



## **OSID V3 Specifications repository package**

Version Draft 3

This specifications represent a draft for OSID V3 interface definitions. These definitions may change at any time.

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Package Description	osid.repository package
Interfaces	<code>osid.repository.RepositoryProfile</code> <code>osid.repository.RepositoryManager</code> <code>osid.repository.RepositoryProxyManager</code> <code>osid.repository.AssetLookupSession</code> <code>osid.repository.AssetSearchSession</code> <code>osid.repository.AssetAdminSession</code> <code>osid.repository.AssetNotificationSession</code> <code>osid.repository.AssetRepositorySession</code> <code>osid.repository.AssetRepositoryAssignmentSession</code> <code>osid.repository.AssetSubjectSession</code> <code>osid.repository.AssetSubjectAssignmentSession</code> <code>osid.repository.AssetAlternativeSession</code> <code>osid.repository.AssetAlternativeAssignmentSession</code> <code>osid.repository.AssetCreditSession</code> <code>osid.repository.AssetCreditAssignmentSession</code> <code>osid.repository.AssetTemporalSession</code> <code>osid.repository.AssetTemporalAssignmentSession</code> <code>osid.repository.AssetSpatialSession</code> <code>osid.repository.AssetSpatialAssignmentSession</code> <code>osid.repository.AssetCompositionSession</code> <code>osid.repository.AssetCompositionAssignmentSession</code> <code>osid.repository.SubjectLookupSession</code> <code>osid.repository.SubjectSearchSession</code> <code>osid.repository.SubjectAdminSession</code> <code>osid.repository.SubjectNotificationSession</code> <code>osid.repository.SubjectHierarchySession</code> <code>osid.repository.SubjectHierarchyDesign Session</code> <code>osid.repository.SubjectRepositorySession</code> <code>osid.repository.SubjectRepositoryAssignmentSession</code> <code>osid.repository.RepositoryLookupSession</code> <code>osid.repository.RepositorySearchSession</code> <code>osid.repository.RepositoryAdminSession</code> <code>osid.repository.RepositoryNotificationSession</code> <code>osid.repository.RepositoryHierarchySession</code> <code>osid.repository.RepositoryHierarchyDesignSession</code> <code>osid.repository.CompositionLookupSession</code> <code>osid.repository.CompositionSearchSession</code> <code>osid.repository.CompositionAdminSession</code> <code>osid.repository.CompositionNotificationSession</code> <code>osid.repository.CompositionHierarchySession</code> <code>osid.repository.CompositionHierarchyDesignSession</code> <code>osid.repository.CompositionRepositorySession</code> <code>osid.repository.CompositionRepositoryAssignmentSession</code> <code>osid.repository.CompositionSubjectSession</code> <code>osid.repository.CompositionSubjectAssignmentSession</code>

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osid.repository.Asset
osid.repository.AssetRecord
osid.repository.AssetQuery
osid.repository.AssetQueryRecord
osid.repository.AssetForm
osid.repository.AssetFormRecord
osid.repository.AssetSearchOrder
osid.repository.AssetSearchOrderRecord
osid.repository.AssetSearch
osid.repository.AssetSearchRecord
osid.repository.AssetSearchResults
osid.repository.AssetSearchResultsRecord
osid.repository.AssetReceiver
osid.repository.AssetList
osid.repository.AssetContent
osid.repository.AssetContentRecord
osid.repository.AssetContentQuery
osid.repository.AssetContentQueryRecord
osid.repository.AssetContentForm
osid.repository.AssetContentFormRecord
osid.repository.AssetContentList
osid.repository.AssetCredit
osid.repository.AssetCreditList
osid.repository.AssetAlternate
osid.repository.AssetAlternateList
osid.repository.Subject
osid.repository.SubjectRecord
osid.repository.SubjectQuery
osid.repository.SubjectQueryRecord
osid.repository.SubjectForm
osid.repository.SubjectFormRecord
osid.repository.SubjectSearchOrder
osid.repository.SubjectSearchOrderRecord
osid.repository.SubjectSearch
osid.repository.SubjectSearchRecord
osid.repository.SubjectSearchResults
osid.repository.SubjectSearchResultsRecord
osid.repository.SubjectReceiver
osid.repository.SubjectList
osid.repository.Repository
osid.repository.RepositoryRecord
osid.repository.RepositoryQuery
osid.repository.RepositoryQueryRecord
osid.repository.RepositoryForm
osid.repository.RepositoryFormRecord
osid.repository.RepositorySearchOrder
osid.repository.RepositorySearchOrderRecord
osid.repository.RepositorySearch
osid.repository.RepositorySearchRecord
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osid.repository.RepositorySearchResults  
osid.repository.RepositorySearchResultsRecord  
osid.repository.RepositoryReceiver  
osid.repository.RepositoryList  
osid.repository.Composition  
osid.repository.CompositionRecord  
osid.repository.CompositionQuery  
osid.repository.CompositionQueryRecord  
osid.repository.CompositionForm  
osid.repository.CompositionFormRecord  
osid.repository.CompositionSearchOrder  
osid.repository.CompositionSearchOrderRecord  
osid.repository.CompositionSearch  
osid.repository.CompositionSearchRecord  
osid.repository.CompositionSearchResults  
osid.repository.CompositionSearchResultsRecord  
osid.repository.CompositionReceiver  
osid.repository.CompositionList

Package	osid.repository
Title	Repository Open Service Interface Definitions
Version	3.0.0
Description	<p>The Repository OSID provides the service of finding and managing digital assets. There are many facets to this service. An Asset represents a unit of content, whether it be an image, a video, an application document or some text. The Asset defines a core set of definitions applicable to digital content, such as copyright and publisher, and allows for a type specification to be appended as with other OsidObjects.</p> <p>Asset content, such as a document, is defined such that there may be multiple formats contained with the same asset. A document may be accessible in both PDF and MS Word, but is the same document, for example. An image may have both a large size and a thumbnail version. Generally, an asset contains more than one version of content when it is left to the application to decide which is most appropriate.</p> <p>The Asset Type may define methods in common throughout the content variations. An example asset is one whose content Types are "Quicktime" and "MPEG", but the Asset Type is "movie" and defines methods that describe the move aside from the formats. This "double" Type hierarchy stemming from the asset requires more care in defining interfaces. Assets also have "credits" which define the authors, editors, creators, performers, producers or any other "role", identified with a role Type, with the production of the asset. These are managed externally to the asset through another OsidSession.</p> <p>Through additional optional OsidSessions, the Asset can be "extended" to offer temporal information. An asset may pertain to a date, a period of time, or a series of dates and periods. This mechanism is to offer the ability to search for assets pertaining to a desired date range without requiring understanding of a Type.</p> <p>Similarly, the Asset can also map to spatial information. A photograph may be "geotagged" with the GPS coordinates where it was taken, a conical shape in stellar coordinates could be described for an astronimocal image, or there may be a desire to map a historical book to the spatial coordinates of Boston and Philadelphia. Unlike temporal mappings, the definition of the spatial coordinate is left to a spatial Type to define. The Repository OSID simply manages spatial mappings to the Asset.</p> <p>Assets may also relate to Subjects. The Subject provides the ability to normalize information related to subject matter across the Assets to simplify management and provide a more robust searching mechanism. For example, with a photograph of the Empire State Building, one may wish to describe that it was designed by Shreve, Lamb and Harmon and completed in 1931. The information about the building itself can be described using a Subject and related to the photograph, and any other photograph that captures the building. The Asset Type for the photograph may simply be "photograph" and doesn't attempt to describe a building, while the AssetContent Type is "image/jpeg".</p> <p>An application performing a search for Empire State Building can execute the search over the Subjects, and once the user has narrowed the subject area, then the related Assets can be retrieved, and from there negotiate the content.</p> <p>A provider wishing to construct a simple inventory database of buildings in New York may decide to do so using the Resource OSID. The Resource Type may describe the construction dates, height, location, style and architects of buildings. The Type may also include a means of getting a reference image using the Asset interface. Since there is no explicit relationship between Subject and Resource, the Resource can be adapted to the Subject interface (mapping a buildingResourceType to a buildingSubjectType) to use the same data for Subject to Asset mappings and searching.</p>

Asset compositions can be created using the Composition interface. A Composition is a group of Assets and compositions may be structured into a hierarchy for the purpose of "building" larger content. A content management system may make use of this interface to construct a web page. The Composition hierarchy may map into an XHTML structure and each Asset represent an image or a link in the document. However, the produced web page at a given URL may be represented by another single Asset that whose content has both the URL and the XHTML stream.

Another example is an IMS Common Cartridge. The Composition may be used to produce the zip file cartridge, but consumers may access the zip file via an Asset.

Compositions also relate to Subjects.

Finally, Assets, Subjects, and Compositions may be categorized into Repository objects. A Repository is a catalog-like interface to help organize assets and subject matter. Repositories may be organized into hierarchies for organization or federation purposes.

This number of service aspects to this Repository OSID produce a large number of definitions. It is recommended to use the RepositoryManager definition to select a single OsidSession of interest, and work that definition through its dependencies before tackling another aspect.

<b>Interface</b>	<b>osid.repository.RepositoryProfile</b>	
<b>Implements</b>	<a href="#">osid.OsidProfile</a>	
<b>Description</b>	The repository profile describes interoperability among repository services.	
<b>Method</b>	<b>supportsVisibleFederation</b>	
<b>Description</b>	Tests if federation is visible.	
<b>Return</b>	<a href="#">boolean</a>	true if visible federation is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetLookup</b>	
<b>Description</b>	Tests if asset lookup is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset lookup is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetSearch</b>	
<b>Description</b>	Tests if asset search is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset search is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetAdmin</b>	
<b>Description</b>	Tests if asset administration is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset administration is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetNotification</b>	
<b>Description</b>	Tests if asset notification is supported. A repository may send messages when assets are created, modified, or deleted.	
<b>Return</b>	<a href="#">boolean</a>	true if asset notification is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetRepository</b>	
<b>Description</b>	Tests if retrieving mappings of assets and repositories is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset repository mapping retrieval is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetRepositoryAssignment</b>	
<b>Description</b>	Tests if managing mappings of assets and repositories is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset repository assignment is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetSubjects</b>	
<b>Description</b>	Tests if retrieving asset subject mappings is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset subject mappings is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetSubjectAssignment</b>	
<b>Description</b>	Tests if mapping assets to subjects is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if mapping assets to subjects is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsAssetAlternative</b>	
<b>Description</b>	Tests if retrieving asset alternatives for accessibility is supported.	
<b>Return</b>	<a href="#">boolean</a>	true if asset alternatives is supported, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>supportsAssetAlternativeAssignment</b>	
Description	Tests if assigning asset alternatives for accessibility is supported.	
Return	boolean	true if assigning asset alternatives is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetCredit</b>	
Description	Tests if assets support contain credits.	
Return	boolean	true if asset credits are supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetCreditAssignment</b>	
Description	Tests if assigning asset credits is supported.	
Return	boolean	true if assigning asset credits is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsTemporalAssets</b>	
Description	Tests if assets support temporal coverage.	
Return	boolean	true if temporal coverage supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetTemporalAssignment</b>	
Description	Tests if assigning temporal coverage to an asset is supported.	
Return	boolean	true if assigning temporal coverage to an asset is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsSpatialAssets</b>	
Description	Tests if assets support spatial coverage.	
Return	boolean	true if spatial coverage supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetSpatialAssignment</b>	
Description	Tests if assigning spatial coverage to an asset is supported.	
Return	boolean	true if assigning spatial coverage to an asset is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetComposition</b>	
Description	Tests if assets are included in compositions.	
Return	boolean	true if asset composition supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsAssetCompositionAssignment</b>	
Description	Tests if creating and managing asset compositions is supported.	
Return	boolean	true if designing asset compositions is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsSubjectLookup</b>	
Description	Tests if subject lookup is supported.	
Return	boolean	true if subject lookup is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsSubjectSearch</b>	
Description	Tests if subject search is supported.	
Return	boolean	true if subject search is supported, false otherwise
Compliance	mandatory	This method must be implemented.

<b>Method</b>	<b>supportsSubjectAdmin</b>	
<b>Description</b>	Tests if subject administration is supported.	
<b>Return</b>	boolean	true if subject administration is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectNotification</b>	
<b>Description</b>	Tests if subject notification is supported.	
<b>Return</b>	boolean	true if subject notification is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectHierarchy</b>	
<b>Description</b>	Tests if a subject hierarchy traversal is supported.	
<b>Return</b>	boolean	true if a subject hierarchy traversal is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectHierarchyDesign</b>	
<b>Description</b>	Tests if a subject hierarchy design is supported.	
<b>Return</b>	boolean	true if a subject hierarchy design is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectHierarchySequencing</b>	
<b>Description</b>	Tests if the subject hierarchy supports node sequencing.	
<b>Return</b>	boolean	true if subject hierarchy node sequencing is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectRepository</b>	
<b>Description</b>	Tests if retrieval of subject to repository mappings is supported.	
<b>Return</b>	boolean	true if subject to repository mapping is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectRepositoryAssignment</b>	
<b>Description</b>	Tests if assigning subjects to repository mappings is supported.	
<b>Return</b>	boolean	true if subject to repository assignment is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsRepositoryLookup</b>	
<b>Description</b>	Tests if repository lookup is supported.	
<b>Return</b>	boolean	true if repository lookup is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsRepositorySearch</b>	
<b>Description</b>	Tests if repository search is supported.	
<b>Return</b>	boolean	true if repository search is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsRepositoryAdmin</b>	
<b>Description</b>	Tests if repository administration is supported.	
<b>Return</b>	boolean	true if repository administration is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.

Method	<b>supportsRepositoryNotification</b>	
Description	Tests if repository notification is supported. Messages may be sent when Repository objects are created, deleted or updated. Notifications for assets within repositories are sent via the asset notification session.	
Return	boolean	true if repository notification is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsRepositoryHierarchy</b>	
Description	Tests if a repository hierarchy traversal is supported.	
Return	boolean	true if a repository hierarchy traversal is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsRepositoryHierarchyDesign</b>	
Description	Tests if a repository hierarchy design is supported.	
Return	boolean	true if a repository hierarchy design is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsRepositoryHierarchySequencing</b>	
Description	Tests if the repository hierarchy supports node sequencing.	
Return	boolean	true if repository hierarchy node sequencing is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionLookup</b>	
Description	Tests if composition lookup is supported.	
Return	boolean	true if composition lookup is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionSearch</b>	
Description	Tests if composition search is supported.	
Return	boolean	true if composition search is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionAdmin</b>	
Description	Tests if composition administration is supported.	
Return	boolean	true if composition administration is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionNotification</b>	
Description	Tests if composition notification is supported.	
Return	boolean	true if composition notification is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionHierarchy</b>	
Description	Tests if a composition hierarchy is supported.	
Return	boolean	true if composition hierarchy is supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	<b>supportsCompositionHierarchyDesign</b>	
Description	Tests if composition hierarchy design is supported.	
Return	boolean	true if composition hierarchy design is supported, false otherwise
Compliance	mandatory	This method must be implemented.

Method	<b>supportsCompositionHierarchySequencing</b>	
<b>Description</b>	Tests if the composition hierarchy supports node sequencing.	
<b>Return</b>	boolean	true if composition hierarchy node sequencing is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsCompositionRepository</b>	
<b>Description</b>	Tests if retrieval of composition to repository mappings is supported.	
<b>Return</b>	boolean	true if composition to repository mapping is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsCompositionRepositoryAssignment</b>	
<b>Description</b>	Tests if assigning composition to repository mappings is supported.	
<b>Return</b>	boolean	true if composition to repository assignment is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsCompositionSubjects</b>	
<b>Description</b>	Tests if retrieving composition subject mappings is supported.	
<b>Return</b>	boolean	true if composition subject mappings is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsCompositionSubjectAssignment</b>	
<b>Description</b>	Tests if mapping assets to subjects is supported.	
<b>Return</b>	boolean	true if composition assets to subjects is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getAssetRecordTypes</b>	
<b>Description</b>	Gets all the asset interface types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported asset record types
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsAssetRecordType</b>	
<b>Description</b>	Tests if a given asset interface type is supported.	
<b>Parameters</b>	osid.type.Type	assetRecordType
<b>Return</b>	boolean	true if the asset record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getAssetSearchRecordTypes</b>	
<b>Description</b>	Gets all the asset search record types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported asset search record types
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>supportsAssetSearchRecordType</b>	
<b>Description</b>	Tests if a given asset search record type is supported.	
<b>Parameters</b>	osid.type.Type	assetSearchRecordType
<b>Return</b>	boolean	true if the asset search record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
Method	<b>getAssetContentRecordTypes</b>	
<b>Description</b>	Gets all the asset content record types supported.	
<b>Return</b>	osid.type.TypeList	the list of supported asset content record types
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Method</b>	<b>supportsAssetContentRecordType</b>	
<b>Description</b>	Tests if a given asset content record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetContentRecordType the asset content record type
<b>Return</b>	boolean	true if the asset content record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getRepositoryRecordTypes</b>	
<b>Description</b>	Gets all the repository record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported repository record types
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsRepositoryRecordType</b>	
<b>Description</b>	Tests if a given repository record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryRecordType the repository record type
<b>Return</b>	boolean	true if the repository record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getRepositorySearchRecordTypes</b>	
<b>Description</b>	Gets all the repository search record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported repository search record types
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsRepositorySearchRecordType</b>	
<b>Description</b>	Tests if a given repository search record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositorySearchRecordType the repository search type
<b>Return</b>	boolean	true if the repository search record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getSubjectRecordTypes</b>	
<b>Description</b>	Gets all the subject record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported subject record types
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectRecordType</b>	
<b>Description</b>	Tests if a given subject record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectRecordType the subject record type
<b>Return</b>	boolean	true if the subject record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getSubjectSearchRecordTypes</b>	
<b>Description</b>	Gets all the subject search record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported subject search record types
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsSubjectSearchRecordType</b>	
<b>Description</b>	Tests if a given subject search record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectSearchRecordType the subject serach type
<b>Return</b>	boolean	true if the subject search record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getCompositionRecordTypes</b>	
<b>Description</b>	Gets all the composition record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported composition record types
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Method</b>	<b>supportsCompositionRecordType</b>	
<b>Description</b>	Tests if a given composition record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionRecordType the composition record type
<b>Return</b>	boolean	true if the composition record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getCompositionSearchRecordTypes</b>	
<b>Description</b>	Gets all the composition search record types supported.	
<b>Return</b>	<a href="#">osid.type.TypeList</a>	the list of supported composition search record types
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>supportsCompositionSearchRecordType</b>	
<b>Description</b>	Tests if a given composition search record type is supported.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionSearchRecordType the composition serach type
<b>Return</b>	boolean	true if the composition search record type is supported, false otherwise
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryManager</b>
<b>Implements</b>	<a href="#">osid.OsidManager</a> <a href="#">osid.repository.RepositoryProfile</a>
<b>Description</b>	<p>The repository manager provides access to asset lookup and creation session and provides interoperability tests for various aspects of this service. The sessions included in this manager are:</p> <ul style="list-style-type: none"> <li>• AssetLookupSession: a session to retrieve assets</li> <li>• AssetSearchSession: a session to search for assets</li> <li>• AssetAdminSession: a session to create and delete assets</li> <li>• AssetNotificationSession: a session to receive notifications pertaining to asset changes</li> <li>• AssetRepositorySession: a session to look up asset to repository mappings</li> <li>• AssetRepositoryAssignmentSession: a session to manage asset to repository mappings</li> <li>• AssetCreditSession: a session to look up asset credits</li> <li>• AssetCreditAssignmentSession: a session to manage asset credits</li> <li>• AssetTemporalSession: a session to access the temporal coverage of an asset</li> <li>• AssetTemporalAssignmentSession: a session to manage the temporal coverage of an asset</li> <li>• AssetSpatialSession: a session to access the spatial coverage of an asset</li> <li>• AssetSpatialAssignmentSession: a session to manage the spatial coverage of an asset</li>   <li>• SubjectLookupSession: a session to retrieve subjects</li> <li>• SubjectSearchSession: a session to search for subjects</li> <li>• SubjectAdminSession: a session to create and delete subjects</li> <li>• SubjectNotificationSession: a session to receive notifications pertaining to subjects changes</li> <li>• SubjectHierarchySession: a session to traverse a hierarchy of subjects</li> <li>• SubjectHierarchyDesignSession: a session to manage a subject hierarchy</li> <li>• SubjectRepositorySession: a session to look up subject to repository mappings</li> <li>• SubjectRepositoryAssignmentSession: a session to manage subject to repository mappings</li>   <li>• RepositoryLookupSession: a session to retrieve repositories</li> <li>• RepositorySearchSession: a session to search for repositories</li> <li>• RepositoryAdminSession: a session to create, update and delete repositories</li> <li>• RepositoryNotificationSession: a session to receive notifications pertaining to changes in repositories</li> <li>• RepositoryHierarchySession: a session to traverse repository hierarchies</li> <li>• RepositoryHierarchyDesignSession: a session to manage repository hierarchies</li> <li>• CompositionLookupSession: a session to retrieve compositions</li> <li>• CompositionSearchSession: a session to search for compositions</li> <li>• CompositionAdminSession: a session to create, update and delete compositions</li> <li>• CompositionNotificationSession: a session to receive notifications pertaining to changes in compositions</li> <li>• CompositionHierarchySession: a session to traverse composition hierarchies</li> <li>• CompositionHierarchyDesignSession: a session to manage composition hierarchies</li> </ul> <p>In addition to these sessions, repository leverages other service definitions to fulfill its service.</p> <ul style="list-style-type: none"> <li>• ResourceManager: provides the interfaces to find, create and modify resources known to this service</li> </ul>

Method	<b>getAssetLookupSession</b>	
<b>Description</b>	Gets the OsidSession associated with the asset lookup service.	
<b>Return</b>	<a href="#">osid.repository.AssetLookupSession</a>	the new AssetLookupSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetLookup() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetLookup() is true.
Method	<b>getAssetLookupSessionForRepository</b>	
<b>Description</b>	Gets the OsidSession associated with the asset lookup service for the given repository.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   repositoryId	the Id of the repository
<b>Return</b>	<a href="#">osid.repository.AssetLookupSession</a>	the new AssetLookupSession
<b>Errors</b>	<a href="#">NOT_FOUND</a>	repositoryId not found
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetLookup() or supportsVisibleFederation() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetLookup() and supportsVisibleFederation() are true.
Method	<b>getAssetSearchSession</b>	
<b>Description</b>	Gets an asset search session.	
<b>Return</b>	<a href="#">osid.repository.AssetSearchSession</a>	an AssetSearchSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetSearch() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetSearch() is true.
Method	<b>getAssetSearchSessionForRepository</b>	
<b>Description</b>	Gets an asset search session for the given repository.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>   repositoryId	the Id of the repository
<b>Return</b>	<a href="#">osid.repository.AssetSearchSession</a>	an AssetSearchSession
<b>Errors</b>	<a href="#">NOT_FOUND</a>	repositoryId not found
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetSearch() or supportsVisibleFederation() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetSearch() and supportsVisibleFederation() are true.
Method	<b>getAssetAdminSession</b>	
<b>Description</b>	Gets an asset administration session for creating, updating and deleting assets.	
<b>Return</b>	<a href="#">osid.repository.AssetAdminSession</a>	an AssetAdminSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetAdmin() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetAdmin() is true.

Method	getAssetAdminSessionForRepository				
<b>Description</b>	Gets an asset administration session for the given repository.				
<b>Parameters</b>	osid.id.Id	repositoryId	the Id of the repository		
<b>Return</b>	osid.repository.AssetAdminSession				
<b>Errors</b>	NOT_FOUND	repositoryId not found			
	NULL_ARGUMENT	repositoryId is null			
	OPERATION_FAILED	unable to complete request			
	UNIMPLEMENTED	supportsAssetAdmin() or supportsVisibleFederation() is false			
<b>Compliance</b>	optional				
This method must be implemented if supportsAssetAdmin() and supportsVisibleFederation() are true.					
Method	getAssetNotificationSession				
<b>Description</b>	Gets the notification session for notifications pertaining to asset changes.				
<b>Parameters</b>	osid.repository.AssetReceiver	receiver	the notification callback		
<b>Return</b>	osid.repository.AssetNotificationSession				
<b>Errors</b>	NULL_ARGUMENT	receiver is null			
	OPERATION_FAILED	unable to complete request			
	UNIMPLEMENTED	supportsAssetNotification() is false			
<b>Compliance</b>	optional				
This method must be implemented if supportsAssetNotification() is true.					
Method	getAssetNotificationSessionForRepository				
<b>Description</b>	Gets the asset notification session for the given repository.				
<b>Parameters</b>	osid.repository.AssetReceiver	receiver	the notification callback		
	osid.id.Id	repositoryId	the Id of the repository		
<b>Return</b>	osid.repository.AssetNotificationSession				
<b>Errors</b>	NOT_FOUND	repositoryId not found			
	NULL_ARGUMENT	receiver or repositoryId is null			
	OPERATION_FAILED	unable to complete request			
	UNIMPLEMENTED	supportsAssetNotification() or supportsVisibleFederation() is false			
<b>Compliance</b>	optional				
This method must be implemented if supportsAssetNotification() and supportsVisibleFederation() are true.					
Method	getAssetRepositorySession				
<b>Description</b>	Gets the session for retrieving asset to repository mappings.				
<b>Return</b>	osid.repository.AssetRepositorySession				
<b>Errors</b>	OPERATION_FAILED	unable to complete request			
	UNIMPLEMENTED	supportsAssetRepository() is false			
<b>Compliance</b>	optional				
This method must be implemented if supportsAssetRepository() is true.					
Method	getAssetRepositoryAssignmentSession				
<b>Description</b>	Gets the session for assigning asset to repository mappings.				
<b>Return</b>	osid.repository.AssetRepositoryAssignmentSession				
<b>Errors</b>	OPERATION_FAILED	unable to complete request			
	UNIMPLEMENTED	supportsAssetRepositoryAssignment() is false			
<b>Compliance</b>	optional				
This method must be implemented if supportsAssetRepositoryAssignment() is true.					

Method	<b>getAssetSubjectSession</b>	
<b>Description</b>	Gets the session for retrieving asset to subject mappings.	
<b>Return</b>	<a href="#">osid.repository.AssetSubjectSession</a>	an AssetSubjectSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetSubject() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetSubject() is true.
Method	<b>getAssetSubjectAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning asset to subject mappings.	
<b>Return</b>	<a href="#">osid.repository.AssetSubjectAssignmentSession</a>	an AssetSubjectAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetSubjectAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetSubjectAssignment() is true.
Method	<b>getAssetAlternativeSession</b>	
<b>Description</b>	Gets the session for retrieving asset alternatives.	
<b>Return</b>	<a href="#">osid.repository.AssetAlternativeSession</a>	an AssetAlternativeSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetAlternative() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetAlternative() is true.
Method	<b>getAssetAlternativeAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning asset alternatives.	
<b>Return</b>	<a href="#">osid.repository.AssetAlternativeAssignmentSession</a>	an AssetAlternativeAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetAlternativeAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetAlternativeAssignment() is true.
Method	<b>getAssetCreditSession</b>	
<b>Description</b>	Gets the session for retrieving asset credits.	
<b>Return</b>	<a href="#">osid.repository.AssetCreditSession</a>	an AssetCreditSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetCredit() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetCredit() is true.
Method	<b>getAssetCreditAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning asset credits.	
<b>Return</b>	<a href="#">osid.repository.AssetCreditAssignmentSession</a>	an AssetCreditAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetCreditAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetCreditAssignment() is true.
Method	<b>getAssetTemporalSession</b>	
<b>Description</b>	Gets the session for retrieving temporal coverage of an asset.	
<b>Return</b>	<a href="#">osid.repository.AssetTemporalSession</a>	an AssetTemporalSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsTemporalAssets() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsTemporalAssets() is true.

Method	<b>getAssetTemporalAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning temporal coverage to an asset.	
<b>Return</b>	<a href="#">osid.repository.AssetTemporalAssignmentSession</a>	an AssetTemporalAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetTemporalAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetTemporalAssignment() is true.
Method	<b>getAssetSpatialSession</b>	
<b>Description</b>	Gets the session for retrieving spatial coverage of an asset.	
<b>Return</b>	<a href="#">osid.repository.AssetSpatialSession</a>	an AssetSpatialSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsSpatialAssets() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsSpatialAssets() is true.
Method	<b>getAssetSpatialAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning spatial coverage to an asset.	
<b>Return</b>	<a href="#">osid.repository.AssetSpatialAssignmentSession</a>	an AssetSpatialAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetSpatialAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetSpatialAssignment() is true.
Method	<b>getAssetCompositionSession</b>	
<b>Description</b>	Gets the session for retrieving asset compositions.	
<b>Return</b>	<a href="#">osid.repository.AssetCompositionSession</a>	an AssetCompositionSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetComposition() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetComposition() is true.
Method	<b>getAssetCompositionAssignmentSession</b>	
<b>Description</b>	Gets the session for creating asset compositions.	
<b>Return</b>	<a href="#">osid.repository.AssetCompositionAssignmentSession</a>	an AssetCompositionAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsAssetCompositionAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsAssetCompositionAssignment() is true.
Method	<b>getSubjectLookupSession</b>	
<b>Description</b>	Gets the OsidSession associated with the subject lookup service.	
<b>Return</b>	<a href="#">osid.repository.SubjectLookupSession</a>	the new SubjectLookupSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsSubjectLookup() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsSubjectLookup() is true.

Method	getSubjectLookupSessionForRepository	
Description	Gets the OsidSession associated with the subject lookup service for the given repository.	
Parameters	osid.id.Id   repositoryId	the Id of the repository
Return	osid.repository.SubjectLookupSession	the new SubjectLookupSession
Errors	NOT_FOUND	repositoryId not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectLookup() or supportsVisibleFederation() is false
Compliance	optional	
This method must be implemented if supportsSubjectLookup() and supportsVisibleFederation() are true.		
Method	getSubjectSearchSession	
Description	Gets a subject search session.	
Return	osid.repository.SubjectSearchSession	a SubjectSearchSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectSearch() is false
Compliance	optional	
This method must be implemented if supportsSubjectSearch() is true.		
Method	getSubjectSearchSessionForRepository	
Description	Gets a subject search session for the given repository.	
Parameters	osid.id.Id   repositoryId	the Id of the repository
Return	osid.repository.SubjectSearchSession	a SubjectSearchSession
Errors	NOT_FOUND	repositoryId not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectSearch() or supportsVisibleFederation() is false
Compliance	optional	
This method must be implemented if supportsSubjectSearch() and supportsVisibleFederation() are true.		
Method	getSubjectAdminSession	
Description	Gets a subject administration session for creating, updating and deleting subjects.	
Return	osid.repository.SubjectAdminSession	a SubjectAdminSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectAdmin() is false
Compliance	optional	
This method must be implemented if supportsSubjectAdmin() is true.		
Method	getSubjectAdminSessionForRepository	
Description	Gets a subject administrative session for the given repository.	
Parameters	osid.id.Id   repositoryId	the Id of the repository
Return	osid.repository.SubjectAdminSession	a SubjectSearchSession
Errors	NOT_FOUND	repositoryId not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectAdmin() or supportsVisibleFederation() is false
Compliance	optional	
This method must be implemented if supportsSubjectAdmin() and supportsVisibleFederation() are true.		

Method	<b>getSubjectNotificationSession</b>	
<b>Description</b>	Gets the notification session for notifications pertaining to subject changes.	
<b>Parameters</b>	<code>osid.repository.SubjectReceiver</code>	receiver the notification callback
<b>Return</b>	<code>osid.repository.SubjectNotificationSession</code>	a SubjectNotificationSession
	<code>NULL_ARGUMENT</code>	receiver is null
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectNotification() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectNotification() is true.
Method	<b>getSubjectNotificationSessionForRepository</b>	
<b>Description</b>	Gets the subject notification session for the given repository.	
<b>Parameters</b>	<code>osid.repository.SubjectReceiver</code>	receiver the notification callback
	<code>osid.id.Id</code>	repositoryId the Id of the repository
<b>Return</b>	<code>osid.repository.SubjectNotificationSession</code>	a SubjectNotificationSession
	<code>NOT_FOUND</code>	repositoryId not found
	<code>NULL_ARGUMENT</code>	receiver or repositoryId is null
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectNotification() or supportsVisibleFederation() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectNotification() and supportsVisibleFederation() are true.
Method	<b>getSubjectHierarchySession</b>	
<b>Description</b>	Gets the subject hierarchy traversal session.	
<b>Return</b>	<code>osid.repository.SubjectHierarchySession</code>	a SubjectHierarchySession
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectHierarchy() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectHierarchy() is true.
Method	<b>getSubjectHierarchyDesignSession</b>	
<b>Description</b>	Gets the subject hierarchy design session.	
<b>Return</b>	<code>osid.repository.SubjectHierarchyDesignSession</code>	a SubjectHierarchyDesignSession
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectHierarchyDesign() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectHierarchyDesign() is true.
Method	<b>getSubjectRepositorySession</b>	
<b>Description</b>	Gets the session for retrieving subject to repository mappings.	
<b>Return</b>	<code>osid.repository.SubjectRepositorySession</code>	a SubjectRepositorySession
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectRepository() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectRepository() is true.
Method	<b>getSubjectRepositoryAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning subject to repository mappings.	
<b>Return</b>	<code>osid.repository.SubjectRepositoryAssignmentSession</code>	a SubjectRepositoryAssignmentSession
<b>Errors</b>	<code>OPERATION_FAILED</code>	unable to complete request
	<code>UNIMPLEMENTED</code>	supportsSubjectRepositoryAssignment() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsSubjectRepositoryAssignment() is true.

Method	<b>getRepositoryLookupSession</b>	
<b>Description</b>	Gets the repository lookup session.	
<b>Return</b>	<a href="#">osid.repository.RepositoryLookupSession</a>	a RepositoryLookupSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositoryLookup() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositoryLookup() is true.
Method	<b>getRepositorySearchSession</b>	
<b>Description</b>	Gets the repository search session.	
<b>Return</b>	<a href="#">osid.repository.RepositorySearchSession</a>	a RepositorySearchSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositorySearch() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositorySearch() is true.
Method	<b>getRepositoryAdminSession</b>	
<b>Description</b>	Gets the repository administrative session for creating, updating and deleteing repositories.	
<b>Return</b>	<a href="#">osid.repository.RepositoryAdminSession</a>	a RepositoryAdminSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositoryAdmin() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositoryAdmin() is true.
Method	<b>getRepositoryNotificationSession</b>	
<b>Description</b>	Gets the notification session for subscribing to changes to a repository.	
<b>Parameters</b>	<a href="#">osid.repository.RepositoryReceiver</a> receiver	the notification callback
<b>Return</b>	<a href="#">osid.repository.RepositoryNotificationSession</a>	a RepositoryNotificationSession
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	receiver is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositoryNotification() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositoryNotification() is true.
Method	<b>getRepositoryHierarchySession</b>	
<b>Description</b>	Gets the repository hierarchy traversal session.	
<b>Return</b>	<a href="#">osid.repository.RepositoryHierarchySession</a>	a RepositoryHierarchySession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositoryHierarchy() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositoryHierarchy() is true.
Method	<b>getRepositoryHierarchyDesignSession</b>	
<b>Description</b>	Gets the repository hierarchy design session.	
<b>Return</b>	<a href="#">osid.repository.RepositoryHierarchyDesignSession</a>	a RepositoryHierarchyDesignSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsRepositoryHierarchyDesign() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsRepositoryHierarchyDesign() is true.
Method	<b>getCompositionLookupSession</b>	
<b>Description</b>	Gets the OsidSession associated with the composition lookup service.	
<b>Return</b>	<a href="#">osid.repository.CompositionLookupSession</a>	the new CompositionLookupSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsCompositionLookup() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsCompositionLookup() is true.

Method	getCompositionLookupSessionForRepository	
<b>Description</b>	Gets the OsidSession associated with the composition lookup service for the given repository.	
<b>Parameters</b>	osid.id.Id	repositoryId
<b>Return</b>	osid.repository.CompositionLookupSession	the new CompositionLookupSession
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request supportsCompositionLookup() or supportsVisibleFederation() is false
<b>Compliance</b>	optional	This method must be implemented if supportsCompositionLookup() and supportsVisibleFederation() are true.
Method	getCompositionSearchSession	
<b>Description</b>	Gets a composition search session.	
<b>Return</b>	osid.repository.CompositionSearchSession	a CompositionSearchSession
<b>Errors</b>	OPERATION_FAILED UNIMPLEMENTED	unable to complete request supportsCompositionSearch() is false
<b>Compliance</b>	optional	This method must be implemented if supportsCompositionSearch() is true.
Method	getCompositionSearchSessionForRepository	
<b>Description</b>	Gets a composition search session for the given repository.	
<b>Parameters</b>	osid.id.Id	repositoryId
<b>Return</b>	osid.repository.CompositionSearchSession	a CompositionSearchSession
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request supportsCompositionSearch() or supportsVisibleFederation() is false
<b>Compliance</b>	optional	This method must be implemented if supportsCompositionSearch() and supportsVisibleFederation() are true.
Method	getCompositionAdminSession	
<b>Description</b>	Gets a composition administration session for creating, updating and deleting compositions.	
<b>Return</b>	osid.repository.CompositionAdminSession	a CompositionAdminSession
<b>Errors</b>	OPERATION_FAILED UNIMPLEMENTED	unable to complete request supportsCompositionAdmin() is false
<b>Compliance</b>	optional	This method must be implemented if supportsCompositionAdmin() is true.
Method	getCompositionAdminSessionForRepository	
<b>Description</b>	Gets a composition administrative session for the given repository.	
<b>Parameters</b>	osid.id.Id	repositoryId
<b>Return</b>	osid.repository.CompositionAdminSession	a CompositionAdminSession
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request supportsCompositionAdmin() or supportsVisibleFederation() is false
<b>Compliance</b>	optional	This method must be implemented if supportsCompositionAdmin() and supportsVisibleFederation() are true.

Method	<b>getCompositionNotificationSession</b>	
<b>Description</b>	Gets the notification session for notifications pertaining to composition changes.	
<b>Parameters</b>	<code>osid.repository.CompositionReceiver</code>	receiver the notification callback
<b>Return</b>	<code>osid.repository.CompositionNotificationSession</code>	a CompositionNotificationSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	receiver is null unable to complete request supportsCompositionNotification() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionNotification() is true.
Method	<b>getCompositionNotificationSessionForRepository</b>	
<b>Description</b>	Gets the composition notification session for the given repository.	
<b>Parameters</b>	<code>osid.repository.CompositionReceiver</code>	receiver the notification callback
	<code>osid.id.Id</code>	repositoryId the Id of the repository
<b>Return</b>	<code>osid.repository.CompositionNotificationSession</code>	a CompositionNotificationSession
<b>Errors</b>	<code>NOT_FOUND</code> <code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	repositoryId not found receiver or repositoryId is null unable to complete request supportsCompositionNotification() or supportsVisibleFederation() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionNotification() and supportsVisibleFederation() are true.
Method	<b>getCompositionHierarchySession</b>	
<b>Description</b>	Gets the session traversing composition hierarchies.	
<b>Return</b>	<code>osid.repository.CompositionHierarchySession</code>	a CompositionHierarchySession
<b>Errors</b>	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionHierarchy() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionHierarchy() is true.
Method	<b>getCompositionHierarchyDesignSession</b>	
<b>Description</b>	Gets the session designing composition hierarchies.	
<b>Return</b>	<code>osid.repository.CompositionHierarchyDesignSession</code>	a CompositionHierarchyDesignSession
<b>Errors</b>	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionHierarchyDesign() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionHierarchyDesign() is true.
Method	<b>getCompositionRepositorySession</b>	
<b>Description</b>	Gets the session for retrieving composition to repository mappings.	
<b>Return</b>	<code>osid.repository.CompositionRepositorySession</code>	a CompositionRepositorySession
<b>Errors</b>	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionRepository() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionRepository() is true.
Method	<b>getCompositionRepositoryAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning composition to repository mappings.	
<b>Return</b>	<code>osid.repository.CompositionRepositoryAssignmentSession</code>	a CompositionRepositoryAssignmentSession
<b>Errors</b>	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionRepositoryAssignment() is false
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsCompositionRepositoryAssignment() is true.

Method	<b>getCompositionSubjectSession</b>	
<b>Description</b>	Gets the session for retrieving composition to subject mappings.	
<b>Return</b>	<a href="#">osid.repository.CompositionSubjectSession</a>	a CompositionSubjectSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsCompositionSubject() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsCompositionSubject() is true.
Method	<b>getCompositionSubjectAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning composition to subject mappings.	
<b>Return</b>	<a href="#">osid.repository.CompositionSubjectAssignmentSession</a>	a CompositionSubjectAssignmentSession
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">UNIMPLEMENTED</a>	supportsCompositionSubjectAssignment() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsCompositionSubjectAssignment() is true.
Method	<b>getResourceManager</b>	
<b>Description</b>	Gets the resource service for accessing resources to use in authorizations.	
<b>Return</b>	<a href="#">osid.resource.ResourceManager</a>	a ResourceManager
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.RepositoryProxyManager</b>
Implements	<a href="#">osid.OsidProxyManager</a> <a href="#">osid.repository.RepositoryProfile</a>
Description	<p>The repository manager provides access to asset lookup and creation session and provides interoperability tests for various aspects of this service. Methods in this manager support the passing of an Authentication object for the purposes of proxy authentication. The sessions included in this manager are:</p> <ul style="list-style-type: none"> <li>• AssetLookupSession: a session to retrieve assets</li> <li>• AssetSearchSession: a session to search for assets</li> <li>• AssetAdminSession: a session to create and delete assets</li> <li>• AssetNotificationSession: a session to receive notifications pertaining to asset changes</li> <li>• AssetRepositorySession: a session to look up asset to repository mappings</li> <li>• AssetRepositoryAssignmentSession: a session to manage asset to repository mappings</li> <li>• AssetCreditSession: a session to look up asset credits</li> <li>• AssetCreditAssignmentSession: a session to manage asset credits</li> <li>• AssetTemporalSession: a session to access the temporal coverage of an asset</li> <li>• AssetTemporalAssignmentSession: a session to manage the temporal coverage of an asset</li> <li>• AssetSpatialSession: a session to access the spatial coverage of an asset</li> <li>• AssetSpatialAssignmentSession: a session to manage the spatial coverage of an asset</li>   <li>• SubjectLookupSession: a session to retrieve subjects</li> <li>• SubjectSearchSession: a session to search for subjects</li> <li>• SubjectAdminSession: a session to create and delete subjects</li> <li>• SubjectNotificationSession: a session to receive notifications pertaining to subjects changes</li> <li>• SubjectHierarchySession: a session to traverse a hierarchy of subjects</li> <li>• SubjectHierarchyDesignSession: a session to manage a subject hierarchy</li> <li>• SubjectRepositorySession: a session to look up subject to repository mappings</li> <li>• SubjectRepositoryAssignmentSession: a session to manage subject to repository mappings</li>   <li>• RepositoryLookupSession: a session to retrieve repositories</li> <li>• RepositorySearchSession: a session to search for repositories</li> <li>• RepositoryAdminSession: a session to create, update and delete repositories</li> <li>• RepositoryNotificationSession: a session to receive notifications pertaining to changes in repositories</li> <li>• RepositoryHierarchySession: a session to traverse repository hierarchies</li> <li>• RepositoryHierarchyDesignSession: a session to manage repository hierarchies</li> <li>• CompositionLookupSession: a session to retrieve compositions</li> <li>• CompositionSearchSession: a session to search for compositions</li> <li>• CompositionAdminSession: a session to create, update and delete compositions</li> <li>• CompositionNotificationSession: a session to receive notifications pertaining to changes in compositions</li> <li>• CompositionHierarchySession: a session to traverse composition hierarchies</li> <li>• CompositionHierarchyDesignSession: a session to manage composition hierarchies</li> </ul> <p>In addition to these sessions, repository leverages other service definitions to fulfill its service.</p> <ul style="list-style-type: none"> <li>• ResourceManager: provides the interfaces to find, create and modify resources known to this service</li> </ul>

Method	getAssetLookupSession		
Description	Gets the OsidSession associated with the asset lookup service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	<a href="#">osid.repository.AssetLookupSession</a>		the new AssetLookupSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetLookup() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetLookup() is true.
Method	getAssetLookupSessionForRepository		
Description	Gets the OsidSession associated with the asset lookup service for the given repository.		
Parameters	osid.id.Id	repositoryId	the Id of the repository
	osid.authentication.Authentication	authentication	proxy authentication
Return	<a href="#">osid.repository.AssetLookupSession</a>		the new AssetLookupSession
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		repositoryId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetLookup() or supportsVisibleFederation() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetLookup() and supportsVisibleFederation() are true.
Method	getAssetSearchSession		
Description	Gets an asset search session.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	<a href="#">osid.repository.AssetSearchSession</a>		an AssetSearchSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetSearch() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetSearch() is true.
Method	getAssetSearchSessionForRepository		
Description	Gets an asset search session for the given repository.		
Parameters	osid.id.Id	repositoryId	the Id of the repository
	osid.authentication.Authentication	authentication	proxy authentication
Return	<a href="#">osid.repository.AssetSearchSession</a>		an AssetSearchSession
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		repositoryId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetSearch() or supportsVisibleFederation() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetSearch() and supportsVisibleFederation() are true.

Method	<b>getAssetAdminSession</b>	
<b>Description</b>	Gets an asset administration session for creating, updating and deleting assets.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetAdminSession</code>	an AssetAdminSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetAdmin()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetAdmin()</code> is true.
Method	<b>getAssetAdminSessionForRepository</b>	
<b>Description</b>	Gets an asset administration session for the given repository.	
<b>Parameters</b>	<code>osid.id.Id</code>	repositoryId the Id of the repository
	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetAdminSession</code>	an AssetAdminSession
<b>Errors</b>	<code>NOT_FOUND</code>	repositoryId not found
	<code>NULL_ARGUMENT</code>	repositoryId or authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetAdmin()</code> or <code>supportsVisibleFederation()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetAdmin()</code> and <code>supportsVisibleFederation()</code> are true.
Method	<b>getAssetNotificationSession</b>	
<b>Description</b>	Gets the notification session for notifications pertaining to asset changes.	
<b>Parameters</b>	<code>osid.repository.AssetReceiver</code>	receiver notification callback
	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetNotificationSession</code>	an AssetNotificationSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	receiver or authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetNotification()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetNotification()</code> is true.

Method	getAssetNotificationSessionForRepository		
Description	Gets the asset notification session for the given repository.		
Parameters	osid.repository.AssetReceiver	receiver	notification callback
	osid.id.Id	repositoryId	the Id of the repository
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.AssetNotificationSession		an AssetNotificationSession
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		receiver, repositoryId or authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetNotification() or supportsVisibleFederation() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetNotification() and supportsVisibleFederation() are true.
Method	getAssetRepositorySession		
Description	Gets the session for retrieving asset to repository mappings.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.AssetRepositorySession		an AssetRepositorySession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetRepository() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetRepository() is true.
Method	getAssetRepositoryAssignmentSession		
Description	Gets the session for assigning asset to repository mappings.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.AssetRepositoryAssignmentSession		an AssetRepositoryAssignmentSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetRepositoryAssignment() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetRepositoryAssignment() is true.
Method	getAssetSubjectSession		
Description	Gets the session for retrieving asset to subject mappings.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.AssetSubjectSession		an AssetSubjectSession
Errors	NULL_ARGUMENT		authentication is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authentication is invalid
	UNIMPLEMENTED		supportsAssetSubject() is false
	UNSUPPORTED		the authentication service is not supported
Compliance	optional		This method must be implemented if supportsAssetSubject() is true.

Method	<b>getAssetSubjectAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning asset to subject mappings.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetSubjectAssignmentSession</code>	an AssetSubjectAssignmentSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetSubjectAssignment()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetSubjectAssignment()</code> is true.
Method	<b>getAssetAlternativeSession</b>	
<b>Description</b>	Gets the session for retrieving asset alternatives.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetAlternativeSession</code>	an AssetAlternativeSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetAlternative()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetAlternative()</code> is true.
Method	<b>getAssetAlternativeAssignmentSession</b>	
<b>Description</b>	Gets the session for assigning asset alternatives.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetAlternativeAssignmentSession</code>	an AssetAlternativeAssignmentSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetAlternativeAssignment()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetAlternativeAssignment()</code> is true.
Method	<b>getAssetCreditSession</b>	
<b>Description</b>	Gets the session for retrieving asset credits.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.AssetCreditSession</code>	an AssetCreditSession
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authentication is invalid
	<code>UNIMPLEMENTED</code>	<code>supportsAssetCredit()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if <code>supportsAssetCredit()</code> is true.

Method	getAssetCreditAssignmentSession	
Description	Gets the session for assigning asset credits.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.AssetCreditAssignmentSession	an AssetCreditAssignmentSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsAssetCreditAssignment() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsAssetCreditAssignment() is true.
Method	getAssetTemporalSession	
Description	Gets the session for retrieving temporal coverage of an asset.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.AssetTemporalSession	an AssetTemporalSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsTemporalAssets() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsTemporalAssets() is true.
Method	getAssetTemporalAssignmentSession	
Description	Gets the session for assigning temporal coverage to an asset.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.AssetTemporalAssignmentSession	an AssetTemporalAssignmentSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsAssetTemporalAssignment() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsAssetTemporalAssignment() is true.
Method	getAssetSpatialSession	
Description	Gets the session for retrieving spatial coverage of an asset.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.AssetSpatialSession	an AssetSpatialSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsSpatialAssets() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsSpatialAssets() is true.

Method	getAssetSpatialAssignmentSession	
Description	Gets the session for assigning spatial coverage to an asset.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.repository.AssetSpatialAssignmentSession	an AssetSpatialAssignmentSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsAssetSpatialAssignment() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsAssetSpatialAssignment() is true.
Method	getAssetCompositionSession	
Description	Gets the session for retrieving asset compositions.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.repository.AssetCompositionSession	an AssetCompositionSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsAssetComposition() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsAssetComposition() is true.
Method	getAssetCompositionAssignmentSession	
Description	Gets the session for creating asset compositions.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.repository.AssetCompositionAssignmentSession	an AssetCompositionAssignmentSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsAssetCompositionAssignment() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsAssetCompositionAssignment() is true.
Method	getSubjectLookupSession	
Description	Gets the OsidSession associated with the subject lookup service.	
Parameters	osid.authentication.Authentication	authentication proxy authentication
Return	osid.repository.SubjectLookupSession	the new SubjectLookupSession
Errors	NULL_ARGUMENT	authentication is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authentication is invalid
	UNIMPLEMENTED	supportsSubjectLookup() is false
	UNSUPPORTED	the authentication service is not supported
Compliance	optional	This method must be implemented if supportsSubjectLookup() is true.

Method	getSubjectLookupSessionForRepository		
Description	Gets the OsidSession associated with the subject lookup service for the given repository.		
Parameters	osid.id.Id	repositoryId	the Id of the repository
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.SubjectLookupSession		the new SubjectLookupSession
Errors	NOT_FOUND	repositoryId not found	
	NULL_ARGUMENT	repositoryId or authentication s null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authentication is invalid	
	UNIMPLEMENTED	supportsSubjectLookup() or supportsVisibleFederation() is false	
	UNSUPPORTED	the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsSubjectLookup() and supportsVisibleFederation() are true.
Method	getSubjectSearchSession		
Description	Gets a subject search session.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.SubjectSearchSession		a SubjectSearchSession
Errors	NULL_ARGUMENT	authentication is null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authentication is invalid	
	UNIMPLEMENTED	supportsSubjectSearch() is false	
	UNSUPPORTED	the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsSubjectSearch() is true.
Method	getSubjectSearchSessionForRepository		
Description	Gets a subject search session for the given repository.		
Parameters	osid.id.Id	repositoryId	the Id of the repository
	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.SubjectSearchSession		a SubjectSearchSession
Errors	NOT_FOUND	repositoryId not found	
	NULL_ARGUMENT	repositoryId or authentication s null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authentication is invalid	
	UNIMPLEMENTED	supportsSubjectSearch() or supportsVisibleFederation() is false	
	UNSUPPORTED	the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsSubjectSearch() and supportsVisibleFederation() are true.
Method	getSubjectAdminSession		
Description	Gets a subject administration session for creating, updating and deleting subjects.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.SubjectAdminSession		a SubjectAdminSession
Errors	NULL_ARGUMENT	authentication is null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authentication is invalid	
	UNIMPLEMENTED	supportsSubjectAdmin() is false	
	UNSUPPORTED	the authentication service is not supported	
Compliance	optional		This method must be implemented if supportsSubjectAdmin() is true.

Method	<b>getSubjectAdminSessionForRepository</b>				
<b>Description</b>	Gets a subject administrative session for the given repository.				
<b>Parameters</b>	<code>osid.id.Id</code>	repositoryId	the Id of the repository		
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication		
<b>Return</b>	<code>osid.repository.SubjectAdminSession</code>				
<b>Errors</b>	<code>NOT_FOUND</code>	repositoryId not found			
	<code>NULL_ARGUMENT</code>	repositoryId or authentication is null			
	<code>OPERATION_FAILED</code>	unable to complete request			
	<code>PERMISSION_DENIED</code>	authentication is invalid			
	<code>UNIMPLEMENTED</code>	supportsSubjectAdmin() or supportsVisibleFederation() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
<b>Compliance</b>	<code>optional</code>				
Method	<b>getSubjectNotificationSession</b>				
<b>Description</b>	Gets the notification session for notifications pertaining to subject changes.				
<b>Parameters</b>	<code>osid.repository.SubjectReceiver</code>	receiver	notification callback		
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication		
<b>Return</b>	<code>osid.repository.SubjectNotificationSession</code>				
<b>Errors</b>	<code>NULL_ARGUMENT</code>	receiver or authentication is null			
	<code>OPERATION_FAILED</code>	unable to complete request			
	<code>PERMISSION_DENIED</code>	authentication is invalid			
	<code>UNIMPLEMENTED</code>	supportsSubjectNotification() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
<b>Compliance</b>	<code>optional</code>				
Method	<b>getSubjectNotificationSessionForRepository</b>				
<b>Description</b>	Gets the subject notification session for the given repository.				
<b>Parameters</b>	<code>osid.repository.SubjectReceiver</code>	receiver	notification callback		
	<code>osid.id.Id</code>	repositoryId	the Id of the repository		
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication		
<b>Return</b>	<code>osid.repository.SubjectNotificationSession</code>				
<b>Errors</b>	<code>NOT_FOUND</code>	repositoryId not found			
	<code>NULL_ARGUMENT</code>	receiver, repositoryId or authentication is null			
	<code>OPERATION_FAILED</code>	unable to complete request			
	<code>PERMISSION_DENIED</code>	authentication is invalid			
	<code>UNIMPLEMENTED</code>	supportsSubjectNotification() or supportsVisibleFederation() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
<b>Compliance</b>	<code>optional</code>				

Method	getSubjectHierarchySession				
Description	Gets the subject hierarchy traversal session.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	<a href="#">osid.repository.SubjectHierarchySession</a>		a SubjectHierarchySession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectHierarchy() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsSubjectHierarchy() is true.			
Method	getSubjectHierarchyDesignSession				
Description	Gets the subject hierarchy design session.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	<a href="#">osid.repository.SubjectHierarchyDesignSession</a>		a SubjectHierarchyDesignSession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectHierarchyDesign() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsSubjectHierarchyDesign() is true.			
Method	getSubjectRepositorySession				
Description	Gets the session for retrieving subject to repository mappings.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	<a href="#">osid.repository.SubjectRepositorySession</a>		a SubjectRepositorySession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectRepository() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsSubjectRepository() is true.			
Method	getSubjectRepositoryAssignmentSession				
Description	Gets the session for assigning subject to repository mappings.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	<a href="#">osid.repository.SubjectRepositoryAssignmentSession</a>		a SubjectRepositoryAssignmentSession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectRepositoryAssignment() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsSubjectRepositoryAssignment() is true.			

Method	getRepositoryLookupSession	
<b>Description</b>	Gets the repository lookup session.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.RepositoryLookupSession</code>	a RepositoryLookupSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid supportsRepositoryLookup() is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsRepositoryLookup() is true.
Method	getRepositorySearchSession	
<b>Description</b>	Gets the repository search session.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.RepositorySearchSession</code>	a RepositorySearchSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid supportsRepositorySearch() is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsRepositorySearch() is true.
Method	getRepositoryAdminSession	
<b>Description</b>	Gets the repository administrative session for creating, updating and deleting repositories.	
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication proxy authentication
<b>Return</b>	<code>osid.repository.RepositoryAdminSession</code>	a RepositoryAdminSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	authentication is null unable to complete request authentication is invalid supportsRepositoryAdmin() is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsRepositoryAdmin() is true.
Method	getRepositoryNotificationSession	
<b>Description</b>	Gets the notification session for subscribing to changes to a repository.	
<b>Parameters</b>	<code>osid.repository.RepositoryReceiver</code> <code>osid.authentication.Authentication</code>	receiver notification callback authentication proxy authentication
<b>Return</b>	<code>osid.repository.RepositoryNotificationSession</code>	a RepositoryNotificationSession
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNIMPLEMENTED</code> <code>UNSUPPORTED</code>	receiver or authentication is null unable to complete request authentication is invalid supportsRepositoryNotification() is false the authentication service is not supported
<b>Compliance</b>	<code>optional</code>	This method must be implemented if supportsRepositoryNotification() is true.

Method	<b>getRepositoryHierarchySession</b>		
<b>Description</b>	Gets the repository hierarchy traversal session.		
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.repository.RepositoryHierarchySession</code>		
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null	
	<code>OPERATION_FAILED</code>	unable to complete request	
	<code>PERMISSION_DENIED</code>	authentication is invalid	
	<code>UNIMPLEMENTED</code>	supportsRepositoryHierarchy() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
<b>Compliance</b>	<code>optional</code>		This method must be implemented if supportsRepositoryHierarchy() is true.
Method	<b>getRepositoryHierarchyDesignSession</b>		
<b>Description</b>	Gets the repository hierarchy design session.		
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.repository.RepositoryHierarchyDesignSession</code>		
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null	
	<code>OPERATION_FAILED</code>	unable to complete request	
	<code>PERMISSION_DENIED</code>	authentication is invalid	
	<code>UNIMPLEMENTED</code>	supportsRepositoryHierarchyDesign() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
<b>Compliance</b>	<code>optional</code>		This method must be implemented if supportsRepositoryHierarchyDesign() is true.
Method	<b>getCompositionLookupSession</b>		
<b>Description</b>	Gets the OsidSession associated with the composition lookup service.		
<b>Parameters</b>	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.repository.CompositionLookupSession</code>		
<b>Errors</b>	<code>NULL_ARGUMENT</code>	authentication is null	
	<code>OPERATION_FAILED</code>	unable to complete request	
	<code>PERMISSION_DENIED</code>	authentication is invalid	
	<code>UNIMPLEMENTED</code>	supportsCompositionLookup() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
<b>Compliance</b>	<code>optional</code>		This method must be implemented if supportsCompositionLookup() is true.
Method	<b>getCompositionLookupSessionForRepository</b>		
<b>Description</b>	Gets the OsidSession associated with the composition lookup service for the given repository.		
<b>Parameters</b>	<code>osid.id.Id</code>	repositoryId	the Id of the repository
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
<b>Return</b>	<code>osid.repository.CompositionLookupSession</code>		
<b>Errors</b>	<code>NOT_FOUND</code>	repositoryId not found	
	<code>NULL_ARGUMENT</code>	repositoryId or authentication is null	
	<code>OPERATION_FAILED</code>	unable to complete request	
	<code>PERMISSION_DENIED</code>	authentication is invalid	
	<code>UNIMPLEMENTED</code>	supportsCompositionLookup() or supportsVisibleFederation() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
<b>Compliance</b>	<code>optional</code>		This method must be implemented if supportsCompositionLookup() and supportsVisibleFederation() are true.

Method	getCompositionSearchSession				
Description	Gets a composition search session.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.CompositionSearchSession		a CompositionSearchSession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsCompositionSearch() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsCompositionSearch() is true.			
Method	getCompositionSearchSessionForRepository				
Description	Gets a composition search session for the given repository.				
Parameters	osid.id.Id	repositoryId	the Id of the repository		
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.CompositionSearchSession		a CompositionSearchSession		
Errors	NOT_FOUND	repositoryId not found			
	NULL_ARGUMENT	repositoryId or authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsCompositionSearch() or supportsVisibleFederation() is false			
Compliance	optional	This method must be implemented if supportsCompositionSearch() and supportsVisibleFederation() are true.			
Method	getCompositionAdminSession				
Description	Gets a composition administration session for creating, updating and deleting compositions.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.CompositionAdminSession		a CompositionAdminSession		
Errors	NULL_ARGUMENT	authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsCompositionAdmin() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional	This method must be implemented if supportsCompositionAdmin() is true.			
Method	getCompositionAdminSessionForRepository				
Description	Gets a composition administrative session for the given repository.				
Parameters	osid.id.Id	repositoryId	the Id of the repository		
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.CompositionAdminSession		a CompositionAdminSession		
Errors	NOT_FOUND	repositoryId not found			
	NULL_ARGUMENT	repositoryId or authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsCompositionAdmin() or supportsVisibleFederation() is false			
Compliance	optional	This method must be implemented if supportsCompositionAdmin() and supportsVisibleFederation() are true.			

Method	<b>getCompositionNotificationSession</b>		
Description	Gets the notification session for notifications pertaining to composition changes.		
Parameters	<code>osid.repository.CompositionReceiver</code>	receiver	notification callback
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionNotificationSession</code> a CompositionNotificationSession		
Errors	<code>NULL_ARGUMENT</code>		receiver or authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsCompositionNotification()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
Compliance	<code>optional</code>		This method must be implemented if <code>supportsCompositionNotification()</code> is true.
Method	<b>getCompositionNotificationSessionForRepository</b>		
Description	Gets the composition notification session for the given repository.		
Parameters	<code>osid.repository.CompositionReceiver</code>	receiver	notification callback
Parameters	<code>osid.id.Id</code>	repositoryId	the Id of the repository
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionNotificationSession</code> a CompositionNotificationSession		
Errors	<code>NOT_FOUND</code>		repositoryId not found
	<code>NULL_ARGUMENT</code>		receiver, repositoryId or authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsCompositionNotification()</code> or <code>supportsVisibleFederation()</code> is false
Errors	<code>UNSUPPORTED</code>		the authentication service is not supported
	<code>optional</code>		This method must be implemented if <code>supportsCompositionNotification()</code> and <code>supportsVisibleFederation()</code> are true.
Method	<b>getCompositionHierarchySession</b>		
Description	Gets the session traversing composition hierarchies.		
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionHierarchySession</code> a CompositionHierarchySession		
Errors	<code>NULL_ARGUMENT</code>		authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsCompositionHierarchy()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
Compliance	<code>optional</code>		This method must be implemented if <code>supportsCompositionHierarchy()</code> is true.
Method	<b>getCompositionHierarchyDesignSession</b>		
Description	Gets the session designing composition hierarchies.		
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionHierarchyDesignSession</code> a CompositionHierarchyDesignSession		
Errors	<code>NULL_ARGUMENT</code>		authentication is null
	<code>OPERATION_FAILED</code>		unable to complete request
	<code>PERMISSION_DENIED</code>		authentication is invalid
	<code>UNIMPLEMENTED</code>		<code>supportsCompositionHierarchyDesign()</code> is false
	<code>UNSUPPORTED</code>		the authentication service is not supported
Compliance	<code>optional</code>		This method must be implemented if <code>supportsCompositionHierarchyDesign()</code> is true.

Method	<b>getCompositionRepositorySession</b>	
Description	Gets the session for retrieving composition to repository mappings.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.CompositionRepositorySession	a CompositionRepositorySession
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsCompositionRepository() is false the authentication service is not supported
Compliance	optional	This method must be implemented if supportsCompositionRepository() is true.
Method	<b>getCompositionRepositoryAssignmentSession</b>	
Description	Gets the session for assigning composition to repository mappings.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.CompositionRepositoryAssignmentSession	a CompositionRepositoryAssignmentSession
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsCompositionRepositoryAssignment() is false the authentication service is not supported
Compliance	optional	This method must be implemented if supportsCompositionRepositoryAssignment() is true.
Method	<b>getCompositionSubjectSession</b>	
Description	Gets the session for retrieving composition to subject mappings.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.CompositionSubjectSession	a CompositionSubjectSession
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsCompositionSubject() is false the authentication service is not supported
Compliance	optional	This method must be implemented if supportsCompositionSubject() is true.
Method	<b>getCompositionSubjectAssignmentSession</b>	
Description	Gets the session for assigning composition to subject mappings.	
Parameters	osid.authentication.Authentication	authentication
Return	osid.repository.CompositionSubjectAssignmentSession	a CompositionSubjectAssignmentSession
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNIMPLEMENTED UNSUPPORTED	authentication is null unable to complete request authentication is invalid supportsCompositionSubjectAssignment() is false the authentication service is not supported
Compliance	optional	This method must be implemented if supportsCompositionSubjectAssignment() is true.
Method	<b>getResourceManager</b>	
Description	Gets the resource service for accessing resources to use in authorizations.	
Return	osid.resource.ResourceManager	a ResourceManager
Errors	OPERATION_FAILED	unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetLookupSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session defines methods for retrieving assets. An Asset represents an element of content stored in a Repository.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> <li>• isolated repository view: All asset methods in this session operate, retrieve and pertain to assets defined explicitly in the current repository. Using an isolated view is useful for managing Assets with the AssetAdminSession.</li> <li>• federated repository view: All asset methods in this session operate, retrieve and pertain to all assets defined in this repository and any other assets implicitly available in this repository through repository inheritance.</li> </ul> <p>The methods <code>useFederatedRepositoryView()</code> and <code>useIsolatedRepositoryView()</code> behave as a radio group and one should be selected before invoking any lookup methods.</p> <p>Assets may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the Asset.</p>	
Method	<b>getRepositoryId</b>	
Description	Gets the Repository Id associated with this session.	
Return	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getRepository</b>	
Description	Gets the Repository associated with this session.	
Return	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>canLookupAssets</b>	
Description	Tests if this user can perform Asset lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer lookup operations.	
Return	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>useComparativeAssetView</b>	
Description	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>usePlenaryAssetView</b>	
Description	A complete view of the Asset returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.

<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include assets in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>getAsset</b>	
<b>Description</b>	Gets the Asset specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Asset may have a different Id than requested, such as the case where a duplicate Id was assigned to an Asset and retained for compatibility.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId
<b>Return</b>	<a href="#">osid.repository.Asset</a>	
<b>Errors</b>	NOT_FOUND	no Asset found with the given Id
	NULL_ARGUMENT	assetId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getAssetsByIds</b>	
<b>Description</b>	Gets an AssetList corresponding to the given IdList. In plenary mode, the returned list contains all of the assets specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Assets may be omitted from the list and may present the elements in any order including returning a unique set.	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	assetIdList
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	
<b>Errors</b>	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	assetIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getAssetsByGenusType</b>	
<b>Description</b>	Gets an AssetList corresponding to the given asset genus Type which does not include assets of types derived from the specified Type. In plenary mode, the returned list contains all known assets or an error results. Otherwise, the returned list may contain only those assets that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetGenusType
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	
<b>Errors</b>	NULL_ARGUMENT	assetGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	<b>Compliance</b>	This method must be implemented.
<b>Method</b>	<b>getAssetsByParentGenusType</b>	
<b>Description</b>	Gets an AssetList corresponding to the given asset genus Type and include any additional assets with genus types derived from the specified Type. In plenary mode, the returned list contains all known assets or an error results. Otherwise, the returned list may contain only those assets that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetGenusType
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	
<b>Errors</b>	NULL_ARGUMENT	assetGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	<b>Compliance</b>	This method must be implemented.

Method	getAssetsByRecordType	
<b>Description</b>	Gets an AssetList containing the given asset record Type. In plenary mode, the returned list contains all known assets or an error results. Otherwise, the returned list may contain only those assets that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetRecordType an asset record type
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	the returned Asset list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	assetInterfaceType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getAssets	
<b>Description</b>	Gets all Assets. In plenary mode, the returned list contains all known assets or an error results. Otherwise, the returned list may contain only those assets that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	a list of Assets
<b>Errors</b>	<a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among Asset objects. The search query is constructed using the AssetQuery interface.</p> <p>getAssetsByQuery() is the basic search method and returns a list of Assets. A more advanced search may be performed with getAssetsBySearch(). It accepts an AssetSearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getAssetsBySearch() returns an AssetSearchResults interface that can be used to access the resulting AssetList or be used to perform a search within the result set through AssetList.</p> <p>This session defines views that offer differing behaviors for searching.</p> <ul style="list-style-type: none"> <li>• federated repository view: searches include assets in repositories of which this repository is an ancestor in the repository hierarchy</li> <li>• isolated repository view: searches are restricted to assets in this repository</li> </ul> <p>Assets may have a record query interface indicated by their respective record interface types. The record query interface is accessed via the AssetQuery.</p>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canSearchAssets</b>	
<b>Description</b>	Tests if this user can perform Asset searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include assets in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAssetQuery</b>	
<b>Description</b>	Gets an asset query interface.	
<b>Return</b>	<a href="#">osid.repository.AssetQuery</a>	the asset query interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getAssetsByQuery	
<b>Description</b>	Gets a list of Assets matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.repository.AssetQuery</a> assetQuery	the search query
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	the returned AssetList
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	assetQuery is null unable to complete request authorization failure the assetQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getAssetSearch	
<b>Description</b>	Gets an asset search interface.	
<b>Return</b>	<a href="#">osid.repository.AssetSearch</a>	the asset search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getAssetSearchOrder	
<b>Description</b>	Gets an asset search order interface. The AssetSearchOrder is supplied to an AssetSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.repository.AssetSearchOrder</a>	the asset search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getAssetsBySearch	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.repository.AssetQuery</a> assetQuery <a href="#">osid.repository.AssetSearch</a> assetSearch	the search query the search interface
<b>Return</b>	<a href="#">osid.repository.AssetSearchResults</a>	the returned search results
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	assetQuery or assetSearch is null unable to complete request authorization failure assetQuery or assetSearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.AssetAdminSession</b>	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session creates and removes assets. The data for create and update is provided via the AssetForm.</p> <p>The view of the administrative methods defined in this session is determined by the provider. For an instance of this session where no repository has been specified, it may not be parallel to the AssetLookupSession. For example, a default AssetLookupSession may view the entire repository hierarchy while the default AssetAdminSession uses an isolated Repository to create new Assets or a specific repository to operate on a predetermined set of Assets. Another scenario is a federated provider who does not wish to permit administrative operations for the federation unaware.</p> <p>Example create:</p> <pre> if (!session.canCreateAssets()) {     return "asset creation not permitted"; }  Type types[1]; types[0] = assetPhotographType; if (!session.canCreateAssetWithRecordTypes(types)) {     return "creating an asset with a photograph type is not supported"; } </pre> <p>AssetForm form = session.getAssetFormForCreate();  Metadata metadata = form.getDisplayNameMetadata();  if (metadata.isReadOnly()) {      return "cannot set display name";  }    form.setDisplayName("my photo");    PhotographRecordForm photoForm = (PhotographRecordForm) form.getRecordForm(assetPhotographType);  Metadata metadata = form.getApertureMetadata();  if (metadata.isReadOnly()) {      return ("cannot set aperture"); }    photoForm.setAperture("5.6"); if (!form.isValid()) {     return form.getValidationMessage(); }    Asset newAsset = session.createAsset(form); </p>	
Method	<b>getRepositoryId</b>	
Description	Gets the Repository Id associated with this session.	
Return	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
Compliance	<b>mandatory</b>	This method must be implemented.

<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateAssets</b>	
<b>Description</b>	Tests if this user can create Assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating an Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer create operations to an unauthorized user.	
<b>Return</b>	<a href="#">boolean</a>	false if Asset creation is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateAssetWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Asset using the desired record types. While RepositoryManager.getAssetRecordTypes() can be used to examine which records are supported, this method tests which record(s) are required for creating a specific Asset. Providing an empty array tests if an Asset can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[] assetRecordTypes</a>	array of types
<b>Return</b>	<a href="#">boolean</a>	true if Asset creation using the specified record Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAssetFormForCreate</b>	
<b>Description</b>	Gets the asset form for creating new assets. A new form should be requested for each create transaction.	
<b>Return</b>	<a href="#">osid.repository.AssetForm</a>	the asset form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>createAsset</b>	
<b>Description</b>	Creates a new Asset.	
<b>Parameters</b>	<a href="#">osid.repository.AssetForm assetForm</a>	the form for this Asset
<b>Return</b>	<a href="#">osid.repository.Asset</a>	the new Asset
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>	attempt at duplicating a property the underlying system is enforcing to be unique
	<a href="#">INVALID_ARGUMENT</a>	one or more of the form elements is invalid
	<a href="#">NULL_ARGUMENT</a>	assetForm is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
	<a href="#">UNSUPPORTED</a>	assetForm is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canUpdateAssets</b>	
<b>Description</b>	Tests if this user can update Assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating an Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer update operations to an unauthorized user.	
<b>Return</b>	<a href="#">boolean</a>	false if Asset modification is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canUpdateAsset		
Description	Tests if this user can update a specified Asset. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an update operation to an unauthorized user for this Asset.		
Parameters	osid.id.Id	assetId	the Id of the Asset
Return	boolean		false if asset modification is not authorized, true otherwise
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	If the assetId is not found, then it is acceptable to return false to indicate the lack of an update available.		
Method	getAssetFormForUpdate		
Description	Gets the asset form for updating an existing asset. A new asset form should be requested for each update transaction.		
Parameters	osid.id.Id	assetId	the Id of the Asset
Return	osid.repository.AssetForm		the asset form
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED		assetId is not found assetId is null unable to complete request
Compliance	mandatory		This method must be implemented.
Method	updateAsset		
Description	Updates an existing asset.		
Parameters	osid.id.Id	assetId	the Id of the Asset
	osid.repository.AssetForm		the form containing the elements to be updated
Errors	INVALID_ARGUMENT NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED		the form contains an invalid value assetId is not found assetId or assetForm is null unable to complete request authorization failure assetForm is not supported
Compliance	mandatory		This method must be implemented.
Method	canDeleteAssets		
Description	Tests if this user can delete Assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting an Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer delete operations to an unauthorized user.		
Return	boolean		false if Asset deletion is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	canDeleteAsset		
Description	Tests if this user can delete a specified Asset. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an delete operation to an unauthorized user for this asset.		
Parameters	osid.id.Id	assetId	the Id of the Asset
Return	boolean		false if deletion of this Asset is not authorized, true otherwise
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	If the assetId is not found, then it is acceptable to return false to indicate the lack of an delete available.		

Method	deleteAsset		
<b>Description</b>	Deletes an Asset.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset to remove
<b>Errors</b>	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	addIdToAsset		
<b>Description</b>	Adds an Id to an Asset for the purpose of creating compatibility. The primary Id of the Asset is determined by the provider. The new Id performs as an alias to the primary Id.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of an Asset
	<a href="#">osid.id.Id</a>	aliasId	the alias Id
<b>Errors</b>	ALREADY_EXISTS		aliasId is already assigned
	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId or aliasId is null
	OPERATION_FAILED		unable to complete request
<b>Compliance</b>	PERMISSION_DENIED		authorization failure
	<a href="#">mandatory</a>		This method must be implemented.
Method	canCreateAssetContent		
<b>Description</b>	Tests if this user can create content for Assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating an Asset will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer create operations to an unauthorized user.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of an Asset
<b>Return</b>	<a href="#">boolean</a>		false if Asset content creation is not authorized, true otherwise
<b>Errors</b>	NULL_ARGUMENT		assetId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	canCreateAssetContentWithRecordTypes		
<b>Description</b>	Tests if this user can create an AssetContent using the desired record interface types. While RepositoryManager.getAssetContentRecordTypes() can be used to test which record interfaces are supported, this method tests which record interface(s) are required for creating a specific AssetContent. Providing an empty array tests if an AssetContent can be created with no records.		
<b>Parameters</b>	<a href="#">osid.type.Type[]</a>	assetContentRecordTypes	array of types
<b>Return</b>	<a href="#">boolean</a>		true if AssetContent creation using the specified Types is supported, false otherwise
<b>Errors</b>	NULL_ARGUMENT		assetContentRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getAssetContentFormForCreate		
<b>Description</b>	Gets an asset content form for creating new assets.		
<b>Return</b>	<a href="#">osid.repository.AssetContentForm</a>		the asset content form
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	createAssetContent				
<b>Description</b>	Creates new AssetContent for a given asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset to associate with this content		
	<a href="#">osid.repository.AssetContentForm</a>	assetContentForm	the form for this AssetContent		
<b>Return</b>	<a href="#">osid.repository.AssetContent</a>		the new AssetContent		
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		attempt at duplicating a property the underlying system is enforcing to be unique		
	<a href="#">INVALID_ARGUMENT</a>		one or more of the form elements is invalid		
	<a href="#">NULL_ARGUMENT</a>		assetContentForm is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
	<a href="#">UNSUPPORTED</a>		assetContentForm is not of this service		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
Method	canUpdateAssetContents				
<b>Description</b>	Tests if this user can update AssetContent. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating an AssetContent will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer update operations to an unauthorized user.				
<b>Return</b>	<a href="#">boolean</a>		false if AssetContent modification is not authorized, true otherwise		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
Method	canUpdateAssetContent				
<b>Description</b>	Tests if this user can update content for a specified Asset. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Asset content will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an update operation to an unauthorized user for this Asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
<b>Return</b>	<a href="#">boolean</a>		false if asset content modification is not authorized, true otherwise		
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		assetId is null		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Provider Notes</b>	available.				
Method	getAssetContentFormForUpdate				
<b>Description</b>	Gets the asset form for updating content for an existing asset. A new asset content form should be requested for each update transaction.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
	<a href="#">osid.id.Id</a>	assetContentId	the Id of the AssetContent		
<b>Return</b>	<a href="#">osid.repository.AssetContentForm</a>		the asset content form		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or assetContentId is not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or assetContentId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

Method	updateAssetContent				
Description	Updates an existing asset.				
Parameters	osid.id.Id	assetId	the Id of the Asset		
	osid.id.Id	assetContentId	the Id of the AssetContent		
	osid.repository.AssetContentForm	assetContentForm	the form containing the elements to be updated		
Errors	INVALID_ARGUMENT		the form contains an invalid value		
	NOT_FOUND		assetId or assetContentId is not found		
	NULL_ARGUMENT		assetId, assetContentId or assetForm is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	canDeleteAssetContents				
Description	Tests if this user can delete AssetsContent from Assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting an AssetContent will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer delete operations to an unauthorized user.				
Return	boolean	false if AssetContent deletion is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	canDeleteAssetContent				
Description	Tests if this user can delete content from a specified Asset. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the AssetContent will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an delete operation to an unauthorized user for this asset.				
Parameters	osid.id.Id	assetId	the Id of the Asset		
	osid.id.Id	assetContentId	the Id of the AssetContent		
Return	boolean	false if deletion of this AssetContent is not authorized, true otherwise			
Errors	NULL_ARGUMENT	assetId or assetContentId is null			
Compliance	mandatory	This method must be implemented.			
Provider Notes	If the assetId is not found, then it is acceptable to return false to indicate the lack of an delete available.				
Method	deleteAssetContent				
Description	Deletes content from an Asset.				
Parameters	osid.id.Id	assetId	the Id of the Asset to remove		
	osid.id.Id	assetContentId	the Id of the AssetContent		
Errors	NOT_FOUND	assetId or assetContentId is not found			
	NULL_ARGUMENT	assetId or assetContentId is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authorization failure			
Compliance	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.AssetNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on adds/changes to Asset objects in this Repository. This also includes existing assets that may appear or disappear due to changes in the Repository hierarchy. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.</p> <p>The two views defined in this session correspond to the views in the AssetLookupSession.</p>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canRegisterForAssetNotifications</b>	
<b>Description</b>	Tests if this user can register for Asset notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include assets in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts notifications to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>registerForNewAssets</b>	
<b>Description</b>	Register for notifications of new assets. AssetReceiver.newAsset() is invoked when a new Asset is appears in this repository.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForChangedAssets</b>	
<b>Description</b>	Registers for notification of updated assets. AssetReceiver.changedAsset() is invoked when an asset in this repository is changed.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	registerForChangedAsset				
Description	Registers for notification of an updated asset. AssetReceiver.changedAsset() is invoked when the specified asset in this repository is changed.				
Parameters	osid.id.Id	assetId	the Id of the Asset to monitor		
Errors	NOT_FOUND		an asset was not found in this repository identified by the given Id		
	NULL_ARGUMENT		assetId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForDeletedAssets				
Description	Registers for notification of deleted assets. AssetReceiver.deletedAsset() is invoked when an asset is deleted or removed from this repository.				
Errors	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForDeletedAsset				
Description	Registers for notification of a deleted asset. AssetReceiver.deletedAsset() is invoked when the specified asset is deleted or removed from this repository.				
Parameters	osid.id.Id	assetId	the Id of the Asset to monitor		
Errors	NOT_FOUND		an asset was not found identified by the given Id		
	NULL_ARGUMENT		assetId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

Interface	osid.repository.AssetRepositorySession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods to retrieve Assets to Repository mappings. An Asset may appear in multiple Repository objects. Each Repository may have its own authorizations governing who is allowed to look at it.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>	
Method	<b>useComparativeRepositoryView</b>	
Description	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>usePlenaryRepositoryView</b>	
Description	A complete view of the Asset and Repository returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>canLookupAssetRepositoryMappings</b>	
Description	Tests if this user can perform lookups of asset/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
Return	<a href="#">boolean</a>	false if looking up mappings is not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAssetIdsByRepository</b>	
Description	Gets the list of Asset Ids associated with a Repository.	
Parameters	<a href="#">osid.id.Id</a>	repositoryId
Return	<a href="#">osid.id.IdList</a>	list of related asset Ids
Errors	NOT_FOUND	repositoryId is not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAssetsByRepository</b>	
Description	Gets the list of Assets associated with a Repository.	
Parameters	<a href="#">osid.id.Id</a>	repositoryId
Return	<a href="#">osid.repository.AssetList</a>	list of related assets
Errors	NOT_FOUND	repositoryId is not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Method	getAssetIdsByRepositories	
<b>Description</b>	Gets the list of Asset Ids corresponding to a list of Repository objects.	
<b>Parameters</b>	osid.id.IdList	repositoryIdList
<b>Return</b>	list of repository Ids	
<b>Errors</b>	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getAssetsByRepositories	
<b>Description</b>	Gets the list of Assets corresponding to a list of Repository objects.	
<b>Parameters</b>	osid.id.IdList	repositoryIdList
<b>Return</b>	list of repository Ids	
<b>Errors</b>	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getRepositoryIdsByAsset	
<b>Description</b>	Gets the list of Repository Ids mapped to an Asset.	
<b>Parameters</b>	osid.id.Id	assetId
<b>Return</b>	Id of an Asset	
<b>Errors</b>	NOT_FOUND	assetId is not found
	NULL_ARGUMENT	assetId is null
	OPERATION_FAILED	unable to complete request
<b>Compliance</b>	PERMISSION_DENIED	authorization failure
	mandatory	This method must be implemented.
Method	getRepositoriesByAsset	
<b>Description</b>	Gets the list of Repository objects mapped to an Asset.	
<b>Parameters</b>	osid.id.Id	assetId
<b>Return</b>	Id of an Asset	
<b>Errors</b>	osid.repository.RepositoryList	list of repositories
	NOT_FOUND	assetId is not found
	NULL_ARGUMENT	assetId is null
<b>Compliance</b>	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetRepositoryAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	<p>This session provides methods to re-assign Assets to Repositories. An Asset may map to multiple Repository objects and removing the last reference to an Asset is the equivalent of deleting it. Each Repository may have its own authorizations governing who is allowed to operate on it.</p> <p>Moving or adding a reference of an Asset to another Repository is not a copy operation (eg: does not change its Id).</p>				
<b>Method</b>	<b>canAssignAssets</b>				
<b>Description</b>	Tests if this user can alter asset/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known mapping methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.				
<b>Return</b>	<a href="#">boolean</a>	false if mapping is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>assignAssetToRepository</b>				
<b>Description</b>	Adds an existing Asset to a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>unassignAssetFromRepository</b>				
<b>Description</b>	Removes an Asset from a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the Asset		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

Interface	osid.repository.AssetSubjectSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session defines methods for accessing the subjects of an asset.</p> <p>This lookup session defines two views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>	
Method	<b>useComparativeAssetView</b>	
Description	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>usePlenaryAssetView</b>	
Description	A complete view of the Asset returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>canLookupAssetSubjects</b>	
Description	Tests if this user can perform lookups on subjects of assets. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.	
Return	<a href="#">boolean</a>	false if lookups are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAssetIdsBySubject</b>	
Description	Gets the list of Asset Ids associated with a Subject.	
Parameters	<a href="#">osid.id.Id</a>	subjectId
Return	<a href="#">osid.id.IdList</a>	list of matching asset Ids
Errors	<a href="#">NOT_FOUND</a>	subjectId is not found
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAssetsBySubject</b>	
Description	Gets the list of Assets associated with a Subject.	
Parameters	<a href="#">osid.id.Id</a>	subjectId
Return	<a href="#">osid.repository.AssetList</a>	list of matching assets
Errors	<a href="#">NOT_FOUND</a>	subjectId is not found
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAssetIdsBySubjects</b>	
Description	Gets the list of Asset Ids corresponding to a list of Subjects.	
Parameters	<a href="#">osid.id.IdList</a>	subjectIdList
Return	<a href="#">osid.id.IdList</a>	list of asset Ids
Errors	<a href="#">NULL_ARGUMENT</a>	subjectIdList is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Method	getAssetsBySubjects	
<b>Description</b>	Gets the list of Assets corresponding to a list of Subjects.	
<b>Parameters</b>	osid.id.IdList	subjectIdList
<b>Return</b>	osid.repository.AssetList	list of assets
<b>Errors</b>	NULL_ARGUMENT	subjectIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getSubjectIdsByAsset	
<b>Description</b>	Gets the Subject Ids mapped to an Asset.	
<b>Parameters</b>	osid.id.Id	assetId
<b>Return</b>	osid.id.IdList	list of subject Ids
<b>Errors</b>	NOT_FOUND	assetId is not found
	NULL_ARGUMENT	assetId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getSubjectsByAsset	
<b>Description</b>	Gets the Subjects mapped to an Asset.	
<b>Parameters</b>	osid.id.Id	assetId
<b>Return</b>	osid.repository.SubjectList	list of subjects
<b>Errors</b>	NOT_FOUND	assetId is not found
	NULL_ARGUMENT	assetId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSubjectAssignmentSession</b>		
<b>Implements</b>	<a href="#">osid.OsidSession</a>		
<b>Description</b>	This session defines methods to assign assets to subjects.		
<b>Method</b>	<b>canManageAssetSubjects</b>		
<b>Description</b>	Tests if this user can change asset subject mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer management operations.		
<b>Return</b>	<a href="#">boolean</a>		false if asset subject management is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>assignAssetToSubject</b>		
<b>Description</b>	Adds an asset to a subject.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.id.Id</a>	subjectId	Id of the Subject
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		asset is already mapped to subject
	<a href="#">NOT_FOUND</a>		assetId or subjectId is not found
	<a href="#">NULL_ARGUMENT</a>		assetId or subjectId is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>unassignAssetFromSubject</b>		
<b>Description</b>	Removes an asset from a subject.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.id.Id</a>	subjectId	Id of the Subject
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or subjectId is not found, or not mapped
	<a href="#">NULL_ARGUMENT</a>		assetId or subjectId is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetAlternativeSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods to lookup mappings among Assets for the purpose of classifying alternative content suitable for accessibility. The consumer may look up alternatives if the desired AssetContent isn't suitable in format or accessibility type. The accessibility Type indicates an accessibility characteristic that is tagged in the AssetContent.</p> <p>The alternative asset may include a variety of content meeting the accessibility criteria. An audio-based alternative may be available in different formats, for example. As such, a content negotiation in the Asset repeats following the retrieval of an alternative.</p>	
<b>Method</b>	<b>canLookupAssetAlternatives</b>	
<b>Description</b>	Tests if this user can perform Asset alternative lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAlternativeAssets</b>	
<b>Description</b>	Finds alternative assets corresponding to the given Asset Id.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId
	the Id of the Asset	
<b>Return</b>	<a href="#">osid.repository.AssetAlternateList</a>	list of asset alternatives
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	<a href="#">assetId</a> not found
		<a href="#">assetId</a> is null
		unable to complete request
		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAlternativeAssetsByAccessibilityType</b>	
<b>Description</b>	Finds alternative assets that have content corresponding the given accessibilitytype.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId
	the Id of the Asset	
	<a href="#">osid.type.Type</a>	accessibilityType
	the Type indicating the accessibility requirement	
<b>Return</b>	<a href="#">osid.repository.AssetAlternateList</a>	list of asset alternatives
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	<a href="#">assetId</a> not found
		<a href="#">assetId</a> or <a href="#">accessibilityType</a> is null
		unable to complete request
		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.AssetAlternativeAssignmentSession				
Implements	<a href="#">osid.OsidSession</a>				
Description	<p>This session provides methods to manage mappings among Assets for the purpose of classifying alternative content suitable for accessibility. The mapping is defined as a tuple among the primary asset, the alternative asset, and the accessibility type.</p> <p>The alternative asset may include a variety of content meeting the accessibility criteria. An audio-based alternative may be available in different formats, for example. As such, a content negotiation in the Asset repeats following the retrieval of an alternative.</p>				
Method	<b>canManageAssetAlternatives</b>				
Description	Tests if this user can change Asset alternative mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.				
Return	<a href="#">boolean</a>	false if mapping not authorized, true otherwise			
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>assignAlternativeToAsset</b>				
Description	Adds an existing asset as an alternative to another asset.				
Parameters	<a href="#">osid.id.Id</a>	alternativeAssetId	the Id of the Asset alternative		
	<a href="#">osid.id.Id</a>	primaryAssetId	the Id of the primary Asset		
	<a href="#">osid.type.Type</a>	accessibilityType	accessibility type		
Errors	<a href="#">NOT_FOUND</a>		primaryAssetId or alternativeAssetId not found		
	<a href="#">NULL_ARGUMENT</a>		primaryAssetId, alternativeAssetId or accessibilityType is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
	<a href="#">UNSUPPORTED</a>		accessibilityType is not supported		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>unassignAlternativeFromAsset</b>				
Description	Removes an alternative asset from an asset.				
Parameters	<a href="#">osid.id.Id</a>	alternativeAssetId	the Id of the Asset alternative		
	<a href="#">osid.id.Id</a>	primaryAssetId	the Id of the primary Asset		
	<a href="#">osid.type.Type</a>	accessibilityType	accessibility type		
Errors	<a href="#">NOT_FOUND</a>		primaryAssetId or alternativeAssetId not found		
	<a href="#">NULL_ARGUMENT</a>		primaryAssetId or alternativeAssetId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

Method	rateAssetAlternative		
Description	Assigns a rating in the form of a grade to the suitability of the alternative.		
Parameters	osid.id.Id	primaryAssetId	the Id of the primary Asset
	osid.id.Id	alternativeAssetId	the Id of the Asset alternative
	osid.type.Type	accessibilityType	accessibility type
	osid.id.Id	gradeId	Id of a Grade
Errors	NOT_FOUND		primaryAssetId, alternativeAssetId or gradeId not found
	NULL_ARGUMENT		primaryAssetId, alternativeAssetId, accessibilityType or gradeId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

get grading system

<b>Interface</b>	<b>osid.repository.AssetCreditSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session defines methods for accessing the credits of an asset.	
<b>Method</b>	<b>canLookupCredits</b>	
<b>Description</b>	Tests if this user can perform AssetCredit lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if lookups are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getPrincipalCredits</b>	
<b>Description</b>	Gets the credits of the principal people involved in the production of this asset. The credits returned would be used to construct an attribution or bibliographic entry. For a book, the type would indicate "author", while the illustrator would be listed in getAllCredits(). The order of the returned list is determined by the sequence number of the AssetCredit.	
<b>Parameters</b>	<a href="#">osid.id.Id</a> assetId	Id of the Asset to query
<b>Return</b>	<a href="#">osid.repository.AssetCreditList</a>	the principal credits
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAllCredits</b>	
<b>Description</b>	Gets the credits of all people involved in the production of this asset. The order of the returned list is determined by the sequence number of the AssetCredit.	
<b>Parameters</b>	<a href="#">osid.id.Id</a> assetId	Id of the Asset to query
<b>Return</b>	<a href="#">osid.repository.AssetCreditList</a>	all the credits
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAllCreditsByType</b>	
<b>Description</b>	Gets the credits of all people involved in the production of this asset of a given type. The order of the returned list is determined by the sequence number of the AssetCredit.	
<b>Parameters</b>	<a href="#">osid.id.Id</a> assetId <a href="#">osid.type.Type</a> creditType	Id of the Asset to query type of the asset credit
<b>Return</b>	<a href="#">osid.repository.AssetCreditList</a>	all the credits of the given type
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId or creditType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.AssetCreditAssignmentSession				
Implements	<a href="#">osid.OsidSession</a>				
Description	This session defines methods to assign credits to assets.				
Method	<b>canManageCredits</b>				
<b>Description</b>	Tests if this user can change asset credits. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.				
<b>Return</b>	<a href="#">boolean</a>	false if credit management is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>addCredit</b>				
<b>Description</b>	Adds a credit to an asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset		
	<a href="#">osid.type.Type</a>	creditType	type of the credit		
	<a href="#">osid.id.Id</a>	resourceId	Id of the Resource representing a person or organization		
	<a href="#">osid.id.Id</a>	aliasId	Id of the Resource representing an alias (such as an actor's role). Use resourceId if there is none.		
	<a href="#">boolean</a>	principal	true if this is a principal credit. A principal credit is included in the return of getPrincipalCredits().		
	<a href="#">cardinal</a>	sequence	a sequence number used for ordering results. Specifying a sequence number the same as another performs an insert before the existing sequence and sequences of subsequent credits may change as a result. Numbers do not need to be contiguous.		
<b>Return</b>	<a href="#">osid.repository.AssetCredit</a>		the new credit		
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		a credit on this asset with the creditType, resourceId and aliasId already exists		
	<a href="#">NOT_FOUND</a>		assetId, resourceId or aliasId is not found		
	<a href="#">NULL_ARGUMENT</a>		null argument provided		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
	<a href="#">UNSUPPORTED</a>		creditType is not supported		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>removeCredit</b>				
<b>Description</b>	Removes a credit from an asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset		
	<a href="#">osid.type.Type</a>	creditType	type of the asset credit		
	<a href="#">osid.id.Id</a>	resourceId	Id of the Resource representing a person or organization		
	<a href="#">osid.id.Id</a>	aliasId	Id of the Resource representing an alias (such as an actor's role)		
<b>Return</b>	<a href="#">osid.repository.AssetCreditList</a>		all the credits of the given type		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		credit identified by assetId, creditType, resourceId and aliasId is not found		
	<a href="#">NULL_ARGUMENT</a>		null argument provided		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

Method	updateCredit		
Description	Updates a credit.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset to update
	<a href="#">osid.type.Type</a>	creditType	existing type of the credit
	<a href="#">osid.id.Id</a>	resourceId	existing Id of the Resource
	<a href="#">osid.id.Id</a>	aliasId	existing Id of the Resource
	boolean	principal	new principal flag
	cardinal	sequence	new sequence number
<b>Errors</b>	<a href="#">NOT_FOUND</a>		credit identified by assetId, creditType, resourceId and aliasId is not found
	<a href="#">NULL_ARGUMENT</a>		null argument provided
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	mandatory		This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetTemporalSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session defines a means for accessing temporal coverage of an asset.	
<b>Method</b>	<b>canLookupTemporalCoverage</b>	
<b>Description</b>	Tests if this user can perform temporal lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if lookups are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getTemporalCoverage</b>	
<b>Description</b>	Gets the temporal coverage related to the subject of this asset. Each element of the returned list	
<b>Parameters</b>	<a href="#">osid.id.Id</a> assetId	Id of the Asset to query
<b>Return</b>	<a href="#">osid.calendaring.DateTimeIntervalList</a>	a list of times relevant to the subject of this asset
<b>Errors</b>	<a href="#">NOT_FOUND</a>	assetId is not found
	<a href="#">NULL_ARGUMENT</a>	assetId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetTemporalAssignmentSession</b>		
<b>Implements</b>	<a href="#">osid.OsidSession</a>		
<b>Description</b>	This session defines methods to manage temporal coverage of an asset.		
<b>Method</b>	<b>canManageTemporalCoverage</b>		
<b>Description</b>	Tests if this user can manage temporal lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.		
<b>Return</b>	<a href="#">boolean</a>		false if temporal management is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>addTemporalCoverage</b>		
<b>Description</b>	Adds a temporal coverage to this asset expressed as a range between two date/times.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.calendaring.DateTime</a>	begin	start date/time
	<a href="#">osid.calendaring.DateTime</a>	end	end date/time
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		interval already exists
	<a href="#">INVALID_ARGUMENT</a>		begin is greater than end
	<a href="#">NOT_FOUND</a>		assetId not found
	<a href="#">NULL_ARGUMENT</a>		assetId, begin or end is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>removeTemporalCoverage</b>		
<b>Description</b>	Removes a temporal range from an asset.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.calendaring.DateTime</a>	begin	start date/time
	<a href="#">osid.calendaring.DateTime</a>	end	end date/time
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId with begin and end not found
	<a href="#">NULL_ARGUMENT</a>		assetId, begin or end is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSpatialSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session defines methods to access spatial mappings of an asset.	
<b>Method</b>	<b>canLookupSpatialCoverage</b>	
<b>Description</b>	Tests if this user can perform spatial lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if spatial lookups are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getSpatialCoverage</b>	
<b>Description</b>	Gets the spacial coverage related to the subject of this asset. Each element of the returned list indicates a point in space with specified granularity and uncertainty, or a spatial area. If the list contains more than one element, each element indicates a relevant time or period for the subject of this asset.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId
	Id of the Asset to query	
<b>Return</b>	<a href="#">osid.spatial.SpatialUnitList</a>	a list of locations relevant to the subject of this asset
<b>Errors</b>	<a href="#">NOT_FOUND</a>	assetId is not found
	<a href="#">NULL_ARGUMENT</a>	assetId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSpatialAssignmentSession</b>		
<b>Implements</b>	<a href="#">osid.OsidSession</a>		
<b>Description</b>	This session defines methods to manage the spatial coverage of an asset.		
<b>Method</b>	<b>canManageSpatialCoverage</b>		
<b>Description</b>	Tests if this user can manage spatial lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.		
<b>Return</b>	<a href="#">boolean</a>		false if spatial management is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>addSpatialCoverage</b>		
<b>Description</b>	Adds a spatial coverage to an asset.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.spatial.SpatialUnit</a>	spatialCoverage	spatial coverage
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		asset already contains this spatial coverage
	<a href="#">INVALID_ARGUMENT</a>		spatialCoverage is invalid
	<a href="#">NOT_FOUND</a>		assetId not found
	<a href="#">NULL_ARGUMENT</a>		assetId or spatialCoverage is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>removeSpatialCoverage</b>		
<b>Description</b>	Removes a spatial coverage from an asset.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset
	<a href="#">osid.spatial.SpatialUnit</a>	spatialCoverage	spatial coverage
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId with spatialCoverage not found
	<a href="#">NULL_ARGUMENT</a>		assetId or spatialCoverage is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetCompositionSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>represents a collection of Assets.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> <li>• isolated view: only assets in the specified composition are accessible</li> <li>• federated view: includes assets in compositions that are descendants of the specified asset</li> </ul> <p>The methods <code>useFederatedAssetCompositionView()</code> and <code>useIsolatedAssetCompositionView()</code> behave as a radio group and one should be selected before invoking any lookup methods.</p>	
<b>Method</b>	<b>canAccessAssetCompositions</b>	
<b>Description</b>	Tests if this user can perform composition lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeAssetCompositionView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryAssetCompositionView</b>	
<b>Description</b>	A complete view of the returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useFederatedAssetCompositionView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include assets in compositions of which this composition is a child in the composition hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedAssetCompositionView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getCompositionAssets</b>	
<b>Description</b>	Gets the list of assets mapped to the given Composition. In plenary mode, the exact Id is found or a <code>NOT_FOUND</code> results. Otherwise, the returned AssetList may have a different Id than requested, such as the case where a duplicate Id was assigned to a Repository and retained for compatibility.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId Id of the Composition
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	list of assets
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	compositionId not found compositionId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.

Method	getCompositionsByAsset	
<b>Description</b>	Gets the Repository specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Repository may have a different Id than requested, such as the case where a duplicate Id was assigned to a Repository and retained for compatibility.	
<b>Parameters</b>	<code>osid.id.Id</code>	assetId Id of the Asset
<b>Return</b>	<code>osid.repository.CompositionList</code>	the returned Composition list
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetCompositionAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	This session provides the means for adding assets to an asset composition. The asset is identified inside a composition using its own Id. To add the same asset to the composition, multiple compositions should be used and placed at the same level in the Composition hierarchy.				
<b>Method</b>	<b>canComposeAssets</b>				
<b>Description</b>	Tests if this user can manage mapping of Assets to Compositions. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as an application hint that may opt not to offer hierarchy operations.				
<b>Return</b>	<a href="#">boolean</a>	false if asset composition is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>addAsset</b>				
<b>Description</b>	Appends an asset to a composition.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset		
	<a href="#">osid.id.Id</a>	compositionId	Id of the Composition		
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		composition already contains asset		
	<a href="#">NOT_FOUND</a>		assetId or compositionId not found		
	<a href="#">NULL_ARGUMENT</a>		assetId or compositionId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>moveAssetAhead</b>				
<b>Description</b>	Reorders assets in a composition by moving the specified asset in front of a reference asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset		
	<a href="#">osid.id.Id</a>	compositionId	Id of the Composition		
	<a href="#">osid.id.Id</a>	referenceId	Id of the reference Asset		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or referenceId not found in composition		
	<a href="#">NULL_ARGUMENT</a>		assetId, referenceId or compositionId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>moveAssetBehind</b>				
<b>Description</b>	Reorders assets in a composition by moving the specified asset behind of a reference asset.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	Id of the Asset		
	<a href="#">osid.id.Id</a>	compositionId	Id of the Composition		
	<a href="#">osid.id.Id</a>	referenceId	Id of the reference Asset		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		assetId or referenceId not found in composition		
	<a href="#">NULL_ARGUMENT</a>		assetId, referenceId or compositionId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

Method	removeAsset		
Description	Removes an Asset from a Composition.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.id.Id	compositionId	Id of the Composition
Errors	NOT_FOUND		assetId not found in composition
	NULL_ARGUMENT		assetId or compositionId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectLookupSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods for retrieving subjects. A Subject represents subject matter relating to a Subject.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> <li>• isolated repository view: All subject methods in this session operate, retrieve and pertain to subjects defined explicitly in the current repository. Using an isolated view is useful for managing Subjects with the SubjectAdminSession.</li> <li>• federated repository view: All subject methods in this session operate, retrieve and pertain to all subjects defined in this repository and any other subjects implicitly available in this repository through repository inheritance.</li> </ul> <p>The methods <code>useFederatedSubjectView()</code> and <code>useIsolatedSubjectView()</code> behave as a radio group and one should be selected before invoking any lookup methods.</p> <p>Subjects may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the Subject.</p>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canLookupSubjects</b>	
<b>Description</b>	Tests if this user can perform Subject lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer lookup operations.	
<b>Return</b>	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeSubjectView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenarySubjectView</b>	
<b>Description</b>	A complete view of the Subject returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include subjects in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.

Method	useIsolatedRepositoryView	
Description	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
Compliance	mandatory	This method is must be implemented.
Method	getSubject	
Description	Gets the Subject specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Subject may have a different Id than requested, such as the case where a duplicate Id was assigned to a Subject and retained for compatibility.	
Parameters	osid.id.Id   subjectId	the Id of the Subject to rerieve
Return	osid.repository.Subject	the returned Subject
Errors	NOT_FOUND	no Subject found with the given Id
	NULL_ARGUMENT	subjectId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getSubjectsByIds	
Description	Gets a SubjectList corresponding to the given IdList. In plenary mode, the returned list contains all of the subjects specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Subjects may be omitted from the list and may present the elements in any order including returning a unique set.	
Parameters	osid.id.IdList   subjectIdList	the list of Ids to rerieve
Return	osid.repository.SubjectList	the returned Subject list
Errors	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	subjectIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getSubjectsByGenusType	
Description	Gets a SubjectList corresponding to the given subject genus Type which does not include subjects of types derived from the specified Type. In plenary mode, the returned list contains all known subjects or an error results. Otherwise, the returned list may contain only those subjects that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type   subjectGenusType	a subject genus type
Return	osid.repository.SubjectList	the returned Subject list
Errors	NULL_ARGUMENT	subjectGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	Compliance	This method must be implemented.
Method	getSubjectsByParentGenusType	
Description	Gets a SubjectList corresponding to the given subject genus Type and include any additional subjects with genus types derived from the specified Type. In plenary mode, the returned list contains all known subjects or an error results. Otherwise, the returned list may contain only those subjects that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type   subjectGenusType	a subject genus type
Return	osid.repository.SubjectList	the returned Subject list
Errors	NULL_ARGUMENT	subjectGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	Compliance	This method must be implemented.

Method	getSubjectsByRecordType	
<b>Description</b>	Gets a SubjectList containing the given subject record Type. In plenary mode, the returned list contains all known subjects or an error results. Otherwise, the returned list may contain only those subjects that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<code>osid.type.Type</code>	subjectRecordType a subject record type
<b>Return</b>	<code>osid.repository.SubjectList</code>	the returned Subject list
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code>	subjectRecordType is null unable to complete request authorization failure
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.
Method	getSubjects	
<b>Description</b>	Gets all Subjects. In plenary mode, the returned list contains all known subjects or an error results. Otherwise, the returned list may contain only those subjects that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Return</b>	<code>osid.repository.SubjectList</code>	a list of Subjects
<b>Errors</b>	<code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code>	unable to complete request authorization failure
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectSearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among Asset objects. The search query is constructed using the SubjectQuery interface.</p> <p><code>getSubjectsByQuery()</code> is the basic search method and returns a list of Subjects. A more advanced search may be performed with <code>getSubjectsBySearch()</code>. It accepts a SubjectSearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. <code>getSubjectsBySearch()</code> returns a SubjectSearchResults interface that can be used to access the resulting SubjectList or be used to perform a search within the result set through SubjectSearch.</p> <p>This session defines views that offer differing behaviors for searching.</p> <ul style="list-style-type: none"> <li>• federated repository view: searches include subjects in repositories of which this repository is an ancestor in the repository hierarchy</li> <li>• isolated repository view: searches are restricted to subjects in this repository</li> </ul> <p>Subjects may have a record query interface indicated by their respective record interface types. The record query interface is accessed via the SubjectQuery.</p>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canSearchSubjects</b>	
<b>Description</b>	Tests if this user can perform Subject searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include subjects in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getSubjectQuery</b>	
<b>Description</b>	Gets a subject query interface.	
<b>Return</b>	<a href="#">osid.repository.SubjectQuery</a>	the subject query interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getSubjectsByQuery	
<b>Description</b>	Gets a list of Subjects matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.repository.SubjectQuery</a>	subjectQuery the search query
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	the returned SubjectList
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	subjectQuery is null unable to complete request authorization failure subjectQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getSubjectSearch	
<b>Description</b>	Gets a subject search interface.	
<b>Return</b>	<a href="#">osid.repository.SubjectSearch</a>	the subject search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getSubjectSearchOrder	
<b>Description</b>	Gets a subject search order interface. The SubjectSearchOrder is supplied to a SubjectSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.repository.SubjectSearchOrder</a>	the subject search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getSubjectsBySearch	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.repository.SubjectQuery</a>	subjectQuery the search query
	<a href="#">osid.repository.SubjectSearch</a>	subjectSearch the search interface
<b>Return</b>	<a href="#">osid.repository.SubjectSearchResults</a>	the returned search results
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	subjectQuery or subjectSearch is null unable to complete request authorization failure subjectQuery or subjectSearch is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.SubjectAdminSession	
Implements	<a href="#">osid.OsidSession</a>	
	<p>This session creates and removes subjects. The data for create and update is provided via the SubjectForm.</p> <p>The view of the administrative methods defined in this session is determined by the provider. For an instance of this session where no repository has been specified, it may not be parallel to the SubjectLookupSession. For example, a default SubjectLookupSession may view the entire repository hierarchy while the default SubjectAdminSession uses an isolated Repository to create new Subjects or a specific repository to operate on a predetermined set of Subjects. Another scenario is a federated provider who does not wish to permit administrative operations for the federation unaware.</p> <p>Example update:</p> <pre> String newDescription = "hello, world!"; if (!session.canUpdateSubject(subjectId)) {     return "cannot update subject"; }  SubjectForm subjectForm = session.getSubjectFormForUpdate(subjectId); Metadata metadata = subjectForm.getDescriptionMetadata(); if (metadata.isReadOnly()) {     return "cannot change subject description"; }  if (metadata.getSyntax() != MetadtaSyntax.STRING) {     return "subject description is the wrong type"; }  if ((metadata.getMinStringSize() &gt; newDescription.length()) or     (metadata.getMaxStringSize() &lt; newDescription.length())) {     return "subject description too long or too short"; }  subjectForm.setDescription(newDescription); if (!form.isValid()) {     return form.getValidationMessage(); }  session.updateSubject(subjectId, subjectForm); return "subject updated"; </pre>	
Description		
Method	<a href="#">getRepositoryId</a>	
Description	Gets the Repository Id associated with this session.	
Return	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<a href="#">getRepository</a>	
Description	Gets the Repository associated with this session.	
Return	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Method	canCreateSubjects	
Description	Tests if this user can create Subjects. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Subject will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer create operations to an unauthorized user.	
Return	boolean	false if Subject creation is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canCreateSubjectWithRecordTypes	
Description	Tests if this user can create a single Subject using the desired record types. While RepositoryManager.getSubjectRecordTypes() can be used to examine which records are supported, this method tests which record(s) are required for creating a specific Subject. Providing an empty array tests if a Subject can be created with no records.	
Parameters	osid.type.Type[] subjectRecordTypes	array of types
Return	boolean	true if Subject creation using the specified record Types is supported, false otherwise
Errors	NULL_ARGUMENT	subjectRecordTypes is null
Compliance	mandatory	This method must be implemented.
Method	getSubjectFormForCreate	
Description	Gets the subject form for creating new subjects. A new form should be requested for each create transaction.	
Return	osid.repository.SubjectForm	the subject form
Compliance	mandatory	This method must be implemented.
Method	createSubject	
Description	Creates a new Subject.	
Parameters	osid.repository.SubjectForm subjectForm	the form for this Subject
Return	osid.repository.Subject	the new Subject
Errors	ALREADY_EXISTS	attempt at duplicating a property the underlying system is enforcing to be unique
	INVALID_ARGUMENT	one or more of the form elements is invalid
	NULL_ARGUMENT	subjectForm is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canUpdateSubjects	
Description	Tests if this user can update Subjects. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Subject will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer update operations to an unauthorized user.	
Return	boolean	false if Subject modification is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.

Method	canUpdateSubject		
Description	Tests if this user can update a specified Subject. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Subject will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an update operation to an unauthorized user for this Subject.		
Parameters	osid.id.Id	subjectId	the Id of the Subject
Return	boolean		false if subject modification is not authorized, true otherwise
Errors	<a href="#">NULL_ARGUMENT</a>		subjectId is null
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Provider Notes	If the subjectId is not found, then it is acceptable to return false to indicate the lack of an update available.		
Method	getSubjectFormForUpdate		
Description	Gets the subject form for updating an existing subject. A new subject form should be requested for each update transaction.		
Parameters	osid.id.Id	subjectId	the Id of the Subject
Return	<a href="#">osid.repository.SubjectForm</a>		the subject form
Errors	<a href="#">NOT_FOUND</a>		subjectId is not found
	<a href="#">NULL_ARGUMENT</a>		subjectId is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	updateSubject		
Description	Updates an existing subject.		
Parameters	osid.id.Id	subjectId	the Id of the Subject
	<a href="#">osid.repository.SubjectForm</a>		the form containing the elements to be updated
Errors	<a href="#">INVALID_ARGUMENT</a>		the form contains an invalid value
	<a href="#">NOT_FOUND</a>		subjectId is not found
	<a href="#">NULL_ARGUMENT</a>		subjectId or subjectForm is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
	<a href="#">UNSUPPORTED</a>		subjectForm is not supported
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	canDeleteSubjects		
Description	Tests if this user can delete Subjects. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Subject will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer delete operations to an unauthorized user.		
Return	boolean		false if Subject deletion is not authorized, true otherwise
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	canDeleteSubject		
Description	Tests if this user can delete a specified Subject. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Subject will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer an delete operation to an unauthorized user for this agent.		
Parameters	osid.id.Id	subjectId	the Id of the Subject
Return	boolean		false if deletion of this Subject is not authorized, true otherwise
Errors	<a href="#">NULL_ARGUMENT</a>		subjectId is null
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Provider Notes	If the subjectId is not found, then it is acceptable to return false to indicate the lack of an delete available.		

Method	deleteSubject				
<b>Description</b>	Deletes a Subject.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of the Subject to remove		
<b>Errors</b>	NOT_FOUND		subjectId not found		
	NULL_ARGUMENT		subjectId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	addIdToSubject				
<b>Description</b>	Adds an Id to a Subject for the purpose of creating compatibility. The primary Id of the Subject is determined by the provider. The new Id performs as an alias to the primary Id.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of a Subject		
	osid.id.Id	aliasId	the alias Id		
<b>Errors</b>	ALREADY_EXISTS		aliasId is already assigned		
	NOT_FOUND		subjectId not found		
	NULL_ARGUMENT		subjectId or aliasId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.SubjectNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on adds/changes to Subject objects in this Repository. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.</p> <p>The two views defined in this session correspond to the views in the SubjectLookupSession.</p>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canRegisterForSubjectNotifications</b>	
<b>Description</b>	Tests if this user can register for Subject notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include subjects in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts notifications to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>registerForNewSubjects</b>	
<b>Description</b>	Register for notifications of new subjects. SubjectReceiver.newSubject() is invoked when a new Subject is appears in this repository.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewSubjectAncestors</b>	
<b>Description</b>	Registers for notification if an ancestor is added to the specified subject in the subject hierarchy. SubjectReceiver.newAncestorSubject() is invoked when the specified subject experiences an addition in ancestry.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId
		the Id of the subject to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a>	a subject was not found identified by the given Id
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>registerForNewSubjectDescendants</b>				
<b>Description</b>	Registers for notification if a descendant is added to the specified subject in the subject hierarchy. SubjectReceiver.newDescendantSubject() is invoked when the specified subject experiences an addition in descendants.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of the subject to monitor		
<b>Errors</b>	NOT_FOUND		a subject was not found identified by the given Id		
	NULL_ARGUMENT		subjectId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForChangedSubjects</b>				
<b>Description</b>	Registers for notification of updated subjects. SubjectReceiver.changedSubject() is invoked when a subject in this repository is changed.				
<b>Errors</b>	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForChangedSubject</b>				
<b>Description</b>	Registers for notification of an updated subject. SubjectReceiver.changedSubject() is invoked when the specified subject in this repository is changed.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of the Subject to monitor		
<b>Errors</b>	NOT_FOUND		a subject was not found in this repository identified by the given Id		
	NULL_ARGUMENT		subjectId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForDeletedSubjects</b>				
<b>Description</b>	Registers for notification of deleted subjects. SubjectReceiver.deletedSubject() is invoked when a subject is deleted or removed from this repository.				
<b>Errors</b>	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForDeletedSubject</b>				
<b>Description</b>	Registers for notification of a deleted subject. SubjectReceiver.deletedSubject() is invoked when the specified subject is deleted or removed from this repository.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of the Subject to monitor		
<b>Errors</b>	NOT_FOUND		a subject was not found identified by the given Id		
	NULL_ARGUMENT		subjectId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			
Method	<b>registerForDeletedSubjectAncestors</b>				
<b>Description</b>	Registers for notification if an ancestor is removed from the specified subject. SubjectReceiver.deletedAncestorSubject() is invoked when the specified subject experiences a removal in ancestry.				
<b>Parameters</b>	osid.id.Id	subjectId	the Id of the subject to monitor		
<b>Errors</b>	NOT_FOUND		a subject was not found identified by the given Id		
	NULL_ARGUMENT		subjectId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
<b>Compliance</b>	mandatory	This method must be implemented.			

Method	<b>registerForDeletedSubjectDescendants</b>	
<b>Description</b>	Registers for notification if a descendant is removed from the specified subject. SubjectReceiver.deletedAncestorSubject() is invoked when the specified subject experiences a removal in one of its descendants.	
<b>Parameters</b>	<code>osid.id.Id</code>	subjectId the Id of the subject to monitor
<b>Errors</b>	<code>NOT_FOUND</code>	a subject was not found identified by the given Id
	<code>NULL_ARGUMENT</code>	subjectId is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authorization failure
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectHierarchySession</b>	
<b>Implements</b>	<a href="#">osid.hierarchy.HierarchyTraversalSession</a>	
<b>Description</b>	<p>This session defines methods for traversing a hierarchy of Subject objects. Each subject in the hierarchy is a unique Subject. The hierarchy may be traversed recursively to establish the tree structure through <code>getParents()</code> and <code>getChildren()</code>. To relate these IDs to another OSID, <code>getAncestors()</code> and <code>getDescendants()</code> can be used for retrievals that can be used for bulk lookups in other OSIDs. Any Subject available in the Repository OSID is known to this hierarchy but does not appear in the hierarchy traversal until added as a root node or a child of another node.</p>	
<b>Description</b>	<p>A user may not be authorized to traverse the entire hierarchy. Parts of the hierarchy may be made invisible through omission from the returns of <code>getParents()</code> or <code>getChildren()</code> in lieu of a <code>PERMISSION_DENIED</code> error that may disrupt the traversal through authorized pathways.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: subjects may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeSubjectView</b>	
<b>Description</b>	<p>The returns from the subject methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.</p>	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenarySubjectView</b>	
<b>Description</b>	<p>A complete view of the Subjects returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.</p>	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getRootSubjects</b>	
<b>Description</b>	<p>Gets the root subjects in the subject hierarchy. A node with no parents is an orphan. While all subject IDs are known to the hierarchy, an orphan does not appear in the hierarchy unless explicitly added as a root node or child of another node.</p>	
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	the root subjects
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getParentSubjects</b>	
<b>Description</b>	<p>Gets the parents of the given subject.</p>	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	the parents of the subject
<b>Errors</b>	<a href="#">NOT_FOUND</a>	subjectId not found
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getAncestorSubjects		
Description	Gets the ancestors of the given subject.		
Parameters	osid.id.Id	subjectId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getParentSubjects().
Return	osid.repository.SubjectList		the ancestors of the subject
Errors	NOT_FOUND		subjectId not found
	NULL_ARGUMENT		subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getChildSubjects		
Description	Gets the children of the given subject.		
Parameters	osid.id.Id	subjectId	the Id to query
Return	osid.repository.SubjectList		the children of the subject
Errors	NOT_FOUND		subjectId not found
	NULL_ARGUMENT		subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getDescendantSubjects		
Description	Gets the descendants of the given subject.		
Parameters	osid.id.Id	subjectId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getChildSubjects().
Return	osid.repository.SubjectList		the descendants of the subject
Errors	NOT_FOUND		subjectId not found
	NULL_ARGUMENT		subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectHierarchyDesignSession</b>
<b>Implements</b>	<a href="#">osid.hierarchy.HierarchyDesignSession</a>
<b>Description</b>	This session defines methods for managing a hierarchy of Subjects. Each node in the hierarchy is a unique Subject.

<b>Interface</b>	<b>osid.repository.SubjectRepositorySession</b>									
<b>Implements</b>	<a href="#">osid.OsidSession</a>									
<b>Description</b>	<p>This session provides methods to retrieve Subject to Repository mappings. A Subject may appear in multiple Repository objects. Each Repository may have its own authorizations governing who is allowed to look at it.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>									
<b>Method</b>	<b>useComparativeRepositoryView</b>									
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.									
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.								
<b>Method</b>	<b>usePlenaryCatalogView</b>									
<b>Description</b>	A complete view of the Subject and Repository returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.									
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.								
<b>Method</b>	<b>canLookupSubjectRepositoryMappings</b>									
<b>Description</b>	Tests if this user can perform lookups of subject/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.									
<b>Return</b>	<a href="#">boolean</a>	false if looking up mappings is not authorized, true otherwise								
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								
<b>Method</b>	<b>getSubjectIdsByRepository</b>									
<b>Description</b>	Gets the list of Subject Ids associated with a Repository.									
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId								
<b>Return</b>	<a href="#">osid.id.IdList</a>	list of related subject Ids								
<b>Errors</b>	<table> <tr> <td><a href="#">NOT_FOUND</a></td> <td>repositoryId is not found</td> </tr> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>repositoryId is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authorization failure</td> </tr> </table>		<a href="#">NOT_FOUND</a>	repositoryId is not found	<a href="#">NULL_ARGUMENT</a>	repositoryId is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure
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<a href="#">PERMISSION_DENIED</a>	authorization failure									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								
<b>Method</b>	<b>getSubjectsByRepository</b>									
<b>Description</b>	Gets the list of Subjects associated with a Repository.									
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId								
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	list of related subjects								
<b>Errors</b>	<table> <tr> <td><a href="#">NOT_FOUND</a></td> <td>repositoryId is not found</td> </tr> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>repositoryId is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authorization failure</td> </tr> </table>		<a href="#">NOT_FOUND</a>	repositoryId is not found	<a href="#">NULL_ARGUMENT</a>	repositoryId is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure
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<a href="#">OPERATION_FAILED</a>	unable to complete request									
<a href="#">PERMISSION_DENIED</a>	authorization failure									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								

Method	getSubjectIdsByRepositories	
<b>Description</b>	Gets the list of Subject Ids corresponding to a list of Repository objects.	
<b>Parameters</b>	osid.id.IdList	repositoryIdList
<b>Return</b>	list of repository Ids	
<b>Errors</b>	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getSubjectsByRepositories	
<b>Description</b>	Gets the list of Subjects corresponding to a list of Repository objects.	
<b>Parameters</b>	osid.id.IdList	repositoryIdList
<b>Return</b>	list of repository Ids	
<b>Errors</b>	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getRepositoryIdsBySubject	
<b>Description</b>	Gets the Repository Ids mapped to a Subject.	
<b>Parameters</b>	osid.id.Id	subjectId
<b>Return</b>	Id of a Subject	
<b>Errors</b>	NOT_FOUND	subjectId is not found
	NULL_ARGUMENT	subjectId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getRepositoriesBySubject	
<b>Description</b>	Gets the Repository objects mapped to a Subject.	
<b>Parameters</b>	osid.id.Id	subjectId
<b>Return</b>	Id of a Subject	
<b>Errors</b>	NOT_FOUND	subjectId is not found
	NULL_ARGUMENT	subjectId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectRepositoryAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	<p>This session provides methods to re-assign Subjects to Repository objects A Subject may appear in multiple Repository objects and removing the last reference to a Subject is the equivalent of deleting it. Each Repository may have its own authorizations governing who is allowed to operate on it.</p> <p>Moving or adding a reference of a Subject to another Repository is not a copy operation (eg: does not change its Id).</p>				
<b>Method</b>	<b>canAssignSubjects</b>				
<b>Description</b>	Tests if this user can alter subject/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known mapping methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.				
<b>Return</b>	<a href="#">boolean</a>	false if mapping is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>assignSubjectToRepository</b>				
<b>Description</b>	Adds an existing Subject to a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		subjectId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		subjectId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>unassignSubjectFromRepository</b>				
<b>Description</b>	Removes a Subject from a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		subjectId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		subjectId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.RepositoryLookupSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for retrieving Repository objects. The Repository represents a collection of Assets.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul> <p>Generally, the comparative view should be used for most applications as it permits operation even if there is data that cannot be accessed. For example, a browsing application may only need to examine the Repositories it can access, without breaking execution. However, an administrative application may require all Repository elements to be available.</p> <p>Repositories may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the Repository.</p>	
<b>Method</b>	<b>canLookupRepositories</b>	
<b>Description</b>	Tests if this user can perform Repository lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useComparativeRepositoryView</b>	
<b>Description</b>	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryRepositoryView</b>	
<b>Description</b>	A complete view of the Repository returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Repository may have a different Id than requested, such as the case where a duplicate Id was assigned to a Repository and retained for compatibility.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the repository
<b>Errors</b>	<a href="#">NOT_FOUND</a>	repositoryId not found
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.

Method	getRepositoriesByIds	
Description	Gets a RepositoryList corresponding to the given IdList. In plenary mode, the returned list contains all of the repositories specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Repositories may be omitted from the list and may present the elements in any order including returning a unique set.	
Parameters	osid.id.IdList	repositoryIdList the list of Ids to retrieve
Return	osid.repository.RepositoryList	the returned Repository list
Errors	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoriesByGenusType	
Description	Gets a RepositoryList corresponding to the given repository genus Type which does not include repositories of types derived from the specified Type. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	repositoryGenusType a repository genus type
Return	osid.repository.RepositoryList	the returned Repository list
Errors	NULL_ARGUMENT	repositoryGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoriesByParentGenusType	
Description	Gets a RepositoryList corresponding to the given repository genus Type and include any additional repositories with genus types derived from the specified Type. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	repositoryGenusType a repository genus type
Return	osid.repository.RepositoryList	the returned Repository list
Errors	NULL_ARGUMENT	repositoryGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoriesByRecordType	
Description	Gets a RepositoryList containing the given repository record Type. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
Parameters	osid.type.Type	repositoryRecordType a repository record type
Return	osid.repository.RepositoryList	the returned Repository list
Errors	NULL_ARGUMENT	repositoryRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	getRepositories	
Description	Gets all Repositories. In plenary mode, the returned list contains all known repositories or an error results. Otherwise, the returned list may contain only those repositories that are accessible through this session. In both cases, the order of the set is not specified.	
Return	<a href="#">osid.repository.RepositoryList</a>	a list of Repositories
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositorySearchSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session provides methods for searching among Repository objects. The search query is constructed using the RepositoryQuery interface.</p> <p>getRepositoriesByQuery() is the basic search method and returns a list of Repository objects. A more advanced search may be performed with getRepositoriesBySearch(). It accepts a RepositorySearch interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getRepositoriesBySearch() returns a RepositorySearchResults interface that can be used to access the resulting RepositoryList or be used to perform a search within the result set through RepositorySearch.</p> <p>Repositories may have a record query interface indicated by their respective record types. The record query interface is accessed via the RepositoryQuery.</p>	
<b>Method</b>	<b>canSearchRepositories</b>	
<b>Description</b>	Tests if this user can perform Repository searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositoryQuery</b>	
<b>Description</b>	Gets a repository query interface.	
<b>Return</b>	<a href="#">osid.repository.RepositoryQuery</a>	the repository query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositoriesByQuery</b>	
<b>Description</b>	Gets a list of Repositories matching the given search interface.	
<b>Parameters</b>	<a href="#">osid.repository.RepositoryQuery</a>	repositoryQuery
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the returned RepositoryList
<b>Errors</b>	NULL_ARGUMENT	repositoryQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	repositoryQuery is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositorySearch</b>	
<b>Description</b>	Gets a repository search interface.	
<b>Return</b>	<a href="#">osid.repository.RepositorySearch</a>	the repository search interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositorySearchOrder</b>	
<b>Description</b>	Gets a repository search order interface. The RepositorySearchOrder is supplied to a RepositorySearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.repository.RepositorySearchOrder</a>	the repository search order interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getRepositoriesBySearch	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.repository.RepositoryQuery</a>	repositoryQuery the search query
	<a href="#">osid.repository.RepositorySearch</a>	repositorySearch the search interface
<b>Return</b>	<a href="#">osid.repository.RepositorySearchResults</a> the search results	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> repositoryQuery or repositorySearch is null	
	<a href="#">OPERATION_FAILED</a> unable to complete request	
	<a href="#">PERMISSION_DENIED</a> authorization failure	
	<a href="#">UNSUPPORTED</a> repositoryQuery or repositorySearch is not of this service	
<b>Compliance</b>	mandatory This method must be implemented.	

<b>Interface</b>	<b>osid.repository.RepositoryAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session creates and removes repositories. The data for create and update is provided by the consumer via the form object.	
<b>Method</b>	<b>canCreateRepositories</b>	
<b>Description</b>	Tests if this user can create Repositories. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Repository will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer create operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if Repository creation is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateRepositoryWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Repository using the desired record types. While RepositoryManager.getRepositoryRecordTypes() can be used to examine which records are supported, this method tests which record(s) are required for creating a specific Repository. Providing an empty array tests if a Repository can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[]</a>	repositoryRecordTypes array of types
<b>Return</b>	<a href="#">boolean</a>	true if Repository creation using the specified Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	repositoryRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositoryFormForCreate</b>	
<b>Description</b>	Gets the repository form for creating new repositories. A new form should be requested for each create transaction.	
<b>Return</b>	<a href="#">osid.repository.RepositoryForm</a>	the repository form
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>createRepository</b>	
<b>Description</b>	Creates a new Repository.	
<b>Parameters</b>	<a href="#">osid.repository.RepositoryForm</a>	repositoryForm the form for this Repository
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the new Repository
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a> <a href="#">INVALID_ARGUMENT</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	attempt at duplicating a property the underlying system is enforcing to be unique one or more of the form elements is invalid repositoryForm is null unable to complete request authorization failure repositoryForm is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canUpdateRepositories</b>	
<b>Description</b>	Tests if this user can update Repositories. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Repository will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if Repository modification is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canUpdateRepository	
Description	Tests if this user can update a specified Repository. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Repository will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.	
Parameters	osid.id.Id   repositoryId	the Id of the Repository
Return	boolean	false if repository modification is not authorized, true otherwise
Errors	NULL_ARGUMENT	repositoryId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the repositoryId is not found, then it is acceptable to return false to indicate the lack of an update available.	
Method	getRepositoryFormForUpdate	
Description	Gets the repository form for updating an existing repository. A new repository form should be requested for each update transaction.	
Parameters	osid.id.Id   repositoryId	the Id of the Repository
Return	osid.repository.RepositoryForm	the repository form
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED	repositoryId is not found repositoryId is null unable to complete request
Compliance	mandatory	This method must be implemented.
Method	updateRepository	
Description	Updates an existing repository.	
Parameters	osid.id.Id   repositoryId osid.repository.RepositoryForm   repositoryForm	the Id of the Repository the form containing the elements to be updated
Errors	INVALID_ARGUMENT NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	the form contains an invalid value repositoryId is not found repositoryId or repositoryForm is null unable to complete request authorization failure repositoryForm is not supported
Compliance	mandatory	This method must be implemented.
Method	canDeleteRepositories	
Description	Tests if this user can delete Repositories. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Repository will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.	
Return	boolean	false if Repository deletion is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canDeleteRepository	
Description	Tests if this user can delete a specified Repository. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Repository will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.	
Parameters	osid.id.Id   repositoryId	the Id of the Repository
Return	boolean	false if deletion of this Repository is not authorized, true otherwise
Errors	NULL_ARGUMENT	repositoryId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the repositoryId is not found, then it is acceptable to return false to indicate the lack of an delete available.	

Method	<b>deleteRepository</b>				
Description	Deletes a Repository.				
Parameters	osid.id.Id	repositoryId	the Id of the Repository to remove		
Errors	NOT_FOUND		repositoryId not found		
	NULL_ARGUMENT		repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	<b>addIdToRepository</b>				
Description	Adds an Id to a Repository for the purpose of creating compatibility. The primary Id of the Repository is determined by the provider. The new Id performs as an alias to the primary Id.				
Parameters	osid.id.Id	repositoryId	the Id of a Repository		
	osid.id.Id	aliasId	the alias Id		
Errors	ALREADY_EXISTS		aliasId is already assigned		
	NOT_FOUND		repositoryId not found		
	NULL_ARGUMENT		repositoryId or aliasId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.RepositoryNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session defines methods to receive notifications on adds/changes to Repository objects. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.	
<b>Method</b>	<b>canRegisterForRepositoryNotifications</b>	
<b>Description</b>	Tests if this user can register for Repository notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewRepositories</b>	
<b>Description</b>	Register for notifications of new repositories. RepositoryReceiver.newRepository() is invoked when a new Repository is created.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewRepositoryAncestors</b>	
<b>Description</b>	Registers for notification if an ancestor is added to the specified repository in the repository hierarchy. RepositoryReceiver.newRepositoryAncestor() is invoked when the specified repository experiences an addition in ancestry.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the repository to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a>	a repository was not found identified by the given Id
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForNewRepositoryDescendants</b>	
<b>Description</b>	Registers for notification if a descendant is added to the specified repository in the repository hierarchy. RepositoryReceiver.newRepositoryDescendant() is invoked when the specified repository experiences an addition in descendants.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the repository to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a>	a repository was not found identified by the given Id
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>registerForChangedRepositories</b>	
<b>Description</b>	Registers for notification of updated repositories. RepositoryReceiver.changedRepository() is invoked when a repository is changed.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>registerForChangedRepository</b>	
<b>Description</b>	Registers for notification of an updated repository. RepositoryReceiver.changedRepository() is invoked when the specified repository is changed.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the Repository to monitor
<b>Errors</b>	NOT_FOUND	a repository was not found identified by the given Id
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedRepositories</b>	
<b>Description</b>	Registers for notification of deleted repositories. RepositoryReceiver.deletedRepository() is invoked when a repository is deleted.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedRepository</b>	
<b>Description</b>	Registers for notification of a deleted repository. RepositoryReceiver.deletedRepository() is invoked when the specified repository is deleted.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the Repository to monitor
<b>Errors</b>	NOT_FOUND	a repository was not found identified by the given Id
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedRepositoryAncestors</b>	
<b>Description</b>	Registers for notification if an ancestor is removed from the specified repository in the repository hierarchy. RepositoryReceiver.deletedRepositoryAncestor() is invoked when the specified repository experiences a removal of an ancestor.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the repository to monitor
<b>Errors</b>	NOT_FOUND	a repository was not found identified by the given Id
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>registerForDeletedRepositoryDescendants</b>	
<b>Description</b>	Registers for notification if a descendant is removed from the specified repository in the repository hierarchy. RepositoryReceiver.deletedRepositoryDescednант() is invoked when the specified repository experiences a removal of one of its descendants.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId the Id of the repository to monitor
<b>Errors</b>	NOT_FOUND	a repository was not found identified by the given Id
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryHierarchySession</b>	
<b>Implements</b>	<a href="#">osid.hierarchy.HierarchyTraversalSession</a>	
<b>Description</b>	<p>This session defines methods for traversing a hierarchy of Repository objects. Each node in the hierarchy is a unique Repository. The hierarchy may be traversed recursively to establish the tree structure through <code>getParents()</code> and <code>getChildren()</code>. To relate these Ids to another OSID, <code>getAncestors()</code> and <code>getDescendants()</code> can be used for retrievals that can be used for bulk lookups in other OSIDs. Any Repository available in the Repository OSID is known to this hierarchy but does not appear in the hierarchy traversal until added as a root node or a child of another node.</p>	
<b>Description</b>	<p>A user may not be authorized to traverse the entire hierarchy. Parts of the hierarchy may be made invisible through omission from the returns of <code>getParents()</code> or <code>getChildren()</code> in lieu of a <code>PERMISSION_DENIED</code> error that may disrupt the traversal through authorized pathways.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: repository elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeRepositoryView</b>	
<b>Description</b>	The returns from the repository methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryRepositoryView</b>	
<b>Description</b>	A complete view of the Repository returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getRootRepositories</b>	
<b>Description</b>	Gets the root repositories in the repository hierarchy. A node with no parents is an orphan. While all repository Ids are known to the hierarchy, an orphan does not appear in the hierarchy unless explicitly added as a root node or child of another node.	
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the root repositories
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getParentRepositories</b>	
<b>Description</b>	Gets the parents of the given repository.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId
	the Id to query	
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the parents of the repository
<b>Errors</b>	<a href="#">NOT_FOUND</a>	repositoryId not found
	<a href="#">NULL_ARGUMENT</a>	repositoryId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getAncestorRepositories		
Description	Gets the ancestors of the given repository.		
Parameters	osid.id.Id	repositoryId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getParentRepositories().
Return	<a href="#">osid.repository.RepositoryList</a>		the ancestors of the repository
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		repositoryId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getChildRepositories		
Description	Gets the children of the given repository.		
Parameters	osid.id.Id	repositoryId	the Id to query
Return	<a href="#">osid.repository.RepositoryList</a>		the children of the repository
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		repositoryId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getDescendantRepositories		
Description	Gets the descendants of the given repository.		
Parameters	osid.id.Id	repositoryId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getChildRepositories().
Return	<a href="#">osid.repository.RepositoryList</a>		the descendants of the repository
Errors	NOT_FOUND		repositoryId not found
	NULL_ARGUMENT		repositoryId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	<b>osid.repository.RepositoryHierarchyDesignSession</b>
Implements	<a href="#">osid.hierarchy.HierarchyDesignSession</a>
Description	This session defines methods for managing a hierarchy of Repository objects. Each node in the hierarchy is a unique Repository.

Interface	osid.repository.CompositionLookupSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods for retrieving Composition objects. The Composition represents a collection of Assets.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete and ordered result set or is an error condition</li> <li>• isolated repository view: All lookup methods in this session operate, retrieve and pertain to compositions defined explicitly in the current repository. Using an isolated view is useful for managing compositions with the <code>CompositionAdminSession</code>.</li> <li>• federated repository view: All composition methods in this session operate, retrieve and pertain to all compositions defined in this repository and any other compositions implicitly available in this repository through repository inheritance.</li> </ul> <p>Generally, the comparative view should be used for most applications as it permits operation even if there is data that cannot be accessed.. For example, a browsing application may only need to examine the Composition it can access, without breaking execution. However, an administrative application may require a complete set of Composition objects to be returned.</p> <p>Compositions may have an additional records indicated by their respective record types. The record may not be accessed through a cast of the <code>Composition</code>.</p>	
Method	<b>getRepositoryId</b>	
Description	Gets the Repository Id associated with this session.	
Return	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getRepository</b>	
Description	Gets the Repository associated with this session.	
Return	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>canLookupCompositions</b>	
Description	Tests if this user can perform Composition lookups. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
Return	<a href="#">boolean</a>	false if lookup methods are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>useComparativeCompositionView</b>	
Description	The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>usePlenaryCompositionView</b>	
Description	A complete view of the Composition returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.

<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for methods in this session. A federated view will include compositions in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>getComposition</b>	
<b>Description</b>	Gets the Composition specified by its Id. In plenary mode, the exact Id is found or a NOT_FOUND results. Otherwise, the returned Composition may have a different Id than requested, such as the case where a duplicate Id was assigned to a Composition and retained for compatibility.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId
<b>Return</b>	<a href="#">osid.repository.Composition</a>	
<b>Errors</b>	<a href="#">NOT_FOUND</a>	compositionId not found
	<a href="#">NULL_ARGUMENT</a>	compositionId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method is must be implemented.
<b>Method</b>	<b>getCompositionsByIds</b>	
<b>Description</b>	Gets a CompositionList corresponding to the given IdList. In plenary mode, the returned list contains all of the compositions specified in the Id list, in the order of the list, including duplicates, or an error results if an Id in the supplied list is not found or inaccessible. Otherwise, inaccessible Compositions may be omitted from the list and may present the elements in any order including returning a unique set.	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	compositionIdList
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	
<b>Errors</b>	<a href="#">NOT_FOUND</a>	an Id was not found
	<a href="#">NULL_ARGUMENT</a>	compositionIdList is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getCompositionsByGenusType</b>	
<b>Description</b>	Gets a CompositionList corresponding to the given composition genus Type which does not include compositions of types derived from the specified Type. In plenary mode, the returned list contains all known compositions or an error results. Otherwise, the returned list may contain only those compositions that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionGenusType
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	compositionGenusType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

Method	<b>getCompositionsByParentGenusType</b>	
<b>Description</b>	Gets a CompositionList corresponding to the given composition genus Type and include any additional compositions with genus types derived from the specified Type. In plenary mode, the returned list contains all known compositions or an error results. Otherwise, the returned list may contain only those compositions that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>   compositionGenusType	a composition genus type
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	the returned Composition list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	compositionGenusType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositionsByRecordType</b>	
<b>Description</b>	Gets a CompositionList containing the given composition record Type. In plenary mode, the returned list contains all known compositions or an error results. Otherwise, the returned list may contain only those compositions that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>   compositionRecordType	a composition record type
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	the returned Composition list
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	compositionRecordType is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositions</b>	
<b>Description</b>	Gets all Compositions. In plenary mode, the returned list contains all known compositions or an error results. Otherwise, the returned list may contain only those compositions that are accessible through this session. In both cases, the order of the set is not specified.	
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	a list of Compositions
<b>Errors</b>	<a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.CompositionSearchSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods for searching among Composition objects. The search query is constructed using the <code>CompositionQuery</code> interface.</p> <p><code>getCompositionsByQuery()</code> is the basic search method and returns a list of Compositions. A more advanced search may be performed with <code>getCompositionsBySearch()</code>. It accepts an <code>Composition</code> interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. <code>getCompositionsBySearch()</code> returns an <code>CompositionSearchResults</code> interface that can be used to access the resulting Composition or be used to perform a search within the result set through <code>CompositionSearch</code>.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• federated repository view: searches include compositions in repositories of which this repository is an ancestor in the repository hierarchy</li> <li>• isolated repository view: searches are restricted to subjects in this repository</li> </ul> <p>Compositions may have a record query interface indicated by their respective record interface types. The record query interface is accessed via the <code>CompositionQuery</code>.</p>	
Method	<b>getRepositoryId</b>	
Description	Gets the Repository Id associated with this session.	
Return	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getRepository</b>	
Description	Gets the Repository associated with this session.	
Return	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>canSearchCompositions</b>	
Description	Tests if this user can perform Composition searches. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a <code>PERMISSION_DENIED</code> . This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
Return	<a href="#">boolean</a>	false if search methods are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>useFederatedRepositoryView</b>	
Description	Federates the view for methods in this session. A federated view will include compositions in repositories which are children of this repository in the repository hierarchy.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>useIsolatedRepositoryView</b>	
Description	Isolates the view for methods in this session. An isolated view restricts lookups to this repository only.	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.

<b>Method</b>	<b>getCompositionQuery</b>	
<b>Description</b>	Gets a composition query interface.	
<b>Return</b>	<a href="#">osid.repository.CompositionQuery</a>	the composition query interface
<b>Compliance</b>	<b>mandatory</b>	
<b>Method</b>	<b>getCompositionsByQuery</b>	
<b>Description</b>	Gets a list of Compositions matching the given query interface.	
<b>Parameters</b>	<a href="#">osid.repository.CompositionQuery</a>	compositionQuery
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	the returned CompositionList
<b>Errors</b>	NULL_ARGUMENT	compositionQuery is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	compositionQuery is not of this service
<b>Compliance</b>	<b>mandatory</b>	
<b>Method</b>	<b>getCompositionSearch</b>	
<b>Description</b>	Gets a composition search interface.	
<b>Return</b>	<a href="#">osid.repository.CompositionSearch</a>	the composition search interface
<b>Compliance</b>	<b>mandatory</b>	
<b>Method</b>	<b>getCompositionSearchOrder</b>	
<b>Description</b>	Gets a composition search order interface. The CompositionSearchOrder is supplied to an CompositionSearch to specify the ordering of results.	
<b>Return</b>	<a href="#">osid.repository.CompositionSearchOrder</a>	the composition search order interface
<b>Compliance</b>	<b>mandatory</b>	
<b>Method</b>	<b>getCompositionsBySearch</b>	
<b>Description</b>	Gets the search results matching the given search query using the given search.	
<b>Parameters</b>	<a href="#">osid.repository.CompositionQuery</a>	compositionQuery
	<a href="#">osid.repository.CompositionSearch</a>	compositionSearch
<b>Return</b>	<a href="#">osid.repository.CompositionSearchResults</a>	the search results
<b>Errors</b>	NULL_ARGUMENT	compositionQuery or compositionSearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	compositionQuery or compositionSearch is not of this service
<b>Compliance</b>	<b>mandatory</b>	

<b>Interface</b>	<b>osid.repository.CompositionAdminSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	This session creates and removes compositions. The data for create and update is provided by the consumer via the form object.	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateCompositions</b>	
<b>Description</b>	Tests if this user can create Compositions. A return of true does not guarantee successful authorization. A return of false indicates that it is known creating a Composition will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer create operations to unauthorized users.	
<b>Return</b>	<a href="#">boolean</a>	false if Composition creation is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canCreateCompositionWithRecordTypes</b>	
<b>Description</b>	Tests if this user can create a single Composition using the desired record interface types. While RepositoryManager.getCompositionRecordTypes() can be used to examine which record interfaces are supported, this method tests which record(s) are required for creating a specific Composition. Providing an empty array tests if a Composition can be created with no records.	
<b>Parameters</b>	<a href="#">osid.type.Type[]</a> compositionRecordTypes	array of types
<b>Return</b>	<a href="#">boolean</a>	true if Composition creation using the specified Types is supported, false otherwise
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	compositionRecordTypes is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getCompositionFormForCreate</b>	
<b>Description</b>	Gets the composition form for creating new compositions. A new form should be requested for each create transaction.	
<b>Return</b>	<a href="#">osid.repository.CompositionForm</a>	the composition form interface
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>createComposition</b>	
<b>Description</b>	Creates a new Composition.	
<b>Parameters</b>	<a href="#">osid.repository.CompositionForm[]</a> compositionForms	the forms for this Composition
<b>Return</b>	<a href="#">osid.repository.Composition</a>	the new Composition
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a> <a href="#">INVALID_ARGUMENT</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	attempt at duplicating a property the underlying system is enforcing to be unique
		one or more of the form elements is invalid
		compositionForms is null
		unable to complete request
		authorization failure
		a compositionForm is not supported
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canUpdateCompositions	
Description	Tests if this user can update Compositions. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating a Composition will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.	
Return	boolean	false if Composition modification is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canUpdateComposition	
Description	Tests if this user can update a specified Composition. A return of true does not guarantee successful authorization. A return of false indicates that it is known updating the Composition will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer update operations to unauthorized users.	
Parameters	osid.id.Id compositionId	the Id of the Composition
Return	boolean	false if repository modification is not authorized, true otherwise
Errors	NULL_ARGUMENT	compositionId is null
Compliance	mandatory	This method must be implemented.
Provider Notes	If the compositionId is not found, then it is acceptable to return false to indicate the lack of an update available.	
Method	getCompositionFormForUpdate	
Description	Gets the composition form for updating an existing composition. A new composition form should be requested for each update transaction.	
Parameters	osid.id.Id compositionId	the Id of the Composition
Return	osid.repository.CompositionForm	the composition form
Errors	NOT_FOUND	compositionId is not found
	NULL_ARGUMENT	compositionId is null
	OPERATION_FAILED	unable to complete request
Compliance	mandatory	This method must be implemented.
Method	updateComposition	
Description	Updates an existing composition.	
Parameters	osid.id.Id compositionId osid.repository.CompositionForm compositionForm	the Id of the Composition the form containing the elements to be updated
Errors	INVALID_ARGUMENT NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	the form contains an invalid value compositionId is not found compositionId or compositionForm is null unable to complete request authorization failure compositionForm is not supported
Compliance	mandatory	This method must be implemented.
Method	canDeleteCompositions	
Description	Tests if this user can delete Compositions. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting a Composition will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.	
Return	boolean	false if Composition deletion is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.

Method	canDeleteComposition		
Description	Tests if this user can delete a specified Composition. A return of true does not guarantee successful authorization. A return of false indicates that it is known deleting the Composition will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer delete operations to unauthorized users.		
Parameters	osid.id.Id	compositionForm	the Id of the Composition
Return	boolean		false if deletion of this Composition is not authorized, true otherwise
Errors	NULL_ARGUMENT		compositionId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	If the compositionId is not found, then it is acceptable to return false to indicate the lack of an delete available.		
Method	deleteComposition		
Description	Deletes a Composition.		
Parameters	osid.id.Id	compositionId	the Id of the Composition to remove
Errors	NOT_FOUND		compositionId not found
	NULL_ARGUMENT		compositionId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	addIdToComposition		
Description	Adds an Id to a Composition for the purpose of creating compatibility. The primary Id of the Composition is determined by the provider. The new Id performs as an alias to the primary Id.		
Parameters	osid.id.Id	compositionId	the Id of a Composition
	osid.id.Id	aliasId	the alias Id
Errors	ALREADY_EXISTS		aliasId is already assigned
	NOT_FOUND		compositionId not found
	NULL_ARGUMENT		compositionId or aliasId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionNotificationSession</b>	
<b>Implements</b>	<a href="#">osid.OsidSession</a>	
<b>Description</b>	<p>This session defines methods to receive notifications on adds/changes to Composition objects in this Repository. This session is intended for consumers needing to synchronize their state with this service without the use of polling. Notifications are cancelled when this session is closed.</p> <p>Two view are defined in this session:</p> <ul style="list-style-type: none"> <li>• federateRepositoryView: includes notifications of compositions in repositories of which this repository is an ancestor in the repository hierarchy</li> <li>• isolateRepositoryView: restricts notifications to this Repository only</li> </ul>	
<b>Method</b>	<b>getRepositoryId</b>	
<b>Description</b>	Gets the Repository Id associated with this session.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the Repository Id associated with this session
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepository</b>	
<b>Description</b>	Gets the Repository associated with this session.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the Repository associated with this session
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>canRegisterForCompositionNotifications</b>	
<b>Description</b>	Tests if this user can register for Composition notifications. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer notification operations.	
<b>Return</b>	<a href="#">boolean</a>	false if notification methods are not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>useFederatedRepositoryView</b>	
<b>Description</b>	Federates the view for composition methods in this session. A federated view will include compositions in repositories which are children of this repository in the repository hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedRepositoryView</b>	
<b>Description</b>	Isolates the view for composition methods in this session. An isolated view restricts notifications to this repository only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useFederatedCompositionView</b>	
<b>Description</b>	Federates the view for asset methods in this session. A federated view will include assets in compositions of which are children of the specified composition in the composition hierarchy.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>useIsolatedCompositionView</b>	
<b>Description</b>	Isolates the view for asset methods in this session. An isolated view restricts notifications to the specified composition only.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>registerForNewCompositions</b>	
<b>Description</b>	Register for notifications of new composition. CompositionReceiver.newComposition() is invoked when a new Composition is created.	
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	registerForAssignedAssetsInComposition				
Description	Registers for notification if an asset is added to a specified composition. CompositionReceiver.newCompositionAsset() is invoked when an asset is added to the specified composition. In the federated composition view, notifications include additions to child compositions.				
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor		
Errors	NOT_FOUND		a composition was not found identified by the given Id		
	NULL_ARGUMENT		compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForNewCompositionAncestors				
Description	Registers for notification if an ancestor is added to the specified composition in the composition hierarchy. CompositionReceiver.newCompositionAncestor() is invoked when the specified composition experiences an addition in ancestry.				
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor		
Errors	NOT_FOUND		a composition was not found identified by the given Id		
	NULL_ARGUMENT		compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForNewCompositionDescendants				
Description	Registers for notification if a descendant is added to the specified composition in the composition hierarchy. CompositionReceiver.newCompositionDescendant() is invoked when the specified composition experiences an addition in descendants.				
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor		
Errors	NOT_FOUND		a composition was not found identified by the given Id		
	NULL_ARGUMENT		compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForChangedCompositions				
Description	Register for notifications of new compositions. CompositionReceiver.changedComposition() is invoked when a Composition is changed.				
Errors	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForChangedComposition				
Description	Registers for notification of an updated composition. CompositionReceiver.changedComposition() is invoked when the specified composition is changed.				
Parameters	osid.id.Id	compositionId	the Id of the Composition to monitor		
Errors	NOT_FOUND		a composition was not found identified by the given Id		
	NULL_ARGUMENT		compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

Method	<b>registerForDeletedCompositions</b>		
<b>Description</b>	Register for notifications of new compositions. CompositionReceiver.deletedComposition() is invoked when a Composition is deleted.		
<b>Errors</b>	<a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>		unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>registerForDeletedComposition</b>		
<b>Description</b>	Registers for notification of a deleted composition. CompositionReceiver.deletedComposition() is invoked when the specified composition is deleted.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>registerForUnassignedAssetsInComposition</b>		
<b>Description</b>	Registers for notification if an asset is removed from a specified composition. CompositionReceiver.deletedCompositionAsset() is invoked when an asset is removed from the specified composition. In the federated composition view, notifications include removals from child compositions.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the composition to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>registerForDeletedCompositionAncestors</b>		
<b>Description</b>	Registers for notification if an ancestor is removed from the specified composition in the composition hierarchy. CompositionReceiver.deletedCompositionAncestor() is invoked when the specified composition experiences a removal of an ancestor..		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the composition to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>registerForDeletedCompositionDescendants</b>		
<b>Description</b>	Registers for notification if a descendant removed from to the specified composition in the composition hierarchy. CompositionReceiver.deletedCompositionDescendant() is invoked when the specified composition experiences a removal of a descendant.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the composition to monitor
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionHierarchySession</b>	
<b>Implements</b>	<a href="#">osid.hierarchy.HierarchyTraversalSession</a>	
<b>Description</b>	<p>This session defines methods for traversing a hierarchy of Composition objects. Each composition in the hierarchy is a unique Composition. The hierarchy may be traversed recursively to establish the tree structure through <code>getParents()</code> and <code>getChildren()</code>. To relate these IDs to another OSID, <code>getAncestors()</code> and <code>getDescendants()</code> can be used for retrievals that can be used for bulk lookups in other OSIDs. Any Composition available in the Repository OSID is known to this hierarchy but does not appear in the hierarchy traversal until added as a root node or a child of another node.</p> <p>A user may not be authorized to traverse the entire hierarchy. Parts of the hierarchy may be made invisible through omission from the returns of <code>getParents()</code> or <code>getChildren()</code> in lieu of a <code>PERMISSION_DENIED</code> error that may disrupt the traversal through authorized pathways.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> <li>• comparative view: composition elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete set or is an error condition</li> </ul>	
<b>Method</b>	<b>useComparativeCompositionView</b>	
<b>Description</b>	The returns from the composition methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>usePlenaryCompositionView</b>	
<b>Description</b>	A complete view of the Compositions returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getRootCompositions</b>	
<b>Description</b>	Gets the root compositions in the subject hierarchy. A node with no parents is an orphan. While all composition IDs are known to the hierarchy, an orphan does not appear in the hierarchy unless explicitly added as a root node or child of another node.	
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	the root compositions
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method is must be implemented.
<b>Method</b>	<b>getParentCompositions</b>	
<b>Description</b>	Gets the parents of the given composition.	
<b>Parameters</b>	<a href="#">osid.id.Id</a> <code>compositionId</code>	the Id to query
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	the parents of the composition
<b>Errors</b>	<a href="#">NOT_FOUND</a>	compositionId not found
	<a href="#">NULL_ARGUMENT</a>	compositionId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getAncestorCompositions		
Description	Gets the ancestors of the given composition.		
Parameters	osid.id.Id	compositionId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getParentCompositions().
Return	<a href="#">osid.repository.CompositionList</a>		the ancestors of the composition
Errors	NOT_FOUND		compositionId not found
	NULL_ARGUMENT		compositionId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getChildCompositions		
Description	Gets the children of the given composition.		
Parameters	osid.id.Id	compositionId	the Id to query
Return	<a href="#">osid.repository.CompositionList</a>		the children of the composition
Errors	NOT_FOUND		compositionId not found
	NULL_ARGUMENT		compositionId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	getDescendantCompositions		
Description	Gets the descendants of the given composition.		
Parameters	osid.id.Id	compositionId	the Id to query
	cardinal	levels	the maximum number of levels to include. A value of 1 returns the same set as getChildCompositions().
Return	<a href="#">osid.repository.CompositionList</a>		the descendants of the composition
Errors	NOT_FOUND		compositionId not found
	NULL_ARGUMENT		compositionId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	<b>osid.repository.CompositionHierarchyDesignSession</b>
Implements	<a href="#">osid.hierarchy.HierarchyDesignSession</a>
Description	This session defines methods for managing a hierarchy of Composition objects. Each node in the hierarchy is a unique Composition.

Interface	osid.repository.CompositionRepositorySession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session provides methods to retrieve Composition to Repository mappings. A Composition may appear in multiple Repository objects. Each Repository may have its own authorizations governing who is allowed to look at it.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition</li> </ul>	
Method	<a href="#">useComparativeRepositoryView</a>	
Description	<p>The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">usePlenaryRepositoryView</a>	
Description	<p>A complete view of the Composition and Repository returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<a href="#">canLookupCompositionRepositoryMappings</a>	
Description	<p>Tests if this user can perform lookups of composition/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known lookup methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.</p>	
Return	<a href="#">boolean</a>	false if looking up mappings is not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<a href="#">getCompositionIdsByRepository</a>	
Description	Gets the list of Composition Ids associated with a Repository.	
Parameters	<a href="#">osid.id.Id</a>	repositoryId
Return	<a href="#">osid.id.IdList</a>	list of related composition Ids
Errors	NOT_FOUND	repositoryId is not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<a href="#">getCompositionsByRepository</a>	
Description	Gets the list of Compositions associated with a Repository.	
Parameters	<a href="#">osid.id.Id</a>	repositoryId
Return	<a href="#">osid.repository.CompositionList</a>	list of related compositions
Errors	NOT_FOUND	repositoryId is not found
	NULL_ARGUMENT	repositoryId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

<b>Method</b>	<b>getCompositionIdsByRepositories</b>	
<b>Description</b>	Gets the list of Composition Ids corresponding to a list of Repository objects	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	repositoryIdList
<b>Return</b>	<a href="#">osid.id.IdList</a>	list of repository Ids
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	list of composition Ids repositoryIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getCompoitionsByRepositories</b>	
<b>Description</b>	Gets the list of Compositions corresponding to a list of Repository objects	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	repositoryIdList
<b>Return</b>	<a href="#">osid.repository.CompositionList</a>	list of Compositions
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	repositoryIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getRepositoryIdsByComposition</b>	
<b>Description</b>	Gets the Repository Ids mapped to a Composition.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId
<b>Return</b>	<a href="#">osid.id.IdList</a>	list of repository Ids
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	compositionId is not found compositionId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
<b>Method</b>	<b>getRepositoriesByComposition</b>	
<b>Description</b>	Gets the Repository objects mapped to a Composition.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	list of repositories
<b>Errors</b>	<a href="#">NOT_FOUND</a> <a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a>	compositionId is not found compositionId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionRepositoryAssignmentSession</b>				
<b>Implements</b>	<a href="#">osid.OsidSession</a>				
<b>Description</b>	<p>This session provides methods to re-assign Compositions to Repository objects. A Composition may be associated with multiple Repository objects. Removing the last reference to a Composition is the equivalent of deleting it. Each Repository may have its own authorizations governing who is allowed to operate on it.</p> <p>Moving or adding a reference of a Composition to another Repository is not a copy operation (eg: does not change its Id).</p>				
<b>Method</b>	<b>canAssignCompositions</b>				
<b>Description</b>	Tests if this user can alter composition/repository mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known mapping methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.				
<b>Return</b>	<a href="#">boolean</a>	false if mapping is not authorized, true otherwise			
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>assignCompositionToRepository</b>				
<b>Description</b>	Adds an existing Composition to a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		compositionId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		compositionId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			
<b>Method</b>	<b>unassignCompositionFromRepository</b>				
<b>Description</b>	Removes Composition from a Repository.				
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition		
	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository		
<b>Errors</b>	<a href="#">NOT_FOUND</a>		compositionId or repositoryId not found		
	<a href="#">NULL_ARGUMENT</a>		compositionId or repositoryId is null		
	<a href="#">OPERATION_FAILED</a>		unable to complete request		
	<a href="#">PERMISSION_DENIED</a>		authorization failure		
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.			

Interface	osid.repository.CompositionSubjectSession	
Implements	<a href="#">osid.OsidSession</a>	
Description	<p>This session defines methods for accessing the subjects of a composition.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> <li>• comparative view: elements may be silently omitted or re-ordered</li> <li>• plenary view: provides a complete result set or is an error condition results</li> </ul>	
Method	<b>useComparativeCompositionView</b>	
Description	<p>The returns from the lookup methods may omit or translate elements based on this session, such as authorization, and not result in an error. This view is used when greater interoperability is desired at the expense of precision.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>usePlenaryCompositionView</b>	
Description	<p>A complete view of the Composition returns is desired. Methods will return what is requested or result in an error. This view is used when greater precision is desired at the expense of interoperability.</p>	
Compliance	<a href="#">mandatory</a>	This method is must be implemented.
Method	<b>canLookupCompositionSubjects</b>	
Description	<p>Tests if this user can perform lookups on subjects of compositions. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer lookup operations.</p>	
Return	<a href="#">boolean</a>	false if lookups are not authorized, true otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositionIdsBySubject</b>	
Description	<p>Gets the list of Composition Ids associated with a Subject.</p>	
Parameters	<a href="#">osid.id.Id</a>	subjectId
Return	<a href="#">osid.id.IdList</a>	list of matching asset Ids
Errors	<a href="#">NOT_FOUND</a>	subjectId is not found
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositionsBySubject</b>	
Description	<p>Gets the list of Compositions associated with a Subject.</p>	
Parameters	<a href="#">osid.id.Id</a>	subjectId
Return	<a href="#">osid.repository.CompositionList</a>	list of matching compositions
Errors	<a href="#">NOT_FOUND</a>	subjectId is not found
	<a href="#">NULL_ARGUMENT</a>	subjectId is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositionIdsBySubjects</b>	
Description	<p>Gets the list of Composition Ids corresponding to a list of Subjects.</p>	
Parameters	<a href="#">osid.id.IdList</a>	subjectIdList
Return	<a href="#">osid.id.IdList</a>	list of composition Ids
Errors	<a href="#">NULL_ARGUMENT</a>	subjectIdList is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Method	getCompositionsBySubjects	
<b>Description</b>	Gets the list of Compositions corresponding to a list of Subjects.	
<b>Parameters</b>	osid.id.IdList	subjectIdList
<b>Return</b>	osid.repository.CompositionList	list of compositions
<b>Errors</b>	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	subjectIdList is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getSubjectIdsByComposition	
<b>Description</b>	Gets the Subject Ids mapped to a Composition.	
<b>Parameters</b>	osid.id.Id	compositionId
<b>Return</b>	osid.id.IdList	list of subject Ids
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionId is not found compositionId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getSubjectsByComposition	
<b>Description</b>	Gets the Subjects mapped to a Composition.	
<b>Parameters</b>	osid.id.Id	compositionId
<b>Return</b>	osid.repository.SubjectList	list of subjects
<b>Errors</b>	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionId is not found compositionId is null unable to complete request authorization failure
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSubjectAssignmentSession</b>		
<b>Implements</b>	<a href="#">osid.OsidSession</a>		
<b>Description</b>	This session defines methods for managing composition to subject mappings.		
<b>Method</b>	<b>canManageCompositionSubjects</b>		
<b>Description</b>	Tests if this user can change composition subject mappings. A return of true does not guarantee successful authorization. A return of false indicates that it is known all methods in this session will result in a PERMISSION_DENIED. This is intended as a hint to an application that may not wish to offer management operations.		
<b>Return</b>	<a href="#">boolean</a>		false if composition subject management is not authorized, true otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>assignCompositionToSubject</b>		
<b>Description</b>	Adds a Composition to a Subject.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	Id of the Composition
	<a href="#">osid.type.Type</a>	subjectId	Id of the Subject
<b>Errors</b>	<a href="#">ALREADY_EXISTS</a>		composition is already mapped to subject
	<a href="#">NOT_FOUND</a>		compositionId or subjectId is not found
	<a href="#">NULL_ARGUMENT</a>		compositionId or subjectId is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>unassignCompositionFromSubject</b>		
<b>Description</b>	Removes a Composition from a Subject.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	Id of the Composition
	<a href="#">osid.type.Type</a>	subjectId	Id of the Subject
<b>Errors</b>	<a href="#">NOT_FOUND</a>		compositionId or subjectId is not found, or not mapped
	<a href="#">NULL_ARGUMENT</a>		compositionId or subjectId is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Interface	osid.repository.Asset
Implements	<a href="#">osid.OsidObject</a>
Description	<p>An Asset represents some digital content. Example assets might be a text document, an image, or a movie. The content data, and metadata related directly to the content format and quality, is accessed through AssetContent. Assets, like all OsidObjects, include a type an interface extension to qualify the Asset and include additional data. The division between the Asset Type and AssetContent is to separate data describing the asset from data describing the format of the contents, allowing a consumer to select among multiple formats, sizes or levels of fidelity.</p> <p>An example is a photograph of the Bay Bridge. The content may deliver a JPEG in multiple resolutions where the AssetContent may also describe size or compression factor for each one. The content may also include an uncompressed TIFF version. The Asset Type may be "photograph" indicating that the photo itself is the asset managed in this repository.</p> <p>Since an Asset may have multiple AssetContent structures, the decision of how many things to stuff inside a single asset comes down to if the content is actually a different format, or size, or quality, falling under the same creator, copyright, publisher and distribution rights as the original. This may, in some cases, provide a means to implement some accessibility, it doesn't handle the case where, to meet an accessibility requirement, one asset needs to be substituted for another. The Repository OSID manages this aspect outside the scope of the core Asset definition.</p> <p>Assets map to AssetSubjects. AssetSubjects are OsidObjects that capture a subject matter. In the above example, an AssetSubject may be defined for the Bay Bridge and include data describing the bridge. The single subject can map to multiple assets depicting the bridge providing a single entry for a search and a single place to describe a bridge. Bridges, as physical items, may also be described using the Resource OSID in which case the use of the AssetSubject interface acts as a cover for the underlying Resource to assist repository-only consumers.</p> <p>The Asset definition includes some basic copyright and related licensing information to assist in finding free-to-use content, or to convey the distribution restrictions that may be placed on the asset. Generally, if no data is available it is to be assumed that all rights are reserved.</p> <p>Assets provide methods for conveying the persons or organizations involved with the creation, provision and publishing the content. Creators and Authors that would be found in a bibliographic entry or other attribution are available in getPrincipalCredits(). Each AssetCredit is typed to indicate the particular role played in the asset production.</p> <p>A publisher is applicable if the content of this Asset has been published. Not all Assets in this Repository may have a published status and such a status may effect the applicability of copyright law. To trace the source of an Asset, both a provider and source are defined. The provider indicates where this repository acquired the asset and the source indicates the original provider or copyright owner. In the case of a published asset, the source is the publisher.</p> <p>Assets also define methods to facilitate searches over time and space as it relates to the subject matter. This may at times be redundant with the AssetSubject. In the case of the Bay Bridge photograph, the temporal coverage may include 1936, when it opened, and/or indicate when the photo was taken to capture a current event of the bridge. The decision largely depends on what desired effect is from a search. The spatial coverage may describe the GPS coordinates of the bridge or describe the spatial area encompassed in the view. In either case, a "photograph" type may unambiguously define methods to describe the exact time the photograph was taken and the location of the photographer.</p> <p>The core Asset defines methods to perform general searches and construct bibliographic entries without knowledge of a particular Asset or AssetContent record Type.</p>

Method	<b>getTitle</b>	
<b>Description</b>	Gets the proper title of this asset. This may be the same as the display name or the display name may be used for a less formal label.	
<b>Return</b>	<a href="#">string</a>	the title of this asset
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>isCopyrightStatusKnown</b>	
<b>Description</b>	Tests if the copyright status is known.	
<b>Return</b>	<a href="#">boolean</a>	true if the copyright status of this asset is known, false otherwise. If false, isPublidDomain(), canDistributeVerbatim(), canDistributeAlterations() and canDistributeCompositions() may also be false.
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>isPublicDomain</b>	
<b>Description</b>	Tests if this asset is in the public domain. An asset is in the public domain if copyright is not applicable, the copyright has expired, or the copyright owner has expressly relinquished the copyright.	
<b>Return</b>	<a href="#">boolean</a>	true if this asset is in the public domain, false otherwise. If true, canDistributeVerbatim(), canDistributeAlterations() and canDistributeCompositions() must also be true.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	isCopyrightStatusKnown() is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCopyright</b>	
<b>Description</b>	Gets the copyright statement and of this asset which identifies the current copyright holder. For an asset in the public domain, this method may return the original copyright statement although it may be no longer valid.	
<b>Return</b>	<a href="#">string</a>	the copyright statement or an empty string if none available. An empty string does not imply the asset is not protected by copyright.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	isCopyrightStatusKnown() is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCopyrightRegistration</b>	
<b>Description</b>	Gets the copyright registration information for this asset.	
<b>Return</b>	<a href="#">string</a>	the copyright registration. An empty string means the registration status isn't known.
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getLicense</b>	
<b>Description</b>	Gets the terms of usage for this asset. If isCopyrightStatusKnown() is false a statement about the suspected copyright status may also be included.	
<b>Return</b>	<a href="#">string</a>	the license statement
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	canDistributeVerbatim	
Description	Tests if there are any license restrictions on this asset that restrict the distribution, re-publication or public display of this asset, commercial or otherwise, without modification, alteration, or inclusion in other works. This method is intended to offer consumers a means of filtering out search results that restrict distribution for any purpose. The scope of this method does not include licensing that describes warranty disclaimers or attribution requirements. This method is intended for informational purposes only and does not replace or override the terms specified in a license agreement which may specify exceptions or additional restrictions.	
Return	boolean	true if the asset can be distributed verbatim, false otherwise.
Errors	ILLEGAL_STATE	isCopyrightStatusKnown() is false
Compliance	mandatory	This method must be implemented.
Method	canDistributeAlterations	
Description	Tests if there are any license restrictions on this asset that restrict the distribution, re-publication or public display of any alterations or modifications to this asset, commercial or otherwise, for any purpose. This method is intended to offer consumers a means of filtering out search results that restrict the distribution or public display of any modification or alteration of the content or its metadata of any kind, including editing, translation, resampling, resizing and cropping. The scope of this method does not include licensing that describes warranty disclaimers or attribution requirements. This method is intended for informational purposes only and does not replace or override the terms specified in a license agreement which may specify exceptions or additional restrictions.	
Return	boolean	true if the asset can be modified, false otherwise. If true, canDistributeVerbatim() must also be true.
Errors	ILLEGAL_STATE	isCopyrightStatusKnown() is false
Compliance	mandatory	This method must be implemented.
Method	canDistributeCompositions	
Description	Tests if there are any license restrictions on this asset that restrict the distribution, re-publication or public display of this asset as an inclusion within other content or composition, commercial or otherwise, for any purpose, including restrictions upon the distribution or license of the resulting composition. This method is intended to offer consumers a means of filtering out search results that restrict the use of this asset within compositions. The scope of this method does not include licensing that describes warranty disclaimers or attribution requirements. This method is intended for informational purposes only and does not replace or override the terms specified in a license agreement which may specify exceptions or additional restrictions.	
Return	boolean	true if the asset can be part of a larger composition false otherwise. If true, canDistributeVerbatim() must also be true.
Errors	ILLEGAL_STATE	isCopyrightStatusKnown() is false
Compliance	mandatory	This method must be implemented.
Method	getProviderId	
Description	Gets the Resource Id of the provider, or immediate source, of this asset. The provider is the entity that makes this digital asset available in this repository but may or may not be the publisher of the contents depicted in the asset. For example, a map published by Ticknor & Fields in 1848 may have a provider of Library of Congress. If copied from a repository at Middlebury College, the provider would be Middlebury College. To maximize usefulness, a repository should indicate the next-hop repository it retrieved the asset from.	
Return	osid.id.Id	the provider Id
Compliance	mandatory	This method must be implemented.

Method	getProvider	
<b>Description</b>	Gets the Resource representing the provider of this asset.	
<b>Return</b>	<a href="#">osid.resource.Resource</a>	the provider
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getSourceId	
<b>Description</b>	Gets the Resource Id of the source of this asset. The source is the original owner of the copyright of this asset and may differ from the creator of this asset, or the named entities in the copyright notice. The source for a published book written by Margaret Mitchell would be Macmillan. The source for an unpublished painting by Arthur Goodwin would be Arthur Goodwin.	
<b>Return</b>	<a href="#">osid.id.Id</a>	the source Id
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getSource	
<b>Description</b>	Gets the Resource representing the source of this asset.	
<b>Return</b>	<a href="#">osid.resource.Resource</a>	the source
<b>Errors</b>	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getCreatedDate	
<b>Description</b>	Gets the created date of this asset, which is generally not related to when the object representing the asset was created. The date returned may indicate that not much is known.	
<b>Return</b>	<a href="#">osid.calendaring.DateTime</a>	the created date
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	isPublished	
<b>Description</b>	Tests if this asset has been published. Not all assets viewable in this repository may have been published. The source of a published asset indicates the publisher.	
<b>Return</b>	<a href="#">boolean</a>	true if this asset has been published, false if unpublished or its published status is not known
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getPublishedDate	
<b>Description</b>	Gets the published date of this asset. Unpublished assets have no published date. A published asset has a date available, however the date returned may indicate that not much is known.	
<b>Return</b>	<a href="#">osid.calendaring.DateTime</a>	the published date
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	isPublished() is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	getPrincipalCreditString	
<b>Description</b>	Gets the credits of the principal people involved in the production of this asset as a display string.	
<b>Return</b>	<a href="#">string</a>	the principal credits
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
	getAssetContents	
<b>Description</b>	Gets the content of this asset.	
<b>Return</b>	<a href="#">osid.repository.AssetContentList</a>	the asset contents
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>getAssetRecord</b>		
<b>Description</b>	Gets the record corresponding to the given Asset record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The assetRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(assetRecordType) is true.	
<b>Parameters</b>	<code>osid.type.Type</code>	assetRecordType an asset record type
<b>Return</b>	<code>osid.repository.AssetRecord</code>	the record
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNSUPPORTED</code>	assetRecordType is null unable to complete request authorization failure occurred hasRecordType(assetRecordType) is false
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an Asset. The methods specified by the record type are available through the underlying object.	
<b>getAsset</b>		
<b>Description</b>	Gets the Asset from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.Asset</a>	the asset
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.AssetQuery		
Implements	<a href="#">osid.OsidQuery</a>		
Description	This is the query interface for searching assets. Each method specifies an AND term while multiple invocations of the same method produce a nested OR. The query record is identified by the Asset Type.		
Method	<b>matchTitle</b>		
Description	Adds a title for this query.		
Parameters	string	title	title string to match
	<a href="#">osid.type.Type</a>	stringMatchType	the string match type
	boolean	match	true for a positive match, false for a negative match
Errors	<a href="#">INVALID_ARGUMENT</a>		title not of stringMatchType
	<a href="#">NULL_ARGUMENT</a>		title or stringMatchType is null
	<a href="#">UNSUPPORTED</a>		supportsStringMatchType(stringMatchType) is false
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchAnyTitle</b>		
Description	Matches a title that has any value.		
Parameters	boolean	match	true to match assets with any title, false to match assets with no title
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchPublicDomain</b>		
Description	Matches assets marked as public domain.		
Parameters	boolean	publicDomain	public domain flag
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchAnyPublicDomain</b>		
Description	Matches assets with any public domain value.		
Parameters	boolean	match	true to match assets with any public domain value, false to match assets with no public domain value
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchCopyright</b>		
Description	Adds a copyright for this query.		
Parameters	string	copyright	copyright string to match
	<a href="#">osid.type.Type</a>	stringMatchType	the string match type
	boolean	match	true for a positive match, false for a negative match
Errors	<a href="#">INVALID_ARGUMENT</a>		copyright not of stringMatchType
	<a href="#">NULL_ARGUMENT</a>		copyright or stringMatchType is null
	<a href="#">UNSUPPORTED</a>		supportsStringMatchType(stringMatchType) is false
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchAnyCopyright</b>		
Description	Matches assets with any copyright statement.		
Parameters	boolean	match	true to match assets with any copyright value, false to match assets with no copyright value
Compliance	<a href="#">mandatory</a>		This method must be implemented.

Method	matchCopyrightRegistration		
Description	Adds a copyright registration for this query.		
Parameters	string	registration	copyright registration string to match
	osid.type.Type	stringMatchType	the string match type
	boolean	match	true for a positive match, false for a negative match
Errors	INVALID_ARGUMENT		registration not of stringMatchType
	NULL_ARGUMENT		registration or stringMatchType is null
	UNSUPPORTED		supportsStringMatchType(stringMatchType) is false
Compliance	mandatory		This method must be implemented.
Method	matchAnyCopyrightRegistration		
Description	Matches assets with any copyright registration.		
Parameters	boolean	match	true to match assets with any copyright registration value, false to match assets with no copyright registration value
Compliance	mandatory		This method must be implemented.
Method	matchLicense		
Description	Adds a license for this query.		
Parameters	string	license	license string to match
	osid.type.Type	stringMatchType	the string match type
	boolean	match	true for a positive match, false for a negative match
Errors	INVALID_ARGUMENT		license not of stringMatchType
	NULL_ARGUMENT		license or stringMatchType is null
	UNSUPPORTED		supportsStringMatchType(stringMatchType) is false
Compliance	mandatory		This method must be implemented.
Method	matchAnyLicense		
Description	Matches assets with any license statement.		
Parameters	boolean	match	true to match assets with any license value, false to match assets with no license value
Compliance	mandatory		This method must be implemented.
Method	matchDistributeVerbatim		
Description	Matches assets marked as distributable.		
Parameters	boolean	distributable	distribute verbatim rights flag
Compliance	mandatory		This method must be implemented.
Method	matchDistributeAlterations		
Description	Matches assets that whose alterations can be distributed.		
Parameters	boolean	alterable	distribute alterations rights flag
Compliance	mandatory		This method must be implemented.
Method	matchDistributeCompositions		
Description	Matches assets that can be distributed as part of other compositions.		
Parameters	boolean	composable	distribute compositions rights flag
Compliance	mandatory		This method must be implemented.
Method	matchAnyDistributionRights		
Description	Matches assets with any distribution rights.		
Parameters	boolean	match	true to match assets with any distribution rights values, false to match assets with distribution rights values
Compliance	mandatory		This method must be implemented.

Method	matchProviderId		
<b>Description</b>	Sets the provider Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	providerId	the provider Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		providerId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	matchAnyProvider		
<b>Description</b>	Matches assets with any provider.		
<b>Parameters</b>	boolean	match	true to match assets with any provider, false to match assets with no providers
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	supportsProviderQuery		
<b>Description</b>	Tests if a ResourceQuery is available for the provider.		
<b>Return</b>	<a href="#">boolean</a>		true if a resource query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getProviderQuery		
<b>Description</b>	Gets the query interface for the provider. Multiple queries can be retrieved for a nested OR term.		
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>		the provider query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsProviderQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsProviderQuery() is true.
Method	matchSourceId		
<b>Description</b>	Sets the source Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	sourceId	the source Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		sourceId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	matchAnySource		
<b>Description</b>	Matches assets with any source.		
<b>Parameters</b>	boolean	match	true to match assets with any source, false to match assets with no sources
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	supportsSourceQuery		
<b>Description</b>	Tests if a ResourceQuery is available for the source.		
<b>Return</b>	<a href="#">boolean</a>		true if a resource query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getSourceQuery		
<b>Description</b>	Gets the query interface for the source. Multiple queries can be retrieved for a nested OR term.		
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>		the source query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsSourceQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsSourceQuery() is true.

Method	<b>matchCreatedTime</b>		
Description	Match assets that are created between the specified time period.		
Parameters	osid.calendaring.DateTime	start	start time of the query
	osid.calendaring.DateTime	end	end time of the query
	boolean	match	true for a positive match, false for a negative match
Errors	INVALID_ARGUMENT		end is less than start
	NULL_ARGUMENT		start or end is null
Compliance	mandatory		This method must be implemented.
Method	<b>matchAnyCreatedTime</b>		
Description	Matches assets with any creation time.		
Parameters	boolean	match	true to match assets with any created time, false to match assets with no created time
Compliance	mandatory		This method must be implemented.
Method	<b>matchPublished</b>		
Description	Marks assets that are marked as published.		
Parameters	boolean	published	published flag
Compliance	mandatory		This method must be implemented.
Method	<b>matchPublishedTime</b>		
Description	Match assets that are published between the specified time period.		
Parameters	osid.calendaring.DateTime	start	start time of the query
	osid.calendaring.DateTime	end	end time of the query
	boolean	match	true for a positive match, false for a negative match
Errors	INVALID_ARGUMENT		end is less than start
	NULL_ARGUMENT		start or end is null
Compliance	mandatory		This method must be implemented.
Method	<b>matchAnyPublishedTime</b>		
Description	Matches assets with no published time.		
Parameters	boolean	match	true to match assets with any published time, false to match assets with no published time
Compliance	mandatory		This method must be implemented.
Method	<b>supportsAssetCreditQuery</b>		
Description	Tests if an AssetQuery is available.		
Return	boolean		true if an asset query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	<b>getAssetCreditQuery</b>		
Description	Gets the query interface for an asset credit. Multiple queries can be retrieved for a nested OR term.		
Return	osid.repository.AssetCreditQuery		the asset credit query
Errors	UNIMPLEMENTED		supportsAssetCreditQuery() is false
Compliance	mandatory		This method must be implemented.
Method	<b>matchAnyAssetCredits</b>		
Description	Matches assets with any credits.		
Parameters	boolean	match	true to match assets with any credits, false to match assets with no credits
Compliance	mandatory		This method must be implemented.

Method	<b>matchTemporalCoverage</b>		
Description	Match assets that whose coverage falls between the specified time period.		
Parameters	<a href="#">osid.calendaring.DateTime</a>	start	start time of the query
	<a href="#">osid.calendaring.DateTime</a>	end	end time of the query
	boolean	match	true for a positive match, false for a negative match
Errors	<a href="#">INVALID_ARGUMENT</a>		end is less than start
	<a href="#">NULL_ARGUMENT</a>		start or end is null
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>matchAnyTemporalCoverage</b>		
Description	Matches assets with any temporal coverage.		
Parameters	boolean	match	true to match assets with any temporal coverage, false to match assets with no temporal coverage
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>supportsSpatialQuery</b>		
Description	Tests if a SpatialUnitQuery is available.		
Return	boolean		true if a spatial unit query interface is available, false otherwise
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>getSpatialQuery</b>		
Description	Gets the query interface for a spatial unit. Multiple queries can be retrieved for a nested OR term.		
Return	<a href="#">osid.spatial.SpatialUnitQuery</a>		the spatial query
Errors	<a href="#">UNIMPLEMENTED</a>		supportsSpatialQuery() is false
Compliance	<a href="#">optional</a>		This method must be implemented if supportsSpatialQuery() is true.
Method	<b>matchAnySpatialCoverage</b>		
Description	Matches assets with no spatial coverage.		
Parameters	boolean	match	true to match assets with any spatial coverage, false to match assets with no spatial coverage
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>supportsAssetContentQuery</b>		
Description	Tests if an AssetContentQuery is available.		
Return	boolean		true if an asset contents query interface is available, false otherwise
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	<b>getAssetContentQuery</b>		
Description	Gets the query interface for the asset content. Multiple queries can be retrieved for a nested OR term.		
Return	<a href="#">osid.repository.AssetContentQuery</a>		the asset contents query
Errors	<a href="#">UNIMPLEMENTED</a>		supportsAssetContentQuery() is false
Compliance	<a href="#">optional</a>		This method must be implemented if supportsAssetContentQuery() is true.
Method	<b>matchAnyAssetContent</b>		
Description	Matches assets with any content.		
Parameters	boolean	match	true to match assets with any content, false to match assets with no content
Compliance	<a href="#">mandatory</a>		This method must be implemented.

Method	matchRepositoryId		
<b>Description</b>	Sets the repository Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the repository Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		repositoryId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	supportsRepositoryQuery		
<b>Description</b>	Tests if a RepositoryQuery is available.		
<b>Return</b>	<a href="#">boolean</a>		true if a repository query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getRepositoryQuery		
<b>Description</b>	Gets the query interface for a repository. Multiple queries can be retrieved for a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.RepositoryQuery</a>		the repository query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsRepositoryQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsRepositoryQuery() is true.
Method	matchSubjectId		
<b>Description</b>	Sets the subject Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the subject Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		subjectId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	supportsSubjectQuery		
<b>Description</b>	Tests if a SubjectQuery is available.		
<b>Return</b>	<a href="#">boolean</a>		true if a subject query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getSubjectQuery		
<b>Description</b>	Gets the query interface for a subject. Multiple queries can be retrieved for a nested OR term.		
<b>Parameters</b>	<a href="#">boolean</a>	match	true for a positive match, false for a negative match
<b>Return</b>	<a href="#">osid.repository.SubjectQuery</a>		the subject query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsSubjectQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsSubjectQuery() is true.
Method	matchAnySubject		
<b>Description</b>	Matches assets with any subject mappings.		
<b>Parameters</b>	<a href="#">boolean</a>	match	true to match assets with any subject, false to match assets with no subjects
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	matchCompositionId		
<b>Description</b>	Sets the composition Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the composition Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		compositionId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	<b>supportsCompositionQuery</b>		
<b>Description</b>	Tests if a CompositionQuery is available.		
<b>Return</b>	boolean		true if a composition query interface is available, false otherwise
<b>Compliance</b>	mandatory		This method must be implemented.
Method	<b>getCompositionQuery</b>		
<b>Description</b>	Gets the query interface for a composition. Multiple queries can be retrieved for a nested OR term.		
<b>Return</b>	osid.repository.CompositionQuery		the composition query
<b>Errors</b>	UNIMPLEMENTED		supportsCompositionQuery() is false
<b>Compliance</b>	optional		This method must be implemented if supportsCompositionQuery() is true.
Method	<b>matchAnyComposition</b>		
<b>Description</b>	Matches assets with any composition mappings.		
<b>Parameters</b>	boolean	match	true to match assets with any composition, false to match assets with no composition mappings
<b>Compliance</b>	mandatory		This method must be implemented.
Method	<b>getAssetQueryRecord</b>		
<b>Description</b>	Gets the record query interface corresponding to the given Asset record Type. Multiple retrievals produce a nested OR term.		
<b>Parameters</b>	osid.type.Type	assetRecordType	an asset record type
<b>Return</b>	osid.repository.AssetQueryRecord		the asset query record
<b>Errors</b>	NULL_ARGUMENT		assetRecordType is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure occurred
	UNSUPPORTED		hasRecordType(assetRecordType) is false
<b>Compliance</b>	mandatory		This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an AssetQuery. The methods specified by the record type are available through the underlying object.	
<b>getAssetQuery</b>		
<b>Description</b>	Gets the AssetQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetQuery</a>	the asset query
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetForm</b>	
<b>Implements</b>	<a href="#">osid.OsidForm</a>	
<b>Description</b>	This is the form for creating and updating Assets. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the AssetAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.	
<b>Method</b>	<b>getTitleMetadata</b>	
<b>Description</b>	Gets the metadata for an asset title.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the title
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setTitle</b>	
<b>Description</b>	Sets the title.	
<b>Parameters</b>	<a href="#">string</a>	title
	<a href="#">INVALID_ARGUMENT</a>	title is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	title is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearTitle</b>	
<b>Description</b>	Removes the title.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getPublicDomainMetadata</b>	
<b>Description</b>	Gets the metadata for the public domain flag.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the public domain
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setPublicDomain</b>	
<b>Description</b>	Sets the public domain flag.	
<b>Parameters</b>	<a href="#">boolean</a>	publicDomain
	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearPublicDomain</b>	
<b>Description</b>	Removes the public domain status.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getCopyrightMetadata</b>	
<b>Description</b>	Gets the metadata for the copyright.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the copyright
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setCopyright</b>	
<b>Description</b>	Sets the copyright.	
<b>Parameters</b>	<a href="#">string</a>	copyright
	<a href="#">INVALID_ARGUMENT</a>	copyright is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	copyright is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearCopyright</b>	
<b>Description</b>	Removes the copyright.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getLicenseMetadata		
Description	Gets the metadata for the asset license.		
Return	<a href="#">osid.Metadata</a>		metadata for the license
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	setLicense		
Description	Sets the license statement.		
Parameters	<a href="#">string</a>	license	the new license
Errors	<a href="#">INVALID_ARGUMENT</a>		license is invalid
	<a href="#">NO_ACCESS</a>		Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>		license is null
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	clearLicense		
Description	Removes the license statement.		
Errors	<a href="#">NO_ACCESS</a>		Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	getDistributionMetadata		
Description	Gets the metadata for the distribution rights.		
Return	<a href="#">osid.Metadata</a>		metadata for the distribution rights fields
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	setDistributionRights		
Description	Sets the distribution rights.		
Parameters	<a href="#">boolean</a>	distributeVerbatim	right to distribute verbatim copies
	<a href="#">boolean</a>	distributeMods	right to distribute modifications
	<a href="#">boolean</a>	distributeComps	right to distribute compositions
Errors	<a href="#">INVALID_ARGUMENT</a>		right specified as false when public domain is true
	<a href="#">NO_ACCESS</a>		authorization failure
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	clearDistributionRights		
Description	Removes the distribution rights.		
Errors	<a href="#">NO_ACCESS</a>		Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	getProviderMetadata		
Description	Gets the metadata for the provider.		
Return	<a href="#">osid.Metadata</a>		metadata for the provider
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	setProvider		
Description	Sets the provider.		
Parameters	<a href="#">osid.id.Id</a>	providerId	the new publisher
Errors	<a href="#">INVALID_ARGUMENT</a>		providerId is invalid
	<a href="#">NO_ACCESS</a>		Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>		providerId is null
Compliance	<a href="#">mandatory</a>		This method must be implemented.
Method	clearProvider		
Description	Removes the provider.		
Errors	<a href="#">NO_ACCESS</a>		Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	<a href="#">mandatory</a>		This method must be implemented.

<b>Method</b>	<b>getSourceMetadata</b>	
<b>Description</b>	Gets the metadata for the source.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the source
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setSource</b>	
<b>Description</b>	Sets a source.	
<b>Parameters</b>	<a href="#">osid.id.Id</a>	sourceId
	<a href="#">INVALID_ARGUMENT</a>	sourceId is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	sourceId is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearSource</b>	
<b>Description</b>	Removes the source.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getCreatedDateMetadata</b>	
<b>Description</b>	Gets the metadata for the asset creation date.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the created date
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setCreatedDate</b>	
<b>Description</b>	Sets the created date.	
<b>Parameters</b>	<a href="#">osid.calendaring.DateTime</a>	createdDate
	<a href="#">INVALID_ARGUMENT</a>	createdDate is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	createdDate is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearCreatedDate</b>	
<b>Description</b>	Removes the created date.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getPublishedMetadata</b>	
<b>Description</b>	Gets the metadata for the published status.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the published field
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setPublished</b>	
<b>Description</b>	Sets the published status.	
<b>Parameters</b>	<a href="#">boolean</a>	published
	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearPublished</b>	
<b>Description</b>	Removes the published status.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	getPublishedDateMetadata	
<b>Description</b>	Gets the metadata for the published date.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the published date
<b>Compliance</b>	<a href="#">mandatory</a>	
Method	setPublishedDate	
<b>Description</b>	Sets the published date.	
<b>Parameters</b>	<a href="#">osid.calendaring.DateTime</a>	publishedDate
<b>Errors</b>	<a href="#">INVALID_ARGUMENT</a>	publishedDate is invalid
	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	publishedDate is null
<b>Compliance</b>	<a href="#">mandatory</a>	
Method	clearPublishedDate	
<b>Description</b>	Removes the published date.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	
Method	getAssetFormRecord	
<b>Description</b>	Gets the AssetFormRecord interface corresponding to the given Asset record interface Type.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetRecordType
<b>Return</b>	<a href="#">osid.repository.AssetFormRecord</a>	the record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(assetRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	

<b>Interface</b>	<b>osid.repository.AssetFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an AssetForm. The methods specified by the record type are available through the underlying object.	
<b>getAssetForm</b>		
<b>Description</b>	Gets the AssetForm from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetForm</a>	the asset form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>orderByTitle</b>	
<b>Description</b>	Specifies a preference for ordering the result set by asset title.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByPublicDomain</b>	
<b>Description</b>	Specifies a preference for grouping the result set by published domain.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByDistributeVerbatim</b>	
<b>Description</b>	Specifies a preference for grouping the result set by the ability to distribute copies.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByDistributeAlterations</b>	
<b>Description</b>	Specifies a preference for grouping the result set by the ability to distribute alterations.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByDistributeCompositions</b>	
<b>Description</b>	Specifies a preference for grouping the result set by the ability to distribute compositions.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderByProvider</b>	
<b>Description</b>	Specifies a preference for ordering the result set by asset provider.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsProviderSearchOrder</b>	
<b>Description</b>	Tests if a provider order interface is available.	
<b>Return</b>	<a href="#">boolean</a>	true if a provider order interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getProviderSearchOrder</b>	
<b>Description</b>	Gets the provider order interface.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchOrder</a>	the resource search order interface for the provider
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	supportsProviderSearchOrder() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsProviderSearchOrder() is true.
<b>Method</b>	<b>orderBySource</b>	
<b>Description</b>	Specifies a preference for ordering the result set by source.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>supportsSourceSearchOrder</b>	
<b>Description</b>	Tests if a source order interface is available.	
<b>Return</b>	<a href="#">boolean</a>	true if a source order interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getSourceSearchOrder</b>	
<b>Description</b>	Gets the source order interface.	
<b>Return</b>	<a href="#">osid.resource.ResourceSearchOrder</a>	the resource search order interface for the source
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	supportsSourceSearchOrder() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsSourceSearchOrder() is true.
<b>Method</b>	<b>orderByCreatedDate</b>	
<b>Description</b>	Specifies a preference for ordering the result set by created date.	
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	<b>orderByPublished</b>	
<b>Description</b>	Specifies a preference for grouping the result set by published status.	
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
Method	<b>orderByPublishedDate</b>	
<b>Description</b>	Specifies a preference for ordering the result set by published date.	
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
Method	<b>orderByTemporalCoverage</b>	
<b>Description</b>	Specifies a preference for ordering the result set by temporal coverage.	
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
Method	<b>orderBySpatialCoverage</b>	
<b>Description</b>	Specifies a preference for ordering the result set by spatial coverage.	
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
Method	<b>getAssetSearchOrderRecord</b>	
<b>Description</b>	Gets the asset search order record corresponding to the given asset record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<code>osid.type.Type</code>	assetRecordType
<b>Return</b>	<code>osid.repository.AssetSearchOrderRecord</code>	
<b>Errors</b>	<code>NULL_ARGUMENT</code>	assetRecordType is null
	<code>OPERATION_FAILED</code>	unable to complete request
	<code>PERMISSION_DENIED</code>	authorization failure occurred
	<code>UNSUPPORTED</code>	hasRecordType(assetRecordType) is false
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

Interface	osid.repository.AssetSearchOrderRecord	
Implements	<a href="#">osid.OsidRecord</a>	
Description	A record for an AssetSearchOrder. The methods specified by the record type are available through the underlying object.	
<b>getAssetSearchOrder</b>		
Description	Gets the AssetSearchOrder from which this record originated.	
Return	<a href="#">osid.repository.AssetSearchOrder</a>	the asset search order
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearch</b>	
<b>Implements</b>	<a href="#">osid.OsidSearch</a>	
<b>Description</b>	The search interface for governing asset searches.	
<b>Method</b>	<b>searchWithinAssetResults</b>	
<b>Description</b>	Execute this search using a previous search result.	
<b>Parameters</b>	<a href="#">osid.repository.AssetSearchResults</a>	results
		results from a query
<b>Errors</b>	<a href="#">INVALID_ARGUMENT</a>	results is not valid
	<a href="#">NULL_ARGUMENT</a>	results is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>searchAmongAssets</b>	
<b>Description</b>	Execute this search among the given list of assets.	
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	assetIds
		list of asset Ids
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetIds is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>orderAssetResults</b>	
<b>Description</b>	Specify an ordering to the search results.	
<b>Parameters</b>	<a href="#">osid.repository.AssetSearchOrder</a>	assetSearchOrder
		asset search order
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetSearchOrder is null
	<a href="#">UNSUPPORTED</a>	assetSearchOrder is not of this service
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getAssetSearchRecord</b>	
<b>Description</b>	Gets the record corresponding to the given asset search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetSearchRecordType
		an asset search record type
<b>Return</b>	<a href="#">osid.repository.AssetSearchRecord</a>	the asset search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(assetSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearchRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for an AssetSearch. The methods specified by the record type are available through the underlying object.	
<b>getAssetSearch</b>		
<b>Description</b>	Gets the AssetSearch from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetSearch</a>	the asset search
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getAssets</b>	
<b>Description</b>	Gets the asset list resulting from a search.	
<b>Return</b>	<a href="#">osid.repository.AssetList</a>	the asset list
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getAssetSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given asset search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	assetSearchRecordType
	an asset search record type	
<b>Return</b>	<a href="#">osid.repository.AssetSearchResultsRecord</a>	the asset search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	assetSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(assetSearchRecordType) is false
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetSearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for an AssetSearchResults. The methods specified by the record type are available through the underlying object.	
<b>getAssetSearchResults</b>		
<b>Description</b>	Gets the AssetSearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetSearchResults</a>	the asset search results
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

Interface	osid.repository.AssetReceiver				
Implements	<a href="#">osid.OsidReceiver</a>				
Description	The asset receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Asset objects.				
Method	<b>newAsset</b>				
Description	The callback for notifications of new assets.				
Parameters	<a href="#">osid.id.Id</a>	assetId	the Id of the new Asset		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>changedAsset</b>				
Description	The callback for notification of updated assets.				
Parameters	<a href="#">osid.id.Id</a>	assetId	the Id of the updated Asset		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			
Method	<b>deletedAsset</b>				
Description	the callback for notification of deleted assets.				
Parameters	<a href="#">osid.id.Id</a>	assetId	the Id of the deleted Asset		
Compliance	<a href="#">mandatory</a>	This method must be implemented.			

Interface	osid.repository.AssetList	
Implements	<a href="#">osid.OsidList</a>	
Description	<p>Like all OsidLists, AssetList provides a means for accessing Asset elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (al.hasNext()) {     Asset asset = al.getNextAsset(); }</pre> <p>or</p> <pre>while (al.hasNext()) {     Asset[] assets = al.getNextAssets(al.available()); }</pre>	
Method	<b>getNextAsset</b>	
Description	Gets the next Asset in this list.	
Return	<a href="#">osid.repository.Asset</a>	the next Asset in this list. The hasNext() method should be used to test that a next Asset is available before calling this method.
Errors	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getNextAssets</b>	
Description	Gets the next set of Assets in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n
		the number of Asset elements requested which must be less than or equal to available()
Return	<a href="#">osid.repository.Asset[]</a>	an array of Asset elements. The length of the array is less than or equal to the number specified.
Errors	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.AssetContent	
Implements	<a href="#">osid.OsidObject</a>	
Description	<p>AssetContent represents a version of content represented by an Asset. Although AssetContent is a separate OsidObject with its own Id to distinguish it from other content inside an Asset, AssetContent can only be accessed through an Asset.</p> <p>Once an Asset is selected, multiple contents should be negotiated using the size, fidelity, accessibility requirements or application environment.</p>	
Method	<b>getAsset</b>	
Description	Gets the Asset corresponding to this content.	
Return	<a href="#">osid.repository.Asset</a>	the asset
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAccessibilityTypes</b>	
Description	Gets the accessibility types associated with this content.	
Return	<a href="#">osid.type.TypeList</a>	list of content accessibility types
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>hasDataLength</b>	
Description	Tests if a data length is available.	
Return	<a href="#">boolean</a>	true if a length is available for this content, false otherwise.
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getDataLength</b>	
Description	Gets the length of the data represented by this content.	
Return	<a href="#">cardinal</a>	the length of the data stream
Errors	<a href="#">ILLEGAL_STATE</a>	hasDataLength() is false
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getData</b>	
Description	Gets the asset content data.	
Return	<a href="#">osid.transport.DataInputStream</a>	the length of the content data
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>hasURL</b>	
Description	Tests if a URL is associated with this content.	
Return	<a href="#">boolean</a>	true if a URL is available, false otherwise
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getURL</b>	
Description	Gets the URL associated with this content for web-based retrieval.	
Return	<a href="#">string</a>	the url for this data
Errors	<a href="#">ILLEGAL_STATE</a>	hasURL() is false
Compliance	<a href="#">mandatory</a>	This method must be implemented.

<b>getAssetContentRecord</b>		
<b>Description</b>	Gets the record corresponding to the given AssetContent record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The assetRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(assetRecordType) is true.	
<b>Parameters</b>	<code>osid.type.Type</code>	assetContentContentInterfaceType the type of the record to retrieve
<b>Return</b>	<code>osid.repository.AssetContentRecord</code>	the asset content record
<b>Errors</b>	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNSUPPORTED</code>	<code>assetContentRecordType</code> is null unable to complete request authorization failure occurred <code>hasRecordType(assetContentRecordType)</code> is false
<b>Compliance</b>	<code>mandatory</code>	This method must be implemented.

Interface	<b>osid.repository.AssetContentRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an AssetContent. The methods specified by the record type are available through the underlying object.	
<b>getAssetContent</b>		
<b>Description</b>	Gets the AssetContent from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetContent</a>	the asset content
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetContentQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidQuery</a>		
<b>Description</b>	This is the query interface for searching asset contents. Each method forms an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchAccessibilityType</b>		
<b>Description</b>	Sets the accessibility types for this query. Supplying multiple types behaves like a boolean OR among the elements.	accessibilityType	an accessibilityType
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		accessibilityType is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchAnyAccessibility</b>		
<b>Description</b>	Matches asset content that has any accessibility type.		
<b>Parameters</b>	boolean	match	true to match content with any accessibility type, false to match content with no accessibility type
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchDataLength</b>		
<b>Description</b>	Matches content whose length of the data are inclusive of the given range.		
<b>Parameters</b>	cardinal	low	low range
	cardinal	high	high range
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">INVALID_ARGUMENT</a>		low is greater than high
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchAnyDataLength</b>		
<b>Description</b>	Matches content that has any data length.		
<b>Parameters</b>	boolean	match	true to match content with any data length, false to match content with no data length
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchData</b>		
<b>Description</b>	Matches data in this content.		
<b>Parameters</b>	byte[]	data	list of matching strings
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		data is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchAnyData</b>		
<b>Description</b>	Matches content that has any data.		
<b>Parameters</b>	boolean	match	true to match content with any data, false to match content with no data
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	matchURL				
Description	Sets the url for this query. Supplying multiple strings behaves like a boolean OR among the elements each which must correspond to the stringMatchType.				
Parameters	string[]	url	url string to match		
	osid.type.Type	stringMatchType	the string match type		
	boolean	match	true for a positive match, false for a negative match		
Errors	INVALID_ARGUMENT	url not of stringMatchType			
	NULL_ARGUMENT	url or stringMatchType is null			
	UNSUPPORTED	supportsStringMatchType(url) is false			
Compliance	mandatory	This method must be implemented.			
Method	matchAnyUrl				
Description	Matches content that has any url.				
Parameters	boolean	match	true to match content with any url, false to match content with no url		
Compliance	mandatory	This method must be implemented.			
Method	getAssetContentQueryRecord				
Description	Gets the record query interface corresponding to the given AssetContent record Type. Multiple record retrievals produce a nested OR term.				
Parameters	osid.type.Type	assetContentRecordType	an asset content record type		
Return	osid.repository.AssetContentQueryRecord		the asset content query record		
Errors	NULL_ARGUMENT	assetContentRecordType is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authorization failure occurred			
	UNSUPPORTED	hasRecordType(assetContentRecordType) is false			
Compliance	mandatory	This method must be implemented.			

Interface	<b>osid.repository.AssetContentQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an AssetContentQuery. The methods specified by the record type are available through the underlying object.	
<b>getAssetContentQuery</b>		
<b>Description</b>	Gets the AssetContentQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetContentQuery</a>	the asset content query
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetContentForm</b>	
<b>Implements</b>	<a href="#">osid.OsidForm</a>	
<b>Description</b>	This is the form for creating and updating content for AssetContent. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the AssetAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.	
<b>Method</b>	<b>getAccessibilityTypeMetadata</b>	
<b>Description</b>	Gets the metadata for an accessibility type.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the accessibility types
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>addAccessibilityType</b>	
<b>Description</b>	Adds an accessibility type. Multiple types can be added.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	accessibilityType
	<a href="#">INVALID_ARGUMENT</a>	accessibilityType is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	accessibilityType is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>removeAccessibilityType</b>	
<b>Description</b>	Removes an accessibility type.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	accessibilityType
	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
<b>Errors</b>	<a href="#">NOT_FOUND</a>	accessibility type not found
	<a href="#">NULL_ARGUMENT</a>	accessibilityType is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearAccessibilityTypes</b>	
<b>Description</b>	Removes all accessibility types.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getDataMetadata</b>	
<b>Description</b>	Gets the metadata for the content data.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the content data
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>setContentData</b>	
<b>Description</b>	Sets the content data.	
<b>Parameters</b>	<a href="#">osid.transport.DataInputStream</a>	data
	<a href="#">INVALID_ARGUMENT</a>	data is invalid
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isReadOnly() is true
	<a href="#">NULL_ARGUMENT</a>	data is null
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>clearContentData</b>	
<b>Description</b>	Removes the content data.	
<b>Errors</b>	<a href="#">NO_ACCESS</a>	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getURLMetadata</b>	
<b>Description</b>	Gets the metadata for the url.	
<b>Return</b>	<a href="#">osid.Metadata</a>	metadata for the url
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Method	setURL	
<b>Description</b>	Sets the url.	
<b>Parameters</b>	string url	the new copyright
<b>Errors</b>	INVALID_ARGUMENT	url is invalid
	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	url is null
<b>Compliance</b>	mandatory	This method must be implemented.
Method	clearURL	
<b>Description</b>	Removes the url.	
<b>Errors</b>	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
<b>Compliance</b>	mandatory	This method must be implemented.
Method	getAssetContentFormRecord	
<b>Description</b>	Gets the AssetContentFormRecord interface corresponding to the given asset content record interface Type.	
<b>Parameters</b>	osid.type.Type assetContentRecordType	an asset content record type
<b>Return</b>	osid.repository.AssetContentFormRecord	the asset content form record
<b>Errors</b>	NULL_ARGUMENT	assetContentRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasRecordType(assetContentRecordType) is false
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetContentFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for an AssetForm. The methods specified by the record type are available through the underlying object.	
<b>getAssetContentForm</b>		
<b>Description</b>	Gets the AssetContentForm from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.AssetContentForm</a>	the asset content form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetContentList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, AssetContentList provides a means for accessing AssetContent elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (acl.hasNext()) {     AssetContent content = acl.getNextAssetContent(); }</pre> <p>or</p> <pre>while (acl.hasNext()) {     AssetContent[] content = acl.getNextAssetContents(acl.available()); }</pre>	
<b>Method</b>	<b>getNextAssetContent</b>	
<b>Description</b>	Gets the next AssetContent in this list.	
<b>Return</b>	<a href="#">osid.repository.AssetContent</a>	the next AssetContent in this list. The hasNext() method should be used to test that a next AssetContent is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	no more elements available in this list
	<a href="#">OPERATION_FAILED</a>	unable to complete request
<b>Compliance</b>	<b>mandatory</b>	
<b>Method</b>	<b>getNextAssetContents</b>	
<b>Description</b>	Gets the next set of AssetContents in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	cardinal	n
<b>Return</b>	<a href="#">osid.repository.AssetContent[]</a>	an array of AssetContent elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	no more elements available in this list
	<a href="#">OPERATION_FAILED</a>	unable to complete request
<b>Compliance</b>	<b>mandatory</b>	

<b>Interface</b>	<b>osid.repository.AssetCredit</b>	
<b>Implements</b>		
	An AssetCredit is the relationship between a Resource and an Asset with respect to its production. The Resource is generally a person and the Type may indicate ""author"", ""composer"", ""director"", ""grip"", etc.	
<b>Description</b>	<p>An alias is used when the primary resource worked or appeared in the asset under another name. An alias for Samuel Clemens may indicate Mark Twain, or an alias for Sean Connery may indicate James Bond.</p> <p>Two credits are unique if their type, resource or alias differ. The sequence number exists for the purpose of specifying an order to the credits. The sequence may not be continuous and the provider may change the sequence numbers at any time.</p>	
<b>Method</b>	<b>getSequence</b>	
<b>Description</b>	Gets the sequence of this credit.	
<b>Return</b>	<b>cardinal</b>	the sequence of this credit
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getType</b>	
<b>Description</b>	Gets the Type of this credit.	
<b>Return</b>	<b>osid.type.Type</b>	the type of this credit
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>isPrincipal</b>	
<b>Description</b>	Tests if this is a principal credit.	
<b>Return</b>	<b>boolean</b>	true if this is a principal credit, false otherwise
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getResourceId</b>	
<b>Description</b>	Gets the Resource Id.	
<b>Return</b>	<b>osid.id.Id</b>	the resource Id
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getResource</b>	
<b>Description</b>	Gets the Resource.	
<b>Return</b>	<b>osid.resource.Resource</b>	the resource
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getAliasId</b>	
<b>Description</b>	Gets the Resource Id of the alias. If there is no alias defined for this credit, then getResourceId() is returned.	
<b>Return</b>	<b>osid.id.Id</b>	the resource Id
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.
<b>Method</b>	<b>getAlias</b>	
<b>Description</b>	Gets the Resource of the alias.	
<b>Return</b>	<b>osid.resource.Resource</b>	the resource
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetCreditQuery</b>		
<b>Implements</b>			
<b>Description</b>	This is the query interface for searching asset credits. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchType</b>		
<b>Description</b>	Sets the credit type for this query.		
<b>Parameters</b>	<a href="#">osid.type.Type</a>	type	asset credit type
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		type is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchPrincipal</b>		
<b>Description</b>	Matches a principal credit.		
<b>Parameters</b>	boolean	match	true for a positive match, false for a negative match
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchResourceId</b>		
<b>Description</b>	Sets the resource Id or alias Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	resourceId	the resource Id
	boolean	match	true for a positive match, false for a negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		providerId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsResourceQuery</b>		
<b>Description</b>	Tests if a ResourceQuery is available. Each query retrieved is a nested OR term.		
<b>Return</b>	<a href="#">boolean</a>		true if a resource query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getResourceQuery</b>		
<b>Description</b>	Gets the query interface for the resource or alias. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.resource.ResourceQuery</a>		the resource query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsResourceQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsResourceQuery() is true.

Interface	osid.repository.AssetCreditList	
Implements	<a href="#">osid.OsidList</a>	
Description	<p>Like all OsidLists, AssetCreditList provides a means for accessing AssetCredit elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (acl.hasNext()) {     AssetCredit credit = acl.getNextAssetCredit(); }</pre> <p>or</p> <pre>while (acl.hasNext()) {     AssetCredit[] credit = acl.getNextAssetCredits(acl.available()); }</pre>	
Method	<b>getNextAssetCredit</b>	
Description	Gets the next AssetCredit in this list.	
Return	<a href="#">osid.repository.AssetCredit</a>	the next AssetCredit in this list. The hasNext() method should be used to test that a next AssetCredit is available before calling this method.
Errors	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getNextAssetCredits</b>	
Description	Gets the next set of AssetCredits in this list which must be less than or equal to the return from available().	
Parameters	<a href="#">cardinal</a>	n the number of AssetCredit elements requested which must be less than or equal to available()
Return	<a href="#">osid.repository.AssetCredit[]</a>	an array of AssetCredit elements. The length of the array is less than or equal to the number specified.
Errors	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
Compliance	<a href="#">mandatory</a>	This method must be implemented.

Interface	osid.repository.AssetAlternate	
Implements		
Description	An AssetAlternate contains an alternative asset for another asset.	
Method	<b>getAccessibilityType</b>	
Description	Gets the accessibility criteria this alternative meets.	
Return	<a href="#">osid.type.Type</a>	the accessibility type
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getDescription</b>	
Description	Gets a description pertaining to how this alternative differs from or meets an accessibility requirement of the primary asset.	
Return	<a href="#">osid.type.Type</a>	the type of this credit
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getPrimaryAssetId</b>	
Description	Gets the Id of the primary asset in this asset group. The primary asset may differ from the asset requested if the asset requested was not the primary asset in this group.	
Return	<a href="#">osid.id.Id</a>	the primary Asset Id
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getPrimaryAsset</b>	
Description	Gets the primary asset in this asset group. The primary asset may differ from the asset requested if the asset requested was not the primary asset in this group.	
Return	<a href="#">osid.repository.Asset</a>	the primary Asset
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAlternativeAssetId</b>	
Description	Gets the Id of the alternative asset.	
Return	<a href="#">osid.id.Id</a>	the alternative Asset Id
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getAlternativeAsset</b>	
Description	Gets the alternative asset.	
Return	<a href="#">osid.repository.Asset</a>	the alternative Asset
Errors	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure
Compliance	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getGrade</b>	
Description	Gets a rating measuring the fit of the alternative asset to the primary asset.	
Return	<a href="#">osid.grading.Grade</a>	a grade
Compliance	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.AssetAlternateList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, AssetAlternateList provides a means for accessing AssetAlternate elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (aal.hasNext()) {     AssetAlternate alt = aal.getNextAssetAlternate(); }</pre> <p>or</p> <pre>while (aal.hasNext()) {     AssetAlternate[] alts = aal.getNextAssetAlternates(aal.available()); }</pre>	
<b>Method</b>	<b>getNextAssetAlternate</b>	
<b>Description</b>	Gets the next AssetAlternate in this list.	
<b>Return</b>	<a href="#">osid.repository.AssetAlternate</a>	the next AssetAlternate in this list. The hasNext() method should be used to test that a next AssetAlternate is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	
<b>Method</b>	<b>getNextAssetAlternates</b>	
<b>Description</b>	Gets the next set of AssetCredits in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	<a href="#">cardinal</a>	n the number of AssetAlternate elements requested which must be less than or equal to available()
<b>Return</b>	<a href="#">osid.repository.AssetAlternate[]</a>	
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	
<b>Compliance</b>	<a href="#">mandatory</a>	

<b>Interface</b>	<b>osid.repository.Subject</b>	
<b>Implements</b>	<a href="#">osid.OsidObject</a>	
<b>Description</b>	A Subject represents an authenticatable identity. Like all OSID objects, a Subject is identified by its Id and any persisted references should use the Id.	
<b>getSubjectRecord</b>		
<b>Description</b>	Gets the record corresponding to the given Subject record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The subjectRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(subjectRecordType) is true.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectRecordType a subject record type
<b>Return</b>	<a href="#">osid.repository.SubjectRecord</a>	the subject record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	subjectRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(subjectRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.SubjectRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a Subject. The methods specified by the record type are available through the underlying object.	
<b>getSubject</b>		
<b>Description</b>	Gets the Subject from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.Subject</a>	the subject
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidQuery</a>		
<b>Description</b>	This is the query interface for searching subjects. Each method match specifies an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchAssetId</b>		
<b>Description</b>	Sets the asset Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the asset Id
	boolean	match	true if a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		assetId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsAssetQuery</b>		
<b>Description</b>	Tests if an AssetQuery is available.		
<b>Return</b>	boolean		true if an asset query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getAssetQuery</b>		
<b>Description</b>	Gets the query interface for an asset. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.AssetQuery</a>		the asset query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsAssetQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsAssetQuery() is true.
<b>Method</b>	<b>matchAnyAsset</b>		
<b>Description</b>	Matches subjects that has any asset mapping.		
<b>Parameters</b>	boolean	match	true to match subjects with any asset, false to match subjects with no asset
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchRepositoryId</b>		
<b>Description</b>	Sets the repository Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	a repository Id
	boolean	match	true if a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		repositoryId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsRepositoryQuery</b>		
<b>Description</b>	Tests if a RepositoryQuery is available.		
<b>Return</b>	boolean		true if a repository query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getRepositoryQuery</b>		
<b>Description</b>	Gets the query interface for a repository. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.RepositoryQuery</a>		the repository query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsRepositoryQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsRepositoryQuery() is true.
<b>Method</b>	<b>matchCompositionId</b>		
<b>Description</b>	Sets the composition Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the composition Id
	boolean	match	true if a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		compositionId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	supportsCompositionQuery		
<b>Description</b>	Tests if a CompositionQuery is available.		
<b>Return</b>	<a href="#">boolean</a>		true if a composition query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getCompositionQuery		
<b>Description</b>	Gets the query interface for a composition. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.CompositionQuery</a>		the composition query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsCompositionQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsCompositionQuery() is true.
Method	matchAnyComposition		
<b>Description</b>	Matches subjects that has any composition mapping.		
<b>Parameters</b>	<a href="#">boolean</a>	match	true to match subjects with any composition, false to match subjects with no composition
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getSubjectQueryRecord		
<b>Description</b>	Gets the record query interface corresponding to the given Subject record Type. Multiple record retrievals produce a nested OR term.		
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectRecordType	a subject record type
<b>Return</b>	<a href="#">osid.repository.SubjectQueryRecord</a>		the subject query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		subjectRecordType is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure occurred
	<a href="#">UNSUPPORTED</a>		hasRecordType(subjectRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Interface	<b>osid.repository.SubjectQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a SubjectQuery. The methods specified by the record type are available through the underlying object.	
<b>getSubjectQuery</b>		
<b>Description</b>	Gets the SubjectQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.SubjectQuery</a>	the subject query
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectForm</b>	
<b>Implements</b>	<a href="#">osid.OsidForm</a>	
<b>Description</b>	This is the form for creating and updating Subjects. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the SubjectAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.	
<b>Method</b>	<b>getSubjectFormRecord</b>	
<b>Description</b>	Gets the SubjectFormRecord interface corresponding to the given subejct record interface Type.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectRecordType a subject record type
<b>Return</b>	<a href="#">osid.repository.SubjectFormRecord</a>	the record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	subjectRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(subjectRecordType) is false
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a SubjectForm. The methods specified by the record type are available through the underlying object.	
<b>getSubjectForm</b>		
<b>Description</b>	Gets the SubjectForm from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.SubjectForm</a>	the subject form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<i>Interface</i>	<b>osid.repository.SubjectSearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>getSubjectSearchOrderRecord</b>	
<b>Description</b>	Gets the subject search order record corresponding to the given subject record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectRecordType
<b>Return</b>	<a href="#">osid.repository.SubjectSearchOrderRecord</a>	the subject search order record interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	subjectRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(subjectRecordType) is false
<b>Compliance</b>	mandatory	This method must be implemented.

Interface	osid.repository.SubjectSearchOrderRecord	
Implements	<a href="#">osid.OsidRecord</a>	
Description	A record for a SubjectSearchOrder. The methods specified by the record type are available through the underlying object.	
<b>getSubjectSearchOrder</b>		
Description	Gets the SubjectSearchOrder from which this record originated.	
Return	<a href="#">osid.repository.SubjectSearchOrder</a>	the subject search order
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectSearch</b>				
<b>Implements</b>	<a href="#">osid.OsidSearch</a>				
<b>Description</b>	The interface for governing subject searches.				
<b>Method</b>	<b>searchWithinSubjectResults</b>				
<b>Description</b>	Execute this search using a previous search result.				
<b>Parameters</b>	<a href="#">osid.repository.SubjectSearchResults</a>	results	results from a query		
<b>Errors</b>	INVALID_ARGUMENT		results is not valid		
	NULL_ARGUMENT		results is null		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>searchAmongSubjects</b>				
<b>Description</b>	Execute this search among the given list of subjects.				
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	subjectIds	list of subjects		
<b>Errors</b>	NULL_ARGUMENT		subjectIds is null		
	UNSUPPORTED		subjectSearchOrder is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>orderSubjectResults</b>				
<b>Description</b>	Specify an ordering to the search results.				
<b>Parameters</b>	<a href="#">osid.repository.SubjectSearchOrder</a>	subjectSearchOrder	subject search order		
<b>Errors</b>	NULL_ARGUMENT		subjectSearchOrder is null		
	UNSUPPORTED		subjectSearchOrder is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>getSubjectSearchRecord</b>				
<b>Description</b>	Gets the record corresponding to the given subject search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.				
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectSearchRecordType	a subject search record type		
<b>Return</b>	<a href="#">osid.repository.SubjectSearchRecord</a>		the subject search interface		
<b>Errors</b>	NULL_ARGUMENT		subjectSearchRecordType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure occurred		
	UNSUPPORTED		hasSearchRecordType(subjectSearchRecordType) is false		
<b>Compliance</b>	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.SubjectSearchRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a SubjectSearch. The methods specified by the record type are available through the underlying object.	
	<b>getSubjectSearch</b>	
<b>Description</b>	Gets the SubjectSearch from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.SubjectSearch</a>	the subject search
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectSearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getSubjects</b>	
<b>Description</b>	Gets the subject list resulting from a search.	
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	the subject list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getSubjectSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given subject search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	subjectSearchRecordType a subject search record type
<b>Return</b>	<a href="#">osid.repository.SubjectSearchResultsRecord</a>	the subject search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	subjectSearchRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasSearchRecordType(subjectSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectSearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a SubjectSearchResults. The methods specified by the record type are available through the underlying object.	
<b>getSubjectSearchResults</b>		
<b>Description</b>	Gets the SubjectSearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.SubjectSearchResults</a>	the subject search results
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectReceiver</b>		
<b>Implements</b>	<a href="#">osid.OsidReceiver</a>		
<b>Description</b>	The subject receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Subject objects.		
<b>Method</b>	<b>newSubject</b>		
<b>Description</b>	The callback for notifications of new subjects.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the new Subject
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newAncestorSubject</b>		
<b>Description</b>	The callback for notifications of new subject ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the new Subject ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newDescendantSubject</b>		
<b>Description</b>	The callback for notifications of new subject descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject
	<a href="#">osid.id.Id</a>	descendantId	the Id of the new Subject descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>changedSubject</b>		
<b>Description</b>	The callback for notification of updated subjects.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the updated Subject
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedSubject</b>		
<b>Description</b>	the callback for notification of deleted subjects.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the deleted Subject
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedAncestorSubject</b>		
<b>Description</b>	The callback for notifications of deleted subject ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the removed Subject ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedDescendantSubject</b>		
<b>Description</b>	The callback for notifications of deleted subject descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the Id of the Subject
	<a href="#">osid.id.Id</a>	descendantId	the Id of the removed Subject descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.SubjectList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, SubjectList provides a means for accessing Subject elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (sl.hasNext()) {     Subject subject = sl.getNextSubject(); }</pre> <p>or</p> <pre>while (sl.hasNext()) {     Subject[] subjects = sl.getNextSubjects(sl.available()); }</pre>	
<b>Method</b>	<b>getNextSubject</b>	
<b>Description</b>	Gets the next Subject in this list.	
<b>Return</b>	<a href="#">osid.repository.Subject</a>	the next Subject in this list. The hasNext() method should be used to test that a next Subject is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getNextSubjects</b>	
<b>Description</b>	Gets the next set of Subject elements in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	cardinal	n
<b>Return</b>	<a href="#">osid.repository.Subject[]</a>	an array of Subject elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.Repository</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalog</a>	
<b>Description</b>	A repository defines a collection of assets.	
	<b>getRepositoryRecord</b>	
<b>Description</b>	Gets the record corresponding to the given Repository record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The repositoryRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(repositoryRecordType) is true.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>   repositoryRecordType	a repository record type
<b>Return</b>	<a href="#">osid.repository.RepositoryRecord</a>	the repository record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	repositoryRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(repositoryRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.RepositoryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a Repository. The methods specified by the record type are available through the underlying object.	
<b>getRepository</b>		
<b>Description</b>	Gets the Repository from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the repository
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidCatalogQuery</a>		
<b>Description</b>	This is the query interface for searching repositories. Each method specifies an AND term while multiple invocations of the same method produce a nested OR.		
<b>Method</b>	<b>matchAssetId</b>		
<b>Description</b>	Sets the asset Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	a asset Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		assetId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsAssetQuery</b>		
<b>Description</b>	Tests if an AssetQuery is available.		
<b>Return</b>	boolean		true if an asset query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getAssetQuery</b>		
<b>Description</b>	Gets the query interface for an asset. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.AssetQuery</a>		the asset query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsAssetQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsAssetQuery() is true.
<b>Method</b>	<b>matchSubjectId</b>		
<b>Description</b>	Sets the subject Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the subject Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		subjectId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsSubjectQuery</b>		
<b>Description</b>	Tests if an SubjectQuery is available.		
<b>Return</b>	boolean		true if a subject query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getSubjectQuery</b>		
<b>Description</b>	Gets the query interface for a subject. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.SubjectQuery</a>		the subject query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsSubjectQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsSubjectQuery() is true.
<b>Method</b>	<b>matchCompositionId</b>		
<b>Description</b>	Sets the composition Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	a composition Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		compositionId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

Method	<b>supportsCompositionQuery</b>	
<b>Description</b>	Tests if a CompositionQuery is available.	
<b>Return</b>	<a href="#">boolean</a>	true if a composition query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
Method	<b>getCompositionQuery</b>	
<b>Description</b>	Gets the query interface for a composition. Multiple retrievals produce a nested OR term.	
<b>Return</b>	<a href="#">osid.repository.CompositionQuery</a>	the composition query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>	supportsCompositionQuery() is false
<b>Compliance</b>	<a href="#">optional</a>	This method must be implemented if supportsCompositionQuery() is true.
Method	<b>getRepositoryQueryRecord</b>	
<b>Description</b>	Gets the record query interface corresponding to the given Repository record Type. Multiple record retrievals produce a nested OR term.	
<b>Parameters</b>	<a href="#">osid.type.Type</a> repositoryRecordType	a repository record type
<b>Return</b>	<a href="#">osid.repository.RepositoryQueryRecord</a>	the repository query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	repositoryRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(repositoryRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.RepositoryQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a RepositoryQuery. The methods specified by the record type are available through the underlying object.	
<b>getRepositoryQuery</b>		
<b>Description</b>	Gets the RepositoryQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.RepositoryQuery</a>	the repository query
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryForm</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalogForm</a>	
<b>Description</b>	This is the form for creating and updating repositories. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the RepositoryAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.	
<b>Method</b>	<b>getRepositoryFormRecord</b>	
<b>Description</b>	Gets the RepositoryFormRecord interface corresponding to the given repository record interface Type.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryRecordType a repository record type
<b>Return</b>	<a href="#">osid.repository.RepositoryFormRecord</a>	the record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	repositoryRecordType is null
		unable to complete request
		authorization failure occurred
		hasRecordType(repositoryRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a RepositoryForm. The methods specified by the record type are available through the underlying object.	
<b>getRepositoryForm</b>		
<b>Description</b>	Gets the RepositoryForm from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.RepositoryForm</a>	the repository form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<i>Interface</i>	<b>osid.repository.RepositorySearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidCatalogSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>getRepositorySearchOrderRecord</b>	
<b>Description</b>	Gets the repository search order record corresponding to the given repository record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositoryRecordType a repository record type
<b>Return</b>	<a href="#">osid.repository.RepositorySearchOrderRecord</a>	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	repositoryRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(repositoryRecordType) is false
<b>Compliance</b>	mandatory	This method must be implemented.

Interface	osid.repository.RepositorySearchOrderRecord	
Implements	<a href="#">osid.OsidRecord</a>	
Description	A record for a RepositorySearchOrder. The methods specified by the record type are available through the underlying object.	
<b>getRepositorySearchOrder</b>		
Description	Gets the RepositorySearchOrder from which this record originated.	
Return	<a href="#">osid.repository.RepositorySearchOrder</a>	the repository search order
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositorySearch</b>				
<b>Implements</b>	<a href="#">osid.OsidSearch</a>				
<b>Description</b>	The interface for governing repository searches.				
<b>Method</b>	<b>searchWithinRepositoryResults</b>				
<b>Description</b>	Execute this search using a previous search result.				
<b>Parameters</b>	<a href="#">osid.repository.RepositorySearchResults</a>	results	results from a query		
<b>Errors</b>	INVALID_ARGUMENT		results is not valid		
	NULL_ARGUMENT		results is null		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>searchAmongRepositories</b>				
<b>Description</b>	Execute this search among the given list of repositories.				
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	repositoryIds	list of repositories		
<b>Errors</b>	NULL_ARGUMENT		repositoryIds is null		
	UNSUPPORTED		repositoryIds is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>orderRepositoryResults</b>				
<b>Description</b>	Specify an ordering to the search results.				
<b>Parameters</b>	<a href="#">osid.repository.RepositorySearchOrder</a>	repositorySearchOrder	repository search order		
<b>Errors</b>	NULL_ARGUMENT		repositorySearchOrder is null		
	UNSUPPORTED		repositorySearchOrder is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>getRepositorySearchRecord</b>				
<b>Description</b>	Gets the record corresponding to the given repository search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.				
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositorySearchRecordType	a repository search record type		
<b>Return</b>	<a href="#">osid.repository.RepositorySearchRecord</a>		the repository search interface		
<b>Errors</b>	NULL_ARGUMENT		repositorySearchRecordType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure occurred		
	UNSUPPORTED		hasSearchRecordType(repositorySearchRecordType) is false		
<b>Compliance</b>	mandatory	This method must be implemented.			

Interface	osid.repository.RepositorySearchRecord	
Implements	<a href="#">osid.OsidSearchRecord</a>	
Description	A record for a RepositorySearch. The methods specified by the record type are available through the underlying object.	
<b>getRepositorySearch</b>		
Description	Gets the RepositorySearch from which this record originated.	
Return	<a href="#">osid.repository.RepositorySearch</a>	the repository search
Compliance	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositorySearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getRepositories</b>	
<b>Description</b>	Gets the repository list resulting from a search.	
<b>Return</b>	<a href="#">osid.repository.RepositoryList</a>	the repository list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getRepositorySearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given repository search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	repositorySearchRecordType a repository search record type
<b>Return</b>	<a href="#">osid.repository.RepositorySearchResultsRecord</a>	the repository search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	repositorySearchRecordType is null
		unable to complete request
		authorization failure occurred
		hasSearchRecordType(repositorySearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

Interface	<b>osid.repository.RepositorySearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a RepositorySearchResults. The methods specified by the record type are available through the underlying object.	
	<b>getRepositorySearchResults</b>	
<b>Description</b>	Gets the RepositorySearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.RepositorySearchResults</a>	the repository search results
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryReceiver</b>		
<b>Implements</b>	<a href="#">osid.OsidReceiver</a>		
<b>Description</b>	The repository receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Repository objects.		
<b>Method</b>	<b>newRepository</b>		
<b>Description</b>	The callback for notifications of new repositories.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the new Repository
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newAncestorRepository</b>		
<b>Description</b>	The callback for notifications of new repository ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the new Repository ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newDescendantRepository</b>		
<b>Description</b>	The callback for notifications of new repository descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository
	<a href="#">osid.id.Id</a>	descendantId	the Id of the new Repository descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>changedRepository</b>		
<b>Description</b>	The callback for notification of updated repositories.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the updated Repository
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedRepository</b>		
<b>Description</b>	The callback for notification of deleted repositories.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the deleted Repository
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedAncestorRepository</b>		
<b>Description</b>	The callback for notifications of deleted repository ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the removed Repository ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedDescendantRepository</b>		
<b>Description</b>	The callback for notifications of deleted repository descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the Id of the Repository
	<a href="#">osid.id.Id</a>	descendantId	the Id of the removed Repository descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.RepositoryList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, RepositoryList provides a means for accessing Repository elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (rl.hasNext()) {     Repository repository = rl.getNextRepository(); }</pre> <p>or</p> <pre>while (rl.hasNext()) {     Repository[] repositories = rl.getNextRepositories(rl.available()); }</pre>	
<b>Method</b>	<b>getNextRepository</b>	
<b>Description</b>	Gets the next Repository in this list.	
<b>Return</b>	<a href="#">osid.repository.Repository</a>	the next Repository in this list. The hasNext() method should be used to test that a next Repository is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getNextRepositories</b>	
<b>Description</b>	Gets the next set of Repository elements in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	<a href="#">cardinal</a>	n the number of Repository elements requested which must be less than or equal to available()
<b>Return</b>	<a href="#">osid.repository.Repository[]</a>	an array of Repository elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a> <a href="#">OPERATION_FAILED</a>	no more elements available in this list unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.Composition</b>	
<b>Implements</b>	<a href="#">osid.OsidObject</a>	
<b>Description</b>	A Composition represents an authenticatable identity. Like all OSID objects, a Composition is identified by its Id and any persisted references should use the Id.	
	<b>getCompositionRecord</b>	
<b>Description</b>	Gets the record corresponding to the given Composition record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces. The compositionRecordType may be the Type returned in getRecordTypes() or any of its parents in a Type hierarchy where hasRecordType(compositionRecordType) is true.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionRecordType a composition record type
<b>Return</b>	<a href="#">osid.repository.CompositionRecord</a>	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	compositionRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasInterfaceType(compositionRecordType) is false
<b>Compliance</b>	mandatory This method must be implemented.	

Interface	<b>osid.repository.CompositionRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a Composition. The methods specified by the record type are available through the underlying object.	
<b>getComposition</b>		
<b>Description</b>	Gets the Composition from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.Composition</a>	the composition
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionQuery</b>		
<b>Implements</b>	<a href="#">osid.OsidQuery</a>		
<b>Description</b>	This is the query interface for searching compositions. Each method specifies an AND term while multiple invocations of the same method produces a nested OR.		
<b>Method</b>	<b>matchAssetId</b>		
<b>Description</b>	Sets the asset Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the asset Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		assetId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsAssetQuery</b>		
<b>Description</b>	Tests if an AssetQuery is available.		
<b>Return</b>	boolean		true if an asset query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getAssetQuery</b>		
<b>Description</b>	Gets the query interface for an asset. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.AssetQuery</a>		the asset query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsAssetQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsAssetQuery() is true.
<b>Method</b>	<b>matchAnyAsset</b>		
<b>Description</b>	Matches compositions that has any asset mapping.		
<b>Parameters</b>	boolean	match	true to match compositions with any asset, false to match compositions with no asset
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>matchRepositoryId</b>		
<b>Description</b>	Sets the repository Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	repositoryId	the repository Id
	boolean	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		repositoryId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>supportsRepositoryQuery</b>		
<b>Description</b>	Tests if a RepositoryQuery is available.		
<b>Return</b>	boolean		true if a repository query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>getRepositoryQuery</b>		
<b>Description</b>	Gets the query interface for a repository. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.RepositoryQuery</a>		the repository query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsRepositoryQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsRepositoryQuery() is true.

Method	matchSubjectId		
<b>Description</b>	Sets the subject Id for this query.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	subjectId	the subject Id
	<a href="#">boolean</a>	match	true for a positive match, false for negative match
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		subjectId is null
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	supportsSubjectQuery		
<b>Description</b>	Tests if an SubjectQuery is available.		
<b>Return</b>	<a href="#">boolean</a>		true if a subject query interface is available, false otherwise
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getSubjectQuery		
<b>Description</b>	Gets the query interface for a subject. Multiple retrievals produce a nested OR term.		
<b>Return</b>	<a href="#">osid.repository.SubjectQuery</a>		the subject query
<b>Errors</b>	<a href="#">UNIMPLEMENTED</a>		supportsSubjectQuery() is false
<b>Compliance</b>	<a href="#">optional</a>		This method must be implemented if supportsSubjectQuery() is true.
Method	matchAnySubject		
<b>Description</b>	Matches compositions that has any subject mapping.		
<b>Parameters</b>	<a href="#">boolean</a>	match	true to match compositions with any subject, false to match compositions with no subject
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
Method	getCompositionQueryRecord		
<b>Description</b>	Gets the record query interface corresponding to the given Composition record Type. Multiple retrievals produce a nested OR term.		
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionRecordType	a composition record type
<b>Return</b>	<a href="#">osid.repository.CompositionQueryRecord</a>		the composition query record
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>		compositionRecordType is null
	<a href="#">OPERATION_FAILED</a>		unable to complete request
	<a href="#">PERMISSION_DENIED</a>		authorization failure occurred
	<a href="#">UNSUPPORTED</a>		hasRecordType(compositionRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionQueryRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a CompositionQuery. The methods specified by the record type are available through the underlying object.	
<b>getCompositionQuery</b>		
<b>Description</b>	Gets the CompositionQuery from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.CompositionQuery</a>	the composition query
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionForm</b>									
<b>Implements</b>	<a href="#">osid.OsidForm</a>									
<b>Description</b>	This is the form for creating and updating Compositions. Like all OsidForm objects, various data elements may be set here for use in the create and update methods in the CompositionAdminSession. For each data element that may be set, metadata may be examined to provide display hints or data constraints.									
<b>Method</b>	<b>getCompositionFormRecord</b>									
<b>Description</b>	Gets the CompositionFormRecord interface corresponding to the given repository record interface Type.									
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionRecordType a composition record type								
<b>Return</b>	<a href="#">osid.repository.CompositionFormRecord</a>	the record								
<b>Errors</b>	<table> <tr> <td><a href="#">NULL_ARGUMENT</a></td> <td>compositionRecordType is null</td> </tr> <tr> <td><a href="#">OPERATION_FAILED</a></td> <td>unable to complete request</td> </tr> <tr> <td><a href="#">PERMISSION_DENIED</a></td> <td>authorization failure occurred</td> </tr> <tr> <td><a href="#">UNSUPPORTED</a></td> <td>hasRecordType(compositionRecordType) is false</td> </tr> </table>		<a href="#">NULL_ARGUMENT</a>	compositionRecordType is null	<a href="#">OPERATION_FAILED</a>	unable to complete request	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred	<a href="#">UNSUPPORTED</a>	hasRecordType(compositionRecordType) is false
<a href="#">NULL_ARGUMENT</a>	compositionRecordType is null									
<a href="#">OPERATION_FAILED</a>	unable to complete request									
<a href="#">PERMISSION_DENIED</a>	authorization failure occurred									
<a href="#">UNSUPPORTED</a>	hasRecordType(compositionRecordType) is false									
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.								

<b>Interface</b>	<b>osid.repository.CompositionFormRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a CompositionForm. The methods specified by the record type are available through the underlying object.	
<b>getCompositionForm</b>		
<b>Description</b>	Gets the CompositionForm from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.CompositionForm</a>	the composition form
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSearchOrder</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchOrder</a>	
<b>Description</b>	An interface for specifying the ordering of search results.	
<b>Method</b>	<b>getRepositorySearchOrderRecord</b>	
<b>Description</b>	Gets the composition search order record corresponding to the given repository record Type. Multiple retrievals return the same underlying object.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionRecordType a composition record type
<b>Return</b>	<a href="#">osid.repository.CompositionSearchOrderRecord</a>	
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a>	compositionRecordType is null
	<a href="#">OPERATION_FAILED</a>	unable to complete request
	<a href="#">PERMISSION_DENIED</a>	authorization failure occurred
	<a href="#">UNSUPPORTED</a>	hasRecordType(compositionRecordType) is false
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSearchOrderRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidRecord</a>	
<b>Description</b>	A record for a CompositionSearchOrder. The methods specified by the record type are available through the underlying object.	
	<b>getCompositionSearchOrder</b>	
<b>Description</b>	Gets the CompositionSearchOrder from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.CompositionSearchOrder</a>	the composition search order
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSearch</b>				
<b>Implements</b>	<a href="#">osid.OsidSearch</a>				
<b>Description</b>	The interface for governing composition searches.				
<b>Method</b>	<b>searchWithinCompositionResults</b>				
<b>Description</b>	Execute this search using a previous search result.				
<b>Parameters</b>	<a href="#">osid.repository.CompositionSearchResults</a>	results	results from a query		
<b>Errors</b>	INVALID_ARGUMENT		results is not valid		
	NULL_ARGUMENT		results is null		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>searchAmongCompositions</b>				
<b>Description</b>	Execute this search among the given list of compositions.				
<b>Parameters</b>	<a href="#">osid.id.IdList</a>	compositionIds	list of compositions		
<b>Errors</b>	NULL_ARGUMENT		compositionIds is null		
	UNSUPPORTED		compositionSearchOrder is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>orderCompositionResults</b>				
<b>Description</b>	Specify an ordering to the search results.				
<b>Parameters</b>	<a href="#">osid.repository.CompositionSearchOrder</a>	compositionSearchOrder	composition search order		
<b>Errors</b>	NULL_ARGUMENT		compositionSearchOrder is null		
	UNSUPPORTED		compositionSearchOrder is not of this service		
<b>Compliance</b>	mandatory	This method must be implemented.			
<b>Method</b>	<b>getCompositionSearchRecord</b>				
<b>Description</b>	Gets the record corresponding to the given composition search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.				
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionSearchRecordType	a composition search record type		
<b>Return</b>	<a href="#">osid.repository.CompositionSearchRecord</a>				
<b>Errors</b>	NULL_ARGUMENT		compositionSearchRecordType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure occurred		
	UNSUPPORTED		hasSearchRecordType(compositionSearchRecordType) is false		
<b>Compliance</b>	mandatory	This method must be implemented.			

<b>Interface</b>	<b>osid.repository.CompositionSearchRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a CompositionSearch. The methods specified by the record type are available through the underlying object.	
<b>getCompositionSearch</b>		
<b>Description</b>	Gets the CompositionSearch from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.CompositionSearch</a>	the composition search
<b>Compliance</b>	mandatory	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSearchResults</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchResults</a>	
<b>Description</b>	This interface provides a means to capture results of a search and is used as a vehicle to perform a search within a previous result set.	
<b>Method</b>	<b>getCompositions</b>	
<b>Description</b>	Gets the composition list resulting from a search.	
<b>Return</b>	<a href="#">osid.repository.SubjectList</a>	the subject list
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getCompositionSearchResultsRecord</b>	
<b>Description</b>	Gets the record corresponding to the given composition search record Type. This method must be used to retrieve an object implementing the requested record interface along with all of its ancestor interfaces.	
<b>Parameters</b>	<a href="#">osid.type.Type</a>	compositionSearchRecordType
<b>Return</b>	<a href="#">osid.repository.CompositionSearchResultsRecord</a>	the composition search interface
<b>Errors</b>	<a href="#">NULL_ARGUMENT</a> <a href="#">OPERATION_FAILED</a> <a href="#">PERMISSION_DENIED</a> <a href="#">UNSUPPORTED</a>	compositionSearchRecordType is null
		unable to complete request
		authorization failure occurred
		hasSearchRecordType(compositionSearchRecordType) is false
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionSearchResultsRecord</b>	
<b>Implements</b>	<a href="#">osid.OsidSearchRecord</a>	
<b>Description</b>	A record for a CompositionSearchResults. The methods specified by the record type are available through the underlying object.	
	<b>getCompositionSearchResults</b>	
<b>Description</b>	Gets the CompositionSearchResults from which this record originated.	
<b>Return</b>	<a href="#">osid.repository.CompositionSearchResults</a>	the composition search results
<b>Compliance</b>	<b>mandatory</b>	This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionReceiver</b>		
<b>Implements</b>	<a href="#">osid.OsidReceiver</a>		
<b>Description</b>	The composition receiver is the consumer supplied interface for receiving notifications pertaining to new, updated or deleted Composition objects.		
<b>Method</b>	<b>newComposition</b>		
<b>Description</b>	The callback for notifications of new compositions.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the new Composition
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newCompositionAsset</b>		
<b>Description</b>	The callback for notifications of new assets in the composition.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the new Asset
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newCompositionAncestor</b>		
<b>Description</b>	The callback for notifications of new composition ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the new Composition ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>newCompositionDescendant</b>		
<b>Description</b>	The callback for notifications of new composition descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition
	<a href="#">osid.id.Id</a>	descendantId	the Id of the new Composition descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>changedComposition</b>		
<b>Description</b>	The callback for notification of updated compositions.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the updated Composition
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedComposition</b>		
<b>Description</b>	the callback for notification of deleted compositions.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the deleted Composition
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedCompositionAsset</b>		
<b>Description</b>	The callback for notifications of deleted assets from this composition.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	assetId	the Id of the removed Asset
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedCompositionAncestor</b>		
<b>Description</b>	The callback for notifications of deleted composition ancestors.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition
	<a href="#">osid.id.Id</a>	ancestorId	the Id of the removed Composition ancestor
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.
<b>Method</b>	<b>deletedCompositionDescendant</b>		
<b>Description</b>	The callback for notifications of deleted composition descendants.		
<b>Parameters</b>	<a href="#">osid.id.Id</a>	compositionId	the Id of the Composition
	<a href="#">osid.id.Id</a>	descendantId	the Id of the removed Composition descendant
<b>Compliance</b>	<a href="#">mandatory</a>		This method must be implemented.

<b>Interface</b>	<b>osid.repository.CompositionList</b>	
<b>Implements</b>	<a href="#">osid.OsidList</a>	
<b>Description</b>	<p>Like all OsidLists, CompositionList provides a means for accessing Composition elements sequentially either one at a time or many at a time. Examples:</p> <pre>while (cl.hasNext()) {     Composition composition = cl.getNextComposition(); }</pre> <p>or</p> <pre>while (cl.hasNext()) {     Composition[] compositions = cl.getNextCompositions(cl.available()); }</pre>	
<b>Method</b>	<b>getNextComposition</b>	
<b>Description</b>	Gets the next Composition in this list.	
<b>Return</b>	<a href="#">osid.repository.Composition</a>	the next Composition in this list. The hasNext() method should be used to test that a next Composition is available before calling this method.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	no more elements available in this list
	<a href="#">OPERATION_FAILED</a>	unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.
<b>Method</b>	<b>getNextCompositions</b>	
<b>Description</b>	Gets the next set of Composition elements in this list which must be less than or equal to the return from available().	
<b>Parameters</b>	<a href="#">cardinal</a>	<a href="#">n</a>
	the number of Composition elements requested which must be less than or equal to available()	
<b>Return</b>	<a href="#">osid.repository.Composition[]</a>	an array of Composition elements. The length of the array is less than or equal to the number specified.
<b>Errors</b>	<a href="#">ILLEGAL_STATE</a>	no more elements available in this list
	<a href="#">OPERATION_FAILED</a>	unable to complete request
<b>Compliance</b>	<a href="#">mandatory</a>	This method must be implemented.