the recommended field.

lis_person_name_given

This field contains the given name of the user (first name).

lis_person_name_family

This field contains the family name of the user (last name).

lis_person_contact_email_primary

This field contains the email address of the user.

custom_resource_url

This field contains the final location of the resource. The LTI launch URL will handle the authentication of the user. Once authorized, the tool provider can then redirect the user to the final location.

custom_guid

This field is the globally unique identifier of the object from the originator. It allows the tool provider the ID of the object requested.

roles

This field contains the list of roles the user requesting access to the tool has. This field is defined by the IMS Global LTI specification.

custom_ldap_dn

This field contains the LDAP DN of the user (Distinguished Name). It is the unique ID within the LDAP tree associated to the user. It is passed to the tool provider to allow the provider to have access to the exact user within LDAP the launch represents. Since the user ID field only contains the common name, it may have a duplicate in the LDAP tree while the DN contains the complete path to the user.

custom_ldap_server

This field contains the LDAP server where the user DN resides. This allows the tool provider the knowledge of which LDAP server to check against for this launch. This is provided since some providers may have several customers with several LDAP servers and allows quick access to which LDAP server provided the DN.

Technical Requirements

In addition to the functional requirements, the vendor's solution shall provide users with a wide variety of readily available and user-friendly interfaces to access the system, as well as provide an environment that allows for reliable and timely use of the content. In addition, the vendor's solution will integrate with third-party materials and software. Conforming to IMS standards the vendor must maintain the highest levels of security in order to preserve and protect the confidentiality of data. The vendor is expected to employ leading edge and proven security solutions and protocols in order to fulfill this goal.

System and Integration/Extensibility REQUIREMENTS	Meets	Does Not Meet	VENDOR RESPONSE – Please describe
1. Support popular web browsers (Internet Explorer, Firefox, Safari, Chrome). Vendor will specify which versions of these browsers the vendor's solution supports.			
2. Support Windows, Chrome, and Macintosh operating systems. Vendor will specify which versions of these operating systems the vendor's solution supports.			
3. Support scalable enterprise configurations such as load balancing and clustering of servers and downloading of data based and content based delivery for school district with one to one or BYOD programs.			

Notes:

Several references are made to the LOR (Learning Object Repository), LMS (Learning Management System), and Portal. This verbiage may differ from district to district, but they all refer to the district learning platform that is the primary vehicle for aggregating and presenting instructional resources.

References are made to LDAP but the intent is to integrate into the district directory services which may include ADFS, NMAS, eDirectory, or other industry standard directory services. Districts can no longer dedicate resources to customize export files that conform to individual publisher schema. The ability to use directory services prevents student and teachers from having multiple logins for multiple providers, allowing for the seamless access to resources and maximizing instructional time.