



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>

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

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.

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

Method	supportsAssetAlternativeAssignment	
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	supportsAssetCredit	
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	supportsAssetCreditAssignment	
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	supportsTemporalAssets	
Description	Tests if assets support temporal coverage.	
Return	boolean	true if temporal coverage supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	supportsAssetTemporalAssignment	
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	supportsSpatialAssets	
Description	Tests if assets support spatial coverage.	
Return	boolean	true if spatial coverage supported, false otherwise
Compliance	mandatory	This method must be implemented.
Method	supportsAssetSpatialAssignment	
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	supportsAssetComposition	
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	supportsAssetCompositionAssignment	
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	supportsSubjectLookup	
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	supportsSubjectSearch	
Description	Tests if subject search is supported.	
Return	boolean	true if subject search is supported, false otherwise
Compliance	mandatory	This method must be implemented.

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

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

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

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

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

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

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

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

Method	getAssetTemporalAssignmentSession	
Description	Gets the session for assigning temporal coverage to an asset.	
Return	osid.repository.AssetTemporalAssignmentSession	an AssetTemporalAssignmentSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsAssetTemporalAssignment() is false
Compliance	optional	This method must be implemented if supportsAssetTemporalAssignment() is true.
Method	getAssetSpatialSession	
Description	Gets the session for retrieving spatial coverage of an asset.	
Return	osid.repository.AssetSpatialSession	an AssetSpatialSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSpatialAssets() is false
Compliance	optional	This method must be implemented if supportsSpatialAssets() is true.
Method	getAssetSpatialAssignmentSession	
Description	Gets the session for assigning spatial coverage to an asset.	
Return	osid.repository.AssetSpatialAssignmentSession	an AssetSpatialAssignmentSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsAssetSpatialAssignment() is false
Compliance	optional	This method must be implemented if supportsAssetSpatialAssignment() is true.
Method	getAssetCompositionSession	
Description	Gets the session for retrieving asset compositions.	
Return	osid.repository.AssetCompositionSession	an AssetCompositionSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsAssetComposition() is false
Compliance	optional	This method must be implemented if supportsAssetComposition() is true.
Method	getAssetCompositionAssignmentSession	
Description	Gets the session for creating asset compositions.	
Return	osid.repository.AssetCompositionAssignmentSession	an AssetCompositionAssignmentSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsAssetCompositionAssignment() is false
Compliance	optional	This method must be implemented if supportsAssetCompositionAssignment() is true.
Method	getSubjectLookupSession	
Description	Gets the OsidSession associated with the subject lookup service.	
Return	osid.repository.SubjectLookupSession	the new SubjectLookupSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsSubjectLookup() is false
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
Return	osid.repository.SubjectLookupSession	the new SubjectLookupSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request 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 UNIMPLEMENTED	unable to complete request 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
Return	osid.repository.SubjectSearchSession	a SubjectSearchSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request 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 UNIMPLEMENTED	unable to complete request 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
Return	osid.repository.SubjectAdminSession	a SubjectSearchSession
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED UNIMPLEMENTED	repositoryId not found repositoryId is null unable to complete request supportsSubjectAdmin() or supportsVisibleFederation() is false
Compliance	optional	This method must be implemented if supportsSubjectAdmin() and supportsVisibleFederation() are true.

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

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

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

Method	getCompositionNotificationSession	
Description	Gets the notification session for notifications pertaining to composition changes.	
Parameters	<code>osid.repository.CompositionReceiver</code>	receiver the notification callback
Return	<code>osid.repository.CompositionNotificationSession</code>	a CompositionNotificationSession
Errors	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	receiver is null unable to complete request supportsCompositionNotification() is false
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionNotification() is true.
Method	getCompositionNotificationSessionForRepository	
Description	Gets the composition notification session for the given repository.	
Parameters	<code>osid.repository.CompositionReceiver</code>	receiver the notification callback
	<code>osid.id.Id</code>	repositoryId the Id of the repository
Return	<code>osid.repository.CompositionNotificationSession</code>	a CompositionNotificationSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionNotification() and supportsVisibleFederation() are true.
Method	getCompositionHierarchySession	
Description	Gets the session traversing composition hierarchies.	
Return	<code>osid.repository.CompositionHierarchySession</code>	a CompositionHierarchySession
Errors	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionHierarchy() is false
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionHierarchy() is true.
Method	getCompositionHierarchyDesignSession	
Description	Gets the session designing composition hierarchies.	
Return	<code>osid.repository.CompositionHierarchyDesignSession</code>	a CompositionHierarchyDesignSession
Errors	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionHierarchyDesign() is false
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionHierarchyDesign() is true.
Method	getCompositionRepositorySession	
Description	Gets the session for retrieving composition to repository mappings.	
Return	<code>osid.repository.CompositionRepositorySession</code>	a CompositionRepositorySession
Errors	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionRepository() is false
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionRepository() is true.
Method	getCompositionRepositoryAssignmentSession	
Description	Gets the session for assigning composition to repository mappings.	
Return	<code>osid.repository.CompositionRepositoryAssignmentSession</code>	a CompositionRepositoryAssignmentSession
Errors	<code>OPERATION_FAILED</code> <code>UNIMPLEMENTED</code>	unable to complete request supportsCompositionRepositoryAssignment() is false
Compliance	<code>optional</code>	This method must be implemented if supportsCompositionRepositoryAssignment() is true.

Method	getCompositionSubjectSession	
Description	Gets the session for retrieving composition to subject mappings.	
Return	osid.repository.CompositionSubjectSession	a CompositionSubjectSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsCompositionSubject() is false
Compliance	optional	This method must be implemented if supportsCompositionSubject() is true.
Method	getCompositionSubjectAssignmentSession	
Description	Gets the session for assigning composition to subject mappings.	
Return	osid.repository.CompositionSubjectAssignmentSession	a CompositionSubjectAssignmentSession
Errors	OPERATION_FAILED	unable to complete request
	UNIMPLEMENTED	supportsCompositionSubjectAssignment() is false
Compliance	optional	This method must be implemented if supportsCompositionSubjectAssignment() is true.
Method	getResourceManager	
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.RepositoryProxyManager
Implements	osid.OsidProxyManager osid.repository.RepositoryProfile
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"> • AssetLookupSession: a session to retrieve assets • AssetSearchSession: a session to search for assets • AssetAdminSession: a session to create and delete assets • AssetNotificationSession: a session to receive notifications pertaining to asset changes • AssetRepositorySession: a session to look up asset to repository mappings • AssetRepositoryAssignmentSession: a session to manage asset to repository mappings • AssetCreditSession: a session to look up asset credits • AssetCreditAssignmentSession: a session to manage asset credits • AssetTemporalSession: a session to access the temporal coverage of an asset • AssetTemporalAssignmentSession: a session to manage the temporal coverage of an asset • AssetSpatialSession: a session to access the spatial coverage of an asset • AssetSpatialAssignmentSession: a session to manage the spatial coverage of an asset • SubjectLookupSession: a session to retrieve subjects • SubjectSearchSession: a session to search for subjects • SubjectAdminSession: a session to create and delete subjects • SubjectNotificationSession: a session to receive notifications pertaining to subjects changes • SubjectHierarchySession: a session to traverse a hierarchy of subjects • SubjectHierarchyDesignSession: a session to manage a subject hierarchy • SubjectRepositorySession: a session to look up subject to repository mappings • SubjectRepositoryAssignmentSession: a session to manage subject to repository mappings • RepositoryLookupSession: a session to retrieve repositories • RepositorySearchSession: a session to search for repositories • RepositoryAdminSession: a session to create, update and delete repositories • RepositoryNotificationSession: a session to receive notifications pertaining to changes in repositories • RepositoryHierarchySession: a session to traverse repository hierarchies • RepositoryHierarchyDesignSession: a session to manage repository hierarchies • CompositionLookupSession: a session to retrieve compositions • CompositionSearchSession: a session to search for compositions • CompositionAdminSession: a session to create, update and delete compositions • CompositionNotificationSession: a session to receive notifications pertaining to changes in compositions • CompositionHierarchySession: a session to traverse composition hierarchies • CompositionHierarchyDesignSession: a session to manage composition hierarchies <p>In addition to these sessions, repository leverages other service definitions to fulfill its service.</p> <ul style="list-style-type: none"> • ResourceManager: provides the interfaces to find, create and modify resources known to this service

Method	getAssetLookupSession		
Description	Gets the OsidSession associated with the asset lookup service.		
Parameters	osid.authentication.Authentication	authentication	proxy authentication
Return	osid.repository.AssetLookupSession		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	osid.repository.AssetLookupSession		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	osid.repository.AssetSearchSession		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	osid.repository.AssetSearchSession		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	getAssetAdminSession	
Description	Gets an asset administration session for creating, updating and deleting assets.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetAdminSession</code>	an AssetAdminSession
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>supportsAssetAdmin()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<code>optional</code>	This method must be implemented if <code>supportsAssetAdmin()</code> is true.
Method	getAssetAdminSessionForRepository	
Description	Gets an asset administration session for the given repository.	
Parameters	<code>osid.id.Id</code>	repositoryId the Id of the repository
	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetAdminSession</code>	an AssetAdminSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if <code>supportsAssetAdmin()</code> and <code>supportsVisibleFederation()</code> are true.
Method	getAssetNotificationSession	
Description	Gets the notification session for notifications pertaining to asset changes.	
Parameters	<code>osid.repository.AssetReceiver</code>	receiver notification callback
	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetNotificationSession</code>	an AssetNotificationSession
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>supportsAssetNotification()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<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	getAssetSubjectAssignmentSession	
Description	Gets the session for assigning asset to subject mappings.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetSubjectAssignmentSession</code>	an AssetSubjectAssignmentSession
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>supportsAssetSubjectAssignment()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<code>optional</code>	This method must be implemented if <code>supportsAssetSubjectAssignment()</code> is true.
Method	getAssetAlternativeSession	
Description	Gets the session for retrieving asset alternatives.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetAlternativeSession</code>	an AssetAlternativeSession
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>supportsAssetAlternative()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<code>optional</code>	This method must be implemented if <code>supportsAssetAlternative()</code> is true.
Method	getAssetAlternativeAssignmentSession	
Description	Gets the session for assigning asset alternatives.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetAlternativeAssignmentSession</code>	an AssetAlternativeAssignmentSession
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>supportsAssetAlternativeAssignment()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<code>optional</code>	This method must be implemented if <code>supportsAssetAlternativeAssignment()</code> is true.
Method	getAssetCreditSession	
Description	Gets the session for retrieving asset credits.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.AssetCreditSession</code>	an AssetCreditSession
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>supportsAssetCredit()</code> is false
	<code>UNSUPPORTED</code>	the authentication service is not supported
Compliance	<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		
Parameters	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		
Parameters	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	getSubjectAdminSessionForRepository				
Description	Gets a subject administrative session for the given repository.				
Parameters	osid.id.Id	repositoryId	the Id of the repository		
	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.SubjectAdminSession				
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	supportsSubjectAdmin() or supportsVisibleFederation() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional				
Method	getSubjectNotificationSession				
Description	Gets the notification session for notifications pertaining to subject changes.				
Parameters	osid.repository.SubjectReceiver	receiver	notification callback		
	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.SubjectNotificationSession				
Errors	NULL_ARGUMENT	receiver or authentication is null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectNotification() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional				
Method	getSubjectNotificationSessionForRepository				
Description	Gets the subject notification session for the given repository.				
Parameters	osid.repository.SubjectReceiver	receiver	notification callback		
	osid.id.Id	repositoryId	the Id of the repository		
	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.SubjectNotificationSession				
Errors	NOT_FOUND	repositoryId not found			
	NULL_ARGUMENT	receiver, repositoryId or authentication s null			
	OPERATION_FAILED	unable to complete request			
	PERMISSION_DENIED	authentication is invalid			
	UNIMPLEMENTED	supportsSubjectNotification() or supportsVisibleFederation() is false			
	UNSUPPORTED	the authentication service is not supported			
Compliance	optional				

Method	getSubjectHierarchySession				
Description	Gets the subject hierarchy traversal session.				
Parameters	osid.authentication.Authentication	authentication	proxy authentication		
Return	osid.repository.SubjectHierarchySession		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	osid.repository.SubjectHierarchyDesignSession		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	osid.repository.SubjectRepositorySession		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	osid.repository.SubjectRepositoryAssignmentSession		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	
Description	Gets the repository lookup session.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.RepositoryLookupSession</code>	a RepositoryLookupSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if supportsRepositoryLookup() is true.
Method	getRepositorySearchSession	
Description	Gets the repository search session.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.RepositorySearchSession</code>	a RepositorySearchSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if supportsRepositorySearch() is true.
Method	getRepositoryAdminSession	
Description	Gets the repository administrative session for creating, updating and deleting repositories.	
Parameters	<code>osid.authentication.Authentication</code>	authentication proxy authentication
Return	<code>osid.repository.RepositoryAdminSession</code>	a RepositoryAdminSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if supportsRepositoryAdmin() is true.
Method	getRepositoryNotificationSession	
Description	Gets the notification session for subscribing to changes to a repository.	
Parameters	<code>osid.repository.RepositoryReceiver</code> <code>osid.authentication.Authentication</code>	receiver notification callback authentication proxy authentication
Return	<code>osid.repository.RepositoryNotificationSession</code>	a RepositoryNotificationSession
Errors	<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
Compliance	<code>optional</code>	This method must be implemented if supportsRepositoryNotification() is true.

Method	getRepositoryHierarchySession		
Description	Gets the repository hierarchy traversal session.		
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.RepositoryHierarchySession</code>		
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>	supportsRepositoryHierarchy() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
Compliance	<code>optional</code>		This method must be implemented if supportsRepositoryHierarchy() is true.
Method	getRepositoryHierarchyDesignSession		
Description	Gets the repository hierarchy design session.		
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.RepositoryHierarchyDesignSession</code>		
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>	supportsRepositoryHierarchyDesign() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
Compliance	<code>optional</code>		This method must be implemented if supportsRepositoryHierarchyDesign() is true.
Method	getCompositionLookupSession		
Description	Gets the OsidSession associated with the composition lookup service.		
Parameters	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionLookupSession</code>		
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>	supportsCompositionLookup() is false	
	<code>UNSUPPORTED</code>	the authentication service is not supported	
Compliance	<code>optional</code>		This method must be implemented if supportsCompositionLookup() is true.
Method	getCompositionLookupSessionForRepository		
Description	Gets the OsidSession associated with the composition lookup service for the given repository.		
Parameters	<code>osid.id.Id</code>	repositoryId	the Id of the repository
	<code>osid.authentication.Authentication</code>	authentication	proxy authentication
Return	<code>osid.repository.CompositionLookupSession</code>		
Errors	<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	
Compliance	<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	getCompositionNotificationSession				
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>	supportsCompositionNotification() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
Compliance	<code>optional</code>				
This method must be implemented if supportsCompositionNotification() is true.					
Method	getCompositionNotificationSessionForRepository				
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>	supportsCompositionNotification() or supportsVisibleFederation() is false			
Errors	<code>UNSUPPORTED</code>	the authentication service is not supported			
	<code>optional</code>				
	This method must be implemented if supportsCompositionNotification() and supportsVisibleFederation() are true.				
Method	getCompositionHierarchySession				
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>	supportsCompositionHierarchy() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
Compliance	<code>optional</code>				
This method must be implemented if supportsCompositionHierarchy() is true.					
Method	getCompositionHierarchyDesignSession				
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>	supportsCompositionHierarchyDesign() is false			
	<code>UNSUPPORTED</code>	the authentication service is not supported			
Compliance	<code>optional</code>				
This method must be implemented if supportsCompositionHierarchyDesign() is true.					

Method	getCompositionRepositorySession	
Description	Gets the session for retrieving composition to repository mappings.	
Parameters	osid.authentication.Authentication	authentication proxy 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	getCompositionRepositoryAssignmentSession	
Description	Gets the session for assigning composition to repository mappings.	
Parameters	osid.authentication.Authentication	authentication proxy 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	getCompositionSubjectSession	
Description	Gets the session for retrieving composition to subject mappings.	
Parameters	osid.authentication.Authentication	authentication proxy 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	getCompositionSubjectAssignmentSession	
Description	Gets the session for assigning composition to subject mappings.	
Parameters	osid.authentication.Authentication	authentication proxy 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	getResourceManager	
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	osid.OsidSession	
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition • 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. • 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. <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	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canLookupAssets	
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	boolean	false if lookup methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useComparativeAssetView	
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	mandatory	This method is must be implemented.
Method	usePlenaryAssetView	
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	mandatory	This method is must be implemented.

Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	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	getAsset	
Description	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.	
Parameters	osid.id.Id	assetId
Return	osid.repository.Asset	
Errors	NOT_FOUND	no Asset found with 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	getAssetsByIds	
Description	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.	
Parameters	osid.id.IdList	assetIdList
Return	osid.repository.AssetList	
Errors	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	assetIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAssetsByGenusType	
Description	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.	
Parameters	osid.type.Type	assetGenusType
Return	osid.repository.AssetList	
Errors	NULL_ARGUMENT	assetGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAssetsByParentGenusType	
Description	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.	
Parameters	osid.type.Type	assetGenusType
Return	osid.repository.AssetList	
Errors	NULL_ARGUMENT	assetGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	getAssetsByRecordType	
Description	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.	
Parameters	osid.type.Type	assetRecordType an asset record type
Return	osid.repository.AssetList	the returned Asset list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetInterfaceType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAssets	
Description	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.	
Return	osid.repository.AssetList	a list of Assets
Errors	OPERATION_FAILED PERMISSION_DENIED	unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetSearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching among Asset objects. The search query is constructed using the AssetQuery interface. Multiple AssetQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single AssetQuery, these elements form a boolean AND.</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"> • federated repository view: searches include assets in repositories of which this repository is an ancestor in the repository hierarchy • isolated repository view: searches are restricted to assets in this repository <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>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canSearchAssets	
Description	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.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	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	getAssetQuery	
Description	Gets an asset query interface.	
Return	osid.repository.AssetQuery	the asset query interface
Compliance	mandatory	This method must be implemented.

Method	getAssetsByQuery	
Description	Gets a list of Assets matching the given search interface. Each element in the array is OR'd.	
Parameters	osid.repository.AssetQuery[] assetQueries	the search query array
Return	osid.repository.AssetList	the returned AssetList
Errors	NULL_ARGUMENT	assetQueries is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	an assetQuery is not of this service
Compliance	mandatory	This method must be implemented.
Method	getAssetSearch	
Description	Gets an asset search interface.	
Return	osid.repository.AssetSearch	the asset search interface
Compliance	mandatory	This method must be implemented.
Method	getAssetSearchOrder	
Description	Gets an asset search order interface. The AssetSearchOrder is supplied to an AssetSearch to specify the ordering of results.	
Return	osid.repository.AssetSearchOrder	the asset search order interface
Compliance	mandatory	This method must be implemented.
Method	getAssetsBySearch	
Description	Gets the search results matching the given search query using the given search. Each element in the query array is OR'd.	
Parameters	osid.repository.AssetQuery[] assetQueries	the search query array
	osid.repository.AssetSearch assetSearch	the search interface
Return	osid.repository.AssetSearchResults	the returned search results
Errors	NULL_ARGUMENT	assetQueries or assetSearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	an assetQuery or assetSearch is not of this service
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetAdminSession	
Implements	osid.OsidSession	
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	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.

Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
PERMISSION_DENIED		authorization failure
Compliance	mandatory	This method must be implemented.
Method	canCreateAssets	
Description	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.	
Return	boolean	false if Asset creation is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canCreateAssetWithRecordTypes	
Description	Tests if this user can create a single Asset using the desired record interface types. While RepositoryManager.getAssetRecordTypes() can be used to examine which record interfaces 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.	
Parameters	osid.type.Type[] assetRecordTypes	array of types
Return	boolean	true if Asset creation using the specified record Types is supported, false otherwise
Errors	NULL_ARGUMENT	assetRecordTypes is null
Compliance	mandatory	This method must be implemented.
Method	getAssetFormForCreate	
Description	Gets the asset form for creating new assets. A new form should be requested for each create transaction.	
Return	osid.repository.AssetForm	the asset form
Compliance	mandatory	This method must be implemented.
Method	createAsset	
Description	Creates a new Asset.	
Parameters	osid.repository.AssetForm assetForm	the form for this Asset
Return	osid.repository.Asset	the new Asset
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	assetForm is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	assetForm is not of this service
Compliance	mandatory	This method must be implemented.
Method	canUpdateAssets	
Description	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.	
Return	boolean	false if Asset modification is not authorized, true otherwise
Compliance	mandatory	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		assetId is not found
	NULL_ARGUMENT		assetId is null
	OPERATION_FAILED		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		the form contains an invalid value
	NOT_FOUND		assetId is not found
	NULL_ARGUMENT		assetId or assetForm is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
	UNSUPPORTED		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		
Description	Deletes an Asset.		
Parameters	osid.id.Id	assetId	the Id of the Asset to remove
Errors	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	addIdToAsset		
Description	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.		
Parameters	osid.id.Id	assetId	the Id of an Asset
	osid.id.Id	aliasId	the alias Id
Errors	ALREADY_EXISTS		aliasId is already assigned
	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId or aliasId is null
	OPERATION_FAILED		unable to complete request
Compliance	PERMISSION_DENIED		authorization failure
	mandatory		This method must be implemented.
Method	canCreateAssetContent		
Description	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.		
Parameters	osid.id.Id	assetId	the Id of an Asset
Return	boolean		false if Asset content creation is not authorized, true otherwise
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Method	canCreateAssetContentWithRecordTypes		
Description	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.		
Parameters	osid.type.Type[]	assetContentRecordTypes	array of types
Return	boolean		true if AssetContent creation using the specified Types is supported, false otherwise
Errors	NULL_ARGUMENT		assetContentRecordTypes is null
Compliance	mandatory		This method must be implemented.
Method	getAssetContentFormForCreate		
Description	Gets an asset content form for creating new assets.		
Return	osid.repository.AssetContentForm		the asset content form
Compliance	mandatory		This method must be implemented.

Method	createAssetContent		
Description	Creates new AssetContent for a given asset.		
Parameters	osid.id.Id	assetId	the Id of the Asset to associate with this content
	osid.repository.AssetContentForm	assetContentForm	the form for this AssetContent
Return	osid.repository.AssetContent		the new AssetContent
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		assetContentForm is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
	UNSUPPORTED		assetContentForm is not of this service
Compliance	mandatory		This method must be implemented.
Method	canUpdateAssetContents		
Description	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.		
Return	boolean		false if AssetContent modification is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	canUpdateAssetContent		
Description	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.		
Parameters	osid.id.Id	assetId	the Id of the Asset
Return	boolean		false if asset content modification is not authorized, true otherwise
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Provider Notes	available.		
Method	getAssetContentFormForUpdate		
Description	Gets the asset form for updating content for an existing asset. A new asset content form should be requested for each update transaction.		
Parameters	osid.id.Id	assetId	the Id of the Asset
	osid.id.Id	assetContentId	the Id of the AssetContent
Return	osid.repository.AssetContentForm		the asset content form
Errors	NOT_FOUND		assetId or assetContentId is not found
	NULL_ARGUMENT		assetId or assetContentId is null
	OPERATION_FAILED		unable to complete request
Compliance	mandatory		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.			

Interface	osid.repository.AssetNotificationSession	
Implements	osid.OsidSession	
Description	<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>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canRegisterForAssetNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedRepositoryView	
Description	Isolates the view for methods in this session. An isolated view restricts notifications to this repository only.	
Compliance	mandatory	This method is must be implemented.
Method	registerForNewAssets	
Description	Register for notifications of new assets. AssetReceiver.newAsset() is invoked when a new Asset is appears in this repository.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForChangedAssets	
Description	Registers for notification of updated assets. AssetReceiver.changedAsset() is invoked when an asset in this repository is changed.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	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	osid.OsidSession	
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition 	
Method	useComparativeRepositoryView	
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	mandatory	This method is must be implemented.
Method	usePlenaryRepositoryView	
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	mandatory	This method is must be implemented.
Method	canLookupAssetRepositoryMappings	
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	boolean	false if looking up mappings is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getAssetIdsByRepository	
Description	Gets the list of Asset Ids associated with a Repository.	
Parameters	osid.id.Id	repositoryId
Return	osid.id.IdList	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	mandatory	This method must be implemented.
Method	getAssetsByRepository	
Description	Gets the list of Assets associated with a Repository.	
Parameters	osid.id.Id	repositoryId
Return	osid.repository.AssetList	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	mandatory	This method must be implemented.

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

Interface	osid.repository.AssetRepositoryAssignmentSession				
Implements	osid.OsidSession				
Description	<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>				
Method	canAssignAssets				
Description	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.				
Return	boolean	false if mapping is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	assignAssetToRepository				
Description	Adds an existing Asset to a Repository.				
Parameters	osid.id.Id	assetId	the Id of the Asset		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		assetId or repositoryId not found		
	NULL_ARGUMENT		assetId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	unassignAssetFromRepository				
Description	Removes an Asset from a Repository.				
Parameters	osid.id.Id	assetId	the Id of the Asset		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		assetId or repositoryId not found		
	NULL_ARGUMENT		assetId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

Interface	osid.repository.AssetSubjectSession	
Implements	osid.OsidSession	
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition 	
Method	useComparativeAssetView	
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	mandatory	This method is must be implemented.
Method	usePlenaryAssetView	
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	mandatory	This method is must be implemented.
Method	canLookupAssetSubjects	
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	boolean	false if lookups are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getAssetIdsBySubject	
Description	Gets the list of Asset Ids associated with a Subject.	
Parameters	osid.id.Id	subjectId
Return	osid.id.IdList	list of matching asset Ids
Errors	NOT_FOUND	subjectId is 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	getAssetsBySubject	
Description	Gets the list of Assets associated with a Subject.	
Parameters	osid.id.Id	subjectId
Return	osid.repository.AssetList	list of matching assets
Errors	NOT_FOUND	subjectId is 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	getAssetIdsBySubjects	
Description	Gets the list of Asset Ids corresponding to a list of Subjects.	
Parameters	osid.id.IdList	subjectIdList
Return	osid.id.IdList	list of asset Ids
Errors	NULL_ARGUMENT	subjectIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	getAssetsBySubjects	
Description	Gets the list of Assets corresponding to a list of Subjects.	
Parameters	osid.id.IdList	subjectIdList
Return	osid.repository.AssetList	list of assets
Errors	NULL_ARGUMENT	subjectIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getSubjectIdsByAsset	
Description	Gets the Subject Ids mapped to an Asset.	
Parameters	osid.id.Id	assetId
Return	osid.id.IdList	list of subject Ids
Errors	NOT_FOUND	assetId is not found
	NULL_ARGUMENT	assetId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getSubjectsByAsset	
Description	Gets the Subjects mapped to an Asset.	
Parameters	osid.id.Id	assetId
Return	osid.repository.SubjectList	list of subjects
Errors	NOT_FOUND	assetId is not found
	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.AssetSubjectAssignmentSession		
Implements	osid.OsidSession		
Description	This session defines methods to assign assets to subjects.		
Method	canManageAssetSubjects		
Description	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.		
Return	boolean		false if asset subject management is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	assignAssetToSubject		
Description	Adds an asset to a subject.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.id.Id	subjectId	Id of the Subject
Errors	ALREADY_EXISTS		asset is already mapped to subject
	NOT_FOUND		assetId or subjectId is not found
	NULL_ARGUMENT		assetId or subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	unassignAssetFromSubject		
Description	Removes an asset from a subject.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.id.Id	subjectId	Id of the Subject
Errors	NOT_FOUND		assetId or subjectId is not found, or not mapped
	NULL_ARGUMENT		assetId or subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.AssetAlternativeSession	
Implements	osid.OsidSession	
Description	<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>	
Method	canLookupAssetAlternatives	
Description	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.	
Return	boolean	false if lookup methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getAlternativeAssets	
Description	Finds alternative assets corresponding to the given Asset Id.	
Parameters	osid.id.Id	assetId
	the Id of the Asset	
Return	osid.repository.AssetAlternateList	list of asset alternatives
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId not found
		assetId is null
		unable to complete request
		authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAlternativeAssetsByAccessibilityType	
Description	Finds alternative assets that have content corresponding the given accessibilitytype.	
Parameters	osid.id.Id	assetId
	the Id of the Asset	
	osid.type.Type	accessibilityType
	the Type indicating the accessibility requirement	
Return	osid.repository.AssetAlternateList	list of asset alternatives
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId not found
		assetId or accessibilityType is null
		unable to complete request
		authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetAlternativeAssignmentSession				
Implements	osid.OsidSession				
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	canManageAssetAlternatives				
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	boolean	false if mapping not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	assignAlternativeToAsset				
Description	Adds an existing asset as an alternative to another asset.				
Parameters	osid.id.Id	alternativeAssetId	the Id of the Asset alternative		
	osid.id.Id	primaryAssetId	the Id of the primary Asset		
	osid.type.Type	accessibilityType	accessibility type		
Errors	NOT_FOUND		primaryAssetId or alternativeAssetId not found		
	NULL_ARGUMENT		primaryAssetId, alternativeAssetId or accessibilityType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
	UNSUPPORTED		accessibilityType is not supported		
Compliance	mandatory	This method must be implemented.			
Method	unassignAlternativeFromAsset				
Description	Removes an alternative asset from an asset.				
Parameters	osid.id.Id	alternativeAssetId	the Id of the Asset alternative		
	osid.id.Id	primaryAssetId	the Id of the primary Asset		
	osid.type.Type	accessibilityType	accessibility type		
Errors	NOT_FOUND		primaryAssetId or alternativeAssetId not found		
	NULL_ARGUMENT		primaryAssetId or alternativeAssetId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	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

Interface	osid.repository.AssetCreditSession	
Implements	osid.OsidSession	
Description	This session defines methods for accessing the credits of an asset.	
Method	canLookupCredits	
Description	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.	
Return	boolean	false if lookups are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getPrincipalCredits	
Description	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.	
Parameters	osid.id.Id assetId	Id of the Asset to query
Return	osid.repository.AssetCreditList	the principal credits
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAllCredits	
Description	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.	
Parameters	osid.id.Id assetId	Id of the Asset to query
Return	osid.repository.AssetCreditList	all the credits
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAllCreditsByType	
Description	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.	
Parameters	osid.id.Id assetId osid.type.Type creditType	Id of the Asset to query type of the asset credit
Return	osid.repository.AssetCreditList	all the credits of the given type
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId or creditType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetCreditAssignmentSession				
Implements	osid.OsidSession				
Description	This session defines methods to assign credits to assets.				
Method	canManageCredits				
Description	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.				
Return	boolean	false if credit management is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	addCredit				
Description	Adds a credit to an asset.				
Parameters	osid.id.Id	assetId	Id of the Asset		
	osid.type.Type	creditType	type of the credit		
	osid.id.Id	resourceId	Id of the Resource representing a person or organization		
	osid.id.Id	aliasId	Id of the Resource representing an alias (such as an actor's role). Use resourceId if there is none.		
	boolean	principal	true if this is a principal credit. A principal credit is included in the return of getPrincipalCredits().		
	cardinal	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.		
Return	osid.repository.AssetCredit		the new credit		
Errors	ALREADY_EXISTS		a credit on this asset with the creditType, resourceId and aliasId already exists		
	NOT_FOUND		assetId, resourceId or aliasId is not found		
	NULL_ARGUMENT		null argument provided		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
	UNSUPPORTED		creditType is not supported		
Compliance	mandatory	This method must be implemented.			
Method	removeCredit				
Description	Removes a credit from an asset.				
Parameters	osid.id.Id	assetId	Id of the Asset		
	osid.type.Type	creditType	type of the asset credit		
	osid.id.Id	resourceId	Id of the Resource representing a person or organization		
	osid.id.Id	aliasId	Id of the Resource representing an alias (such as an actor's role)		
Return	osid.repository.AssetCreditList		all the credits of the given type		
Errors	NOT_FOUND		credit identified by assetId, creditType, resourceId and aliasId is not found		
	NULL_ARGUMENT		null argument provided		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

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

Interface	osid.repository.AssetTemporalSession	
Implements	osid.OsidSession	
Description	This session defines a means for accessing temporal coverage of an asset.	
Method	canLookupTemporalCoverage	
Description	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.	
Return	boolean	false if lookups are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getTemporalCoverage	
Description	Gets the temporal coverage related to the subject of this asset. Each element of the returned list	
Parameters	osid.id.Id assetId	Id of the Asset to query
Return	osid.calendaring.DateTimeIntervalList	a list of times relevant to the subject of this asset
Errors	NOT_FOUND	assetId is not found
	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.AssetTemporalAssignmentSession		
Implements	osid.OsidSession		
Description	This session defines methods to manage temporal coverage of an asset.		
Method	canManageTemporalCoverage		
Description	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.		
Return	boolean		false if temporal management is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	addTemporalCoverage		
Description	Adds a temporal coverage to this asset expressed as a range between two date/times.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.calendaring.DateTime	begin	start date/time
	osid.calendaring.DateTime	end	end date/time
Errors	ALREADY_EXISTS		interval already exists
	INVALID_ARGUMENT		begin is greater than end
	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId, begin or end is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	removeTemporalCoverage		
Description	Removes a temporal range from an asset.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.calendaring.DateTime	begin	start date/time
	osid.calendaring.DateTime	end	end date/time
Errors	NOT_FOUND		assetId with begin and end not found
	NULL_ARGUMENT		assetId, begin or end is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.AssetSpatialSession	
Implements	osid.OsidSession	
Description	This session defines methods to access spatial mappings of an asset.	
Method	canLookupSpatialCoverage	
Description	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.	
Return	boolean	false if spatial lookups are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getSpatialCoverage	
Description	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.	
Parameters	osid.id.Id	assetId
	Id of the Asset to query	
Return	osid.spatial.SpatialUnitList	a list of locations relevant to the subject of this asset
Errors	NOT_FOUND	assetId is not found
	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.AssetSpatialAssignmentSession		
Implements	osid.OsidSession		
Description	This session defines methods to manage the spatial coverage of an asset.		
Method	canManageSpatialCoverage		
Description	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.		
Return	boolean		false if spatial management is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	addSpatialCoverage		
Description	Adds a spatial coverage to an asset.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.spatial.SpatialUnit	spatialCoverage	spatial coverage
Errors	ALREADY_EXISTS		asset already contains this spatial coverage
	INVALID_ARGUMENT		spatialCoverage is invalid
	NOT_FOUND		assetId not found
	NULL_ARGUMENT		assetId or spatialCoverage is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	removeSpatialCoverage		
Description	Removes a spatial coverage from an asset.		
Parameters	osid.id.Id	assetId	Id of the Asset
	osid.spatial.SpatialUnit	spatialCoverage	spatial coverage
Errors	NOT_FOUND		assetId with spatialCoverage not found
	NULL_ARGUMENT		assetId or spatialCoverage is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.AssetCompositionSession	
Implements	osid.OsidSession	
Description	<p>represents a collection of Assets.</p> <p>This lookup session defines several views:</p> <ul style="list-style-type: none"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition • isolated view: only assets in the specified composition are accessible • federated view: includes assets in compositions that are descendants of the specified asset <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>	
Method	canAccessAssetCompositions	
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	boolean	false if lookup methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useComparativeAssetCompositionView	
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	mandatory	This method is must be implemented.
Method	usePlenaryAssetCompositionView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useFederatedAssetCompositionView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedAssetCompositionView	
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	getCompositionAssets	
Description	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.	
Parameters	osid.id.Id	compositionId
	Id of the Composition	
Return	osid.repository.AssetList	
	list of assets	
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 is must be implemented.

Method	getCompositionsByAsset	
Description	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.	
Parameters	osid.id.Id assetId	Id of the Asset
Return	osid.repository.CompositionList	the returned Composition list
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	assetId is not found assetId is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetCompositionAssignmentSession				
Implements	osid.OsidSession				
Description	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.				
Method	canComposeAssets				
Description	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.				
Return	boolean	false if asset composition is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	addAsset				
Description	Appends an asset to a composition.				
Parameters	osid.id.Id	assetId	Id of the Asset		
	osid.id.Id	compositionId	Id of the Composition		
Errors	ALREADY_EXISTS		composition already contains asset		
	NOT_FOUND		assetId or compositionId not found		
	NULL_ARGUMENT		assetId or compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	moveAssetAhead				
Description	Reorders assets in a composition by moving the specified asset in front of a reference asset.				
Parameters	osid.id.Id	assetId	Id of the Asset		
	osid.id.Id	compositionId	Id of the Composition		
	osid.id.Id	referenceId	Id of the reference Asset		
Errors	NOT_FOUND		assetId or referenceId not found in composition		
	NULL_ARGUMENT		assetId, referenceId or compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	moveAssetBehind				
Description	Reorders assets in a composition by moving the specified asset behind of a reference asset.				
Parameters	osid.id.Id	assetId	Id of the Asset		
	osid.id.Id	compositionId	Id of the Composition		
	osid.id.Id	referenceId	Id of the reference Asset		
Errors	NOT_FOUND		assetId or referenceId not found in composition		
	NULL_ARGUMENT		assetId, referenceId or compositionId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	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.	

Interface	osid.repository.SubjectLookupSession	
Implements	osid.OsidSession	
Description	<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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition • 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. • 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. <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>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canLookupSubjects	
Description	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.	
Return	boolean	false if lookup methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useComparativeSubjectView	
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	mandatory	This method is must be implemented.
Method	usePlenarySubjectView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	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
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
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
Return	osid.repository.SubjectList	the returned Subject list
Errors	NULL_ARGUMENT	subjectGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	mandatory	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
Return	osid.repository.SubjectList	the returned Subject list
Errors	NULL_ARGUMENT	subjectGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	mandatory	This method must be implemented.

Method	getSubjectsByRecordType	
Description	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.	
Parameters	<code>osid.type.Type</code>	subjectRecordType a subject record type
Return	<code>osid.repository.SubjectList</code>	the returned Subject list
Errors	<code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code>	subjectRecordType is null unable to complete request authorization failure
Compliance	<code>mandatory</code>	This method must be implemented.
Method	getSubjects	
Description	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.	
Return	<code>osid.repository.SubjectList</code>	a list of Subjects
Errors	<code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code>	unable to complete request authorization failure
Compliance	<code>mandatory</code>	This method must be implemented.

Interface	osid.repository.SubjectSearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching among Subject objects. The search query is constructed using the SubjectQuery interface. Multiple SubjectQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single SubjectQuery, these elements form a boolean AND.</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"> • federated repository view: searches include subjects in repositories of which this repository is an ancestor in the repository hierarchy • isolated repository view: searches are restricted to subjects in this repository <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>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canSearchSubjects	
Description	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.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	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	getSubjectQuery	
Description	Gets a subject query interface.	
Return	osid.repository.SubjectQuery	the subject query interface
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.SubjectAdminSession	
Implements	osid.OsidSession	
	<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() > newDescription.length()) or (metadata.getMaxStringSize() < 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	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	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 record interfaces 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	NULL_ARGUMENT		subjectId is null
Compliance	mandatory		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	osid.repository.SubjectForm		the subject form
Errors	NOT_FOUND		subjectId is not found
	NULL_ARGUMENT		subjectId is null
	OPERATION_FAILED		unable to complete request
Compliance	mandatory		This method must be implemented.
Method	updateSubject		
Description	Updates an existing subject.		
Parameters	osid.id.Id	subjectId	the Id of the Subject
	osid.repository.SubjectForm		the form containing the elements to be updated
Errors	INVALID_ARGUMENT		the form contains an invalid value
	NOT_FOUND		subjectId is not found
	NULL_ARGUMENT		subjectId or subjectForm is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
	UNSUPPORTED		subjectForm is not supported
Compliance	mandatory		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	mandatory		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	NULL_ARGUMENT		subjectId is null
Compliance	mandatory		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				
Description	Deletes a Subject.				
Parameters	osid.id.Id	subjectId	the Id of the Subject to remove		
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	addIdToSubject				
Description	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.				
Parameters	osid.id.Id	subjectId	the Id of a Subject		
	osid.id.Id	aliasId	the alias Id		
Errors	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		
Compliance	mandatory	This method must be implemented.			

Interface	osid.repository.SubjectNotificationSession	
Implements	osid.OsidSession	
Description	<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>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canRegisterForSubjectNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedRepositoryView	
Description	Isolates the view for methods in this session. An isolated view restricts notifications to this repository only.	
Compliance	mandatory	This method is must be implemented.
Method	registerForNewSubjects	
Description	Register for notifications of new subjects. SubjectReceiver.newSubject() is invoked when a new Subject is appears in this repository.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForNewSubjectAncestors	
Description	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.	
Parameters	osid.id.Id	subjectId
		the Id of the subject to monitor
Errors	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
Compliance	mandatory	This method must be implemented.

Method	registerForNewSubjectDescendants				
Description	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.				
Parameters	osid.id.Id	subjectId	the Id of the subject to monitor		
Errors	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		
Compliance	mandatory	This method must be implemented.			
Method	registerForChangedSubjects				
Description	Registers for notification of updated subjects. SubjectReceiver.changedSubject() is invoked when a subject in this repository is changed.				
Errors	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	registerForChangedSubject				
Description	Registers for notification of an updated subject. SubjectReceiver.changedSubject() is invoked when the specified subject in this repository is changed.				
Parameters	osid.id.Id	subjectId	the Id of the Subject to monitor		
Errors	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		
Compliance	mandatory	This method must be implemented.			
Method	registerForDeletedSubjects				
Description	Registers for notification of deleted subjects. SubjectReceiver.deletedSubject() is invoked when a subject 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	registerForDeletedSubject				
Description	Registers for notification of a deleted subject. SubjectReceiver.deletedSubject() is invoked when the specified subject is deleted or removed from this repository.				
Parameters	osid.id.Id	subjectId	the Id of the Subject to monitor		
Errors	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		
Compliance	mandatory	This method must be implemented.			
Method	registerForDeletedSubjectAncestors				
Description	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.				
Parameters	osid.id.Id	subjectId	the Id of the subject to monitor		
Errors	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		
Compliance	mandatory	This method must be implemented.			

Method	registerForDeletedSubjectDescendants	
Description	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.	
Parameters	<code>osid.id.Id</code>	subjectId the Id of the subject to monitor
Errors	<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
Compliance	<code>mandatory</code>	This method must be implemented.

Interface	osid.repository.SubjectHierarchySession	
Implements	osid.hierarchy.HierarchyTraversalSession	
Description	<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>	
Description	<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"> • comparative view: subjects may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition 	
Method	useComparativeSubjectView	
Description	<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>	
Compliance	mandatory	This method is must be implemented.
Method	usePlenarySubjectView	
Description	<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>	
Compliance	mandatory	This method is must be implemented.
Method	getRootSubjects	
Description	<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>	
Return	osid.repository.SubjectList	the root subjects
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method is must be implemented.
Method	getParentSubjects	
Description	<p>Gets the parents of the given subject.</p>	
Parameters	osid.id.Id	subjectId
Return	osid.repository.SubjectList	the parents 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	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.

Interface	osid.repository.SubjectHierarchyDesignSession
Implements	osid.hierarchy.HierarchyDesignSession
Description	This session defines methods for managing a hierarchy of Subjects. Each node in the hierarchy is a unique Subject.

Interface	osid.repository.SubjectRepositorySession	
Implements	osid.OsidSession	
Description	<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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition 	
Method	useComparativeRepositoryView	
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	mandatory	This method is must be implemented.
Method	usePlenaryCatalogView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	canLookupSubjectRepositoryMappings	
Description	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.	
Return	boolean	false if looking up mappings is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getSubjectIdsByRepository	
Description	Gets the list of Subject Ids associated with a Repository.	
Parameters	osid.id.Id	repositoryId
Return	osid.id.IdList	list of related subject Ids
Errors	NOT_FOUND	repositoryId is 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	getSubjectsByRepository	
Description	Gets the list of Subjects associated with a Repository.	
Parameters	osid.id.Id	repositoryId
Return	osid.repository.SubjectList	list of related subjects
Errors	NOT_FOUND	repositoryId is 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	getSubjectIdsByRepositories	
Description	Gets the list of Subject Ids corresponding to a list of Repository objects.	
Parameters	osid.id.IdList	repositoryIdList
Return	list of repository Ids	
Errors	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getSubjectsByRepositories	
Description	Gets the list of Subjects corresponding to a list of Repository objects.	
Parameters	osid.id.IdList	repositoryIdList
Return	list of repository Ids	
Errors	NULL_ARGUMENT	repositoryIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoryIdsBySubject	
Description	Gets the Repository Ids mapped to a Subject.	
Parameters	osid.id.Id	subjectId
Return	Id of a Subject	
Errors	NOT_FOUND	subjectId is 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	getRepositoriesBySubject	
Description	Gets the Repository objects mapped to a Subject.	
Parameters	osid.id.Id	subjectId
Return	Id of a Subject	
Errors	NOT_FOUND	subjectId is not found
	NULL_ARGUMENT	subjectId is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.SubjectRepositoryAssignmentSession				
Implements	osid.OsidSession				
Description	<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>				
Method	canAssignSubjects				
Description	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.				
Return	boolean	false if mapping is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	assignSubjectToRepository				
Description	Adds an existing Subject to a Repository.				
Parameters	osid.id.Id	subjectId	the Id of the Subject		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		subjectId or repositoryId not found		
	NULL_ARGUMENT		subjectId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	unassignSubjectFromRepository				
Description	Removes a Subject from a Repository.				
Parameters	osid.id.Id	subjectId	the Id of the Subject		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		subjectId or repositoryId not found		
	NULL_ARGUMENT		subjectId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

Interface	osid.repository.RepositoryLookupSession				
Implements	osid.OsidSession				
Description	<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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition <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>				
Method	canLookupRepositories				
Description	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.				
Return	boolean	false if lookup methods are not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	useComparativeRepositoryView				
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	mandatory	This method is must be implemented.			
Method	usePlenaryRepositoryView				
Description	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.				
Compliance	mandatory	This method is must be implemented.			
Method	getRepository				
Description	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.				
Parameters	osid.id.Id	repositoryId	Id of the Repository		
Return	osid.repository.Repository		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 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 NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	an Id was not found repositoryIdList is null unable to complete request 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 OPERATION_FAILED PERMISSION_DENIED	repositoryGenusType is null unable to complete request 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 OPERATION_FAILED PERMISSION_DENIED	repositoryGenusType is null unable to complete request 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 OPERATION_FAILED PERMISSION_DENIED	repositoryRecordType is null unable to complete request 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	osid.repository.RepositoryList	a list of Repositories
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.RepositorySearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching among Repository objects. The search query is constructed using the RepositoryQuery interface. Multiple RepositoryQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single RepositoryQuery these elements form a boolean AND.</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>	
Method	canSearchRepositories	
Description	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.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getRepositoryQuery	
Description	Gets a repository query interface.	
Return	osid.repository.RepositoryQuery	the repository query
Compliance	mandatory	This method must be implemented.
Method	getRepositoriesByQuery	
Description	Gets a list of Repositories matching the given search interface. Each element in the array is OR'd.	
Parameters	osid.repository.RepositoryQuery[]	repositoryQueries
	the search query array	
Return	osid.repository.RepositoryList	the returned RepositoryList
Errors	<ul style="list-style-type: none"> NULL_ARGUMENT repositoryQueries is null OPERATION_FAILED unable to complete request PERMISSION_DENIED authorization failure UNSUPPORTED a repositoryQuery is not of this service 	
Compliance	mandatory	This method must be implemented.
Method	getRepositorySearch	
Description	Gets a repository search interface.	
Return	osid.repository.RepositorySearch	the repository search interface
Compliance	mandatory	This method must be implemented.
Method	getRepositorySearchOrder	
Description	Gets a repository search order interface. The RepositorySearchOrder is supplied to a RepositorySearch to specify the ordering of results.	
Return	osid.repository.RepositorySearchOrder	the repository search order interface
Compliance	mandatory	This method must be implemented.

Method	getRepositoriesBySearch		
Description	Gets the search results matching the given search query using the given search. Each element in the query array is OR'd.		
Parameters	osid.repository.RepositoryQuery[]	repositoryQueries	the search query array
	osid.repository.RepositorySearch	repositorySearch	the search interface
Return	osid.repository.RepositorySearchResults		the search results
Errors	NULL_ARGUMENT		repositoryQueries or repositorySearch is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
	UNSUPPORTED		a repositoryQuery or repositorySearch is not of this service
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.RepositoryAdminSession	
Implements	osid.OsidSession	
Description	This session creates and removes repositories. The data for create and update is provided by the consumer via the form object.	
Method	canCreateRepositories	
Description	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.	
Return	boolean	false if Repository creation is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canCreateRepositoryWithRecordTypes	
Description	Tests if this user can create a single Repository using the desired record interface types. While RepositoryManager.getRepositoryRecordTypes() can be used to examine which record interfaces 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.	
Parameters	osid.type.Type[]	repositoryRecordTypes array of types
Return	boolean	true if Repository creation using the specified Types is supported, false otherwise
Errors	NULL_ARGUMENT	repositoryRecordTypes is null
Compliance	mandatory	This method must be implemented.
Method	getRepositoryFormForCreate	
Description	Gets the repository form for creating new repositories. A new form should be requested for each create transaction.	
Return	osid.repository.RepositoryForm	the repository form
Compliance	mandatory	This method must be implemented.
Method	createRepository	
Description	Creates a new Repository.	
Parameters	osid.repository.RepositoryForm	repositoryForm the form for this Repository
Return	osid.repository.Repository	the new Repository
Errors	ALREADY_EXISTS INVALID_ARGUMENT NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	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
Compliance	mandatory	This method must be implemented.
Method	canUpdateRepositories	
Description	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.	
Return	boolean	false if Repository modification is not authorized, true otherwise
Compliance	mandatory	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	deleteRepository				
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	addIdToRepository				
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.			

Interface	osid.repository.RepositoryNotificationSession	
Implements	osid.OsidSession	
Description	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.	
Method	canRegisterForRepositoryNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	registerForNewRepositories	
Description	Register for notifications of new repositories. RepositoryReceiver.newRepository() is invoked when a new Repository is created.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForNewRepositoryAncestors	
Description	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.	
Parameters	osid.id.Id	repositoryId the Id of the repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.
Method	registerForNewRepositoryDescendants	
Description	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.	
Parameters	osid.id.Id	repositoryId the Id of the repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.
Method	registerForChangedRepositories	
Description	Registers for notification of updated repositories. RepositoryReceiver.changedRepository() is invoked when a repository is changed.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	registerForChangedRepository	
Description	Registers for notification of an updated repository. RepositoryReceiver.changedRepository() is invoked when the specified repository is changed.	
Parameters	osid.id.Id	repositoryId the Id of the Repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedRepositories	
Description	Registers for notification of deleted repositories. RepositoryReceiver.deletedRepository() is invoked when a repository is deleted.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedRepository	
Description	Registers for notification of a deleted repository. RepositoryReceiver.deletedRepository() is invoked when the specified repository is deleted.	
Parameters	osid.id.Id	repositoryId the Id of the Repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedRepositoryAncestors	
Description	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.	
Parameters	osid.id.Id	repositoryId the Id of the repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.
Method	registerForDeletedRepositoryDescendants	
Description	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.	
Parameters	osid.id.Id	repositoryId the Id of the repository to monitor
Errors	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
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.RepositoryHierarchySession	
Implements	osid.hierarchy.HierarchyTraversalSession	
Description	<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>	
Description	<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"> • comparative view: repository elements may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition 	
Method	useComparativeRepositoryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	usePlenaryRepositoryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	getRootRepositories	
Description	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.	
Return	osid.repository.RepositoryList	the root repositories
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method is must be implemented.
Method	getParentRepositories	
Description	Gets the parents of the given repository.	
Parameters	osid.id.Id	repositoryId
	the Id to query	
Return	osid.repository.RepositoryList	the parents 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	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	osid.repository.RepositoryList		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	osid.repository.RepositoryList		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	osid.repository.RepositoryList		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	osid.repository.RepositoryHierarchyDesignSession
Implements	osid.hierarchy.HierarchyDesignSession
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	osid.OsidSession	
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete and ordered result set or is an error condition • 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 CompositionAdminSession. • 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. <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 Composition.</p>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canLookupCompositions	
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 PERMISSION_DENIED . This is intended as a hint to an application that may opt not to offer lookup operations to unauthorized users.	
Return	boolean	false if lookup methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useComparativeCompositionView	
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	mandatory	This method is must be implemented.
Method	usePlenaryCompositionView	
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	mandatory	This method is must be implemented.

Method	useFederatedRepositoryView	
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	mandatory	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	getComposition	
Description	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.	
Parameters	osid.id.Id	compositionId
Return	osid.repository.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 is must be implemented.
Method	getCompositionsByIds	
Description	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.	
Parameters	osid.id.IdList	compositionIdList
Return	osid.repository.CompositionList	
Errors	NOT_FOUND	an Id was not found
	NULL_ARGUMENT	compositionIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getCompositionsByGenusType	
Description	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.	
Parameters	osid.type.Type	compositionGenusType
Return	osid.repository.CompositionList	
Errors	NULL_ARGUMENT	compositionGenusType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

Method	getCompositionsByParentGenusType	
Description	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.	
Parameters	osid.type.Type compositionGenusType	a composition genus type
Return	osid.repository.CompositionList	the returned Composition list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionGenusType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getCompositionsByRecordType	
Description	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.	
Parameters	osid.type.Type compositionRecordType	a composition record type
Return	osid.repository.CompositionList	the returned Composition list
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionRecordType is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getCompositions	
Description	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.	
Return	osid.repository.CompositionList	a list of Compositions
Errors	OPERATION_FAILED PERMISSION_DENIED	unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.CompositionSearchSession	
Implements	osid.OsidSession	
Description	<p>This session provides methods for searching among Composition objects. The search query is constructed using the CompositionQuery interface. Multiple CompositionQuery interfaces may be submitted into a search to perform a boolean OR. If more than one search element is specified within a single CompositionQuery these elements form a boolean AND.</p> <p>getCompositionsByQuery() is the basic search method and returns a list of Compositions. A more advanced search may be performed with getCompositionsBySearch(). It accepts an Composition interface in addition to the query interface for the purpose of specifying additional options affecting the entire search, such as ordering. getCompositionsBySearch() returns an CompositionSearchResults interface that can be used to access the resulting Composition or be used to perform a search within the result set through CompositionSearch.</p> <p>This session defines views that offer differing behaviors when retrieving multiple objects.</p> <ul style="list-style-type: none"> • federated repository view: searches include compositions in repositories of which this repository is an ancestor in the repository hierarchy • isolated repository view: searches are restricted to subjects in this repository <p>Compositions may have a record query interface indicated by their respective record interface types. The record query interface is accessed via the CompositionQuery.</p>	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canSearchCompositions	
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 PERMISSION_DENIED. This is intended as a hint to an application that may opt not to offer search operations to unauthorized users.	
Return	boolean	false if search methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
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	mandatory	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	getCompositionQuery	
Description	Gets a composition query interface.	
Return	osid.repository.CompositionQuery	the composition query interface
Compliance	mandatory	This method must be implemented.
Method	getCompositionsByQuery	
Description	Gets a list of Compositions matching the given query interface. Each element in the array is OR'd.	
Parameters	osid.repository.CompositionQuery[]	compositionQueries the search query array
Return	osid.repository.CompositionList	the returned CompositionList
Errors	NULL_ARGUMENT	compositionQueries is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a compositionQuery is not of this service
Compliance	mandatory	This method must be implemented.
Method	getCompositionSearch	
Description	Gets a composition search interface.	
Return	osid.repository.CompositionSearch	the composition search interface
Compliance	mandatory	This method must be implemented.
Method	getCompositionSearchOrder	
Description	Gets a composition search order interface. The CompositionSearchOrder is supplied to an CompositionSearch to specify the ordering of results.	
Return	osid.repository.CompositionSearchOrder	the composition search order interface
Compliance	mandatory	This method must be implemented.
Method	getCompositionsBySearch	
Description	Gets the search results matching the given search query using the given search. Each element in the query array is OR'd.	
Parameters	osid.repository.CompositionQuery[]	compositionQueries the search query array
	osid.repository.CompositionSearch	compositionSearch the search interface
Return	osid.repository.CompositionSearchResults	the search results
Errors	NULL_ARGUMENT	compositionQueries or compositionSearch is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a compositionQuery or compositionSearch is not of this service
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.CompositionAdminSession	
Implements	osid.OsidSession	
Description	This session creates and removes compositions. The data for create and update is provided by the consumer via the form object.	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canCreateCompositions	
Description	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.	
Return	boolean	false if Composition creation is not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	canCreateCompositionWithRecordTypes	
Description	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.	
Parameters	osid.type.Type[]	compositionRecordTypes array of types
Return	boolean	true if Composition creation using the specified Types is supported, false otherwise
Errors	NULL_ARGUMENT	compositionRecordTypes is null
Compliance	mandatory	This method must be implemented.
Method	getCompositionFormForCreate	
Description	Gets the composition form for creating new compositions. A new form should be requested for each create transaction.	
Return	osid.repository.CompositionForm	the composition form interface
Compliance	mandatory	This method must be implemented.
Method	createComposition	
Description	Creates a new Composition.	
Parameters	osid.repository.CompositionForm[]	composititonForms the forms for this Composition
Return	osid.repository.Composition	the new Composition
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	compositionForms is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	UNSUPPORTED	a compositionForm is not supported
Compliance	mandatory	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.

Interface	osid.repository.CompositionNotificationSession	
Implements	osid.OsidSession	
Description	<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"> • federateRepositoryView: includes notifications of compositions in repositories of which this repository is an ancestor in the repository hierarchy • isolateRepositoryView: restricts notifications to this Repository only 	
Method	getRepositoryId	
Description	Gets the Repository Id associated with this session.	
Return	osid.id.Id	the Repository Id associated with this session
Compliance	mandatory	This method must be implemented.
Method	getRepository	
Description	Gets the Repository associated with this session.	
Return	osid.repository.Repository	the Repository associated with this session
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	canRegisterForCompositionNotifications	
Description	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.	
Return	boolean	false if notification methods are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	useFederatedRepositoryView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedRepositoryView	
Description	Isolates the view for composition methods in this session. An isolated view restricts notifications to this repository only.	
Compliance	mandatory	This method is must be implemented.
Method	useFederatedCompositionView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	useIsolatedCompositionView	
Description	Isolates the view for asset methods in this session. An isolated view restricts notifications to the specified composition only.	
Compliance	mandatory	This method is must be implemented.
Method	registerForNewCompositions	
Description	Register for notifications of new composition. CompositionReceiver.newComposition() is invoked when a new Composition is created.	
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	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	registerForDeletedCompositions		
Description	Register for notifications of new compositions. CompositionReceiver.deletedComposition() is invoked when a Composition is deleted.		
Errors	OPERATION_FAILED PERMISSION_DENIED		unable to complete request authorization failure
Compliance	mandatory		This method must be implemented.
Method	registerForDeletedComposition		
Description	Registers for notification of a deleted composition. CompositionReceiver.deletedComposition() is invoked when the specified composition is deleted.		
Parameters	osid.id.Id	compositionId	the Id of the Composition to monitor
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
Compliance	mandatory		This method must be implemented.
Method	registerForUnassignedAssetsInComposition		
Description	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.		
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
Compliance	mandatory		This method must be implemented.
Method	registerForDeletedCompositionAncestors		
Description	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..		
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
Compliance	mandatory		This method must be implemented.
Method	registerForDeletedCompositionDescendants		
Description	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.		
Parameters	osid.id.Id	compositionId	the Id of the composition to monitor
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED		a composition was not found identified by the given Id compositionId is null unable to complete request authorization failure
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.CompositionHierarchySession	
Implements	osid.hierarchy.HierarchyTraversalSession	
Description	<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"> • comparative view: composition elements may be silently omitted or re-ordered • plenary view: provides a complete set or is an error condition 	
Method	useComparativeCompositionView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	usePlenaryCompositionView	
Description	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.	
Compliance	mandatory	This method is must be implemented.
Method	getRootCompositions	
Description	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.	
Return	osid.repository.CompositionList	the root compositions
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method is must be implemented.
Method	getParentCompositions	
Description	Gets the parents of the given composition.	
Parameters	osid.id.Id compositionId	the Id to query
Return	osid.repository.CompositionList	the parents 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	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	osid.repository.CompositionList		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	osid.repository.CompositionList		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	osid.repository.CompositionList		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	osid.repository.CompositionHierarchyDesignSession
Implements	osid.hierarchy.HierarchyDesignSession
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	osid.OsidSession									
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition 									
Method	useComparativeRepositoryView									
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	mandatory	This method is must be implemented.								
Method	usePlenaryRepositoryView									
Description	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.									
Compliance	mandatory	This method is must be implemented.								
Method	canLookupCompositionRepositoryMappings									
Description	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.									
Return	boolean	false if looking up mappings is not authorized, true otherwise								
Compliance	mandatory	This method must be implemented.								
Method	getCompositionIdsByRepository									
Description	Gets the list of Composition Ids associated with a Repository.									
Parameters	osid.id.Id	repositoryId								
Return	osid.id.IdList	list of related composition Ids								
Errors	<table> <tr> <td>NOT_FOUND</td> <td>repositoryId is not found</td> </tr> <tr> <td>NULL_ARGUMENT</td> <td>repositoryId is null</td> </tr> <tr> <td>OPERATION_FAILED</td> <td>unable to complete request</td> </tr> <tr> <td>PERMISSION_DENIED</td> <td>authorization failure</td> </tr> </table>		NOT_FOUND	repositoryId is not found	NULL_ARGUMENT	repositoryId is null	OPERATION_FAILED	unable to complete request	PERMISSION_DENIED	authorization failure
NOT_FOUND	repositoryId is 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	getCompositionsByRepository									
Description	Gets the list of Compositions associated with a Repository.									
Parameters	osid.id.Id	repositoryId								
Return	osid.repository.CompositionList	list of related compositions								
Errors	<table> <tr> <td>NOT_FOUND</td> <td>repositoryId is not found</td> </tr> <tr> <td>NULL_ARGUMENT</td> <td>repositoryId is null</td> </tr> <tr> <td>OPERATION_FAILED</td> <td>unable to complete request</td> </tr> <tr> <td>PERMISSION_DENIED</td> <td>authorization failure</td> </tr> </table>		NOT_FOUND	repositoryId is not found	NULL_ARGUMENT	repositoryId is null	OPERATION_FAILED	unable to complete request	PERMISSION_DENIED	authorization failure
NOT_FOUND	repositoryId is 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	getCompositionIdsByRepositories	
Description	Gets the list of Composition Ids corresponding to a list of Repository objects	
Parameters	osid.id.IdList	repositoryIdList
Return	osid.id.IdList	list of repository Ids
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	list of composition Ids repositoryIdList is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getCompoitionsByRepositories	
Description	Gets the list of Compositions corresponding to a list of Repository objects	
Parameters	osid.id.IdList	repositoryIdList
Return	osid.repository.CompositionList	list of Compositions
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	repositoryIdList is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoryIdsByComposition	
Description	Gets the Repository Ids mapped to a Composition.	
Parameters	osid.id.Id	compositionId
Return	osid.id.IdList	list of repository Ids
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionId is not found compositionId is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.
Method	getRepositoriesByComposition	
Description	Gets the Repository objects mapped to a Composition.	
Parameters	osid.id.Id	compositionId
Return	osid.repository.RepositoryList	list of repositories
Errors	NOT_FOUND NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED	compositionId is not found compositionId is null unable to complete request authorization failure
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.CompositionRepositoryAssignmentSession				
Implements	osid.OsidSession				
Description	<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>				
Method	canAssignCompositions				
Description	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.				
Return	boolean	false if mapping is not authorized, true otherwise			
Compliance	mandatory	This method must be implemented.			
Method	assignCompositionToRepository				
Description	Adds an existing Composition to a Repository.				
Parameters	osid.id.Id	compositionId	the Id of the Composition		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		compositionId or repositoryId not found		
	NULL_ARGUMENT		compositionId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			
Method	unassignCompositionFromRepository				
Description	Removes Composition from a Repository.				
Parameters	osid.id.Id	compositionId	the Id of the Composition		
	osid.id.Id	repositoryId	the Id of the Repository		
Errors	NOT_FOUND		compositionId or repositoryId not found		
	NULL_ARGUMENT		compositionId or repositoryId is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure		
Compliance	mandatory	This method must be implemented.			

Interface	osid.repository.CompositionSubjectSession	
Implements	osid.OsidSession	
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"> • comparative view: elements may be silently omitted or re-ordered • plenary view: provides a complete result set or is an error condition results 	
Method	useComparativeCompositionView	
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	mandatory	This method is must be implemented.
Method	usePlenaryCompositionView	
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	mandatory	This method is must be implemented.
Method	canLookupCompositionSubjects	
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	boolean	false if lookups are not authorized, true otherwise
Compliance	mandatory	This method must be implemented.
Method	getCompositionIdsBySubject	
Description	<p>Gets the list of Composition Ids associated with a Subject.</p>	
Parameters	osid.id.Id	subjectId
Return	osid.id.IdList	list of matching asset Ids
Errors	NOT_FOUND	subjectId is 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	getCompositionsBySubject	
Description	<p>Gets the list of Compositions associated with a Subject.</p>	
Parameters	osid.id.Id	subjectId
Return	osid.repository.CompositionList	list of matching compositions
Errors	NOT_FOUND	subjectId is 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	getCompositionIdsBySubjects	
Description	<p>Gets the list of Composition Ids corresponding to a list of Subjects.</p>	
Parameters	osid.id.IdList	subjectIdList
Return	osid.id.IdList	list of composition Ids
Errors	NULL_ARGUMENT	subjectIdList is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.CompositionSubjectAssignmentSession		
Implements	osid.OsidSession		
Description	This session defines methods for managing composition to subject mappings.		
Method	canManageCompositionSubjects		
Description	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.		
Return	boolean		false if composition subject management is not authorized, true otherwise
Compliance	mandatory		This method must be implemented.
Method	assignCompositionToSubject		
Description	Adds a Composition to a Subject.		
Parameters	osid.id.Id	compositionId	Id of the Composition
	osid.type.Type	subjectId	Id of the Subject
Errors	ALREADY_EXISTS		composition is already mapped to subject
	NOT_FOUND		compositionId or subjectId is not found
	NULL_ARGUMENT		compositionId or subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.
Method	unassignCompositionFromSubject		
Description	Removes a Composition from a Subject.		
Parameters	osid.id.Id	compositionId	Id of the Composition
	osid.type.Type	subjectId	Id of the Subject
Errors	NOT_FOUND		compositionId or subjectId is not found, or not mapped
	NULL_ARGUMENT		compositionId or subjectId is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure
Compliance	mandatory		This method must be implemented.

Interface	osid.repository.Asset
Implements	osid.OsidObject
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	getTitle	
Description	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.	
Return	string	the title of this asset
Compliance	mandatory	This method must be implemented.
Method	isCopyrightStatusKnown	
Description	Tests if the copyright status is known.	
Return	boolean	true if the copyright status of this asset is known, false otherwise. If false, isPublidDomain(), canDistributeVerbatim(), canDistributeAlterations() and canDistributeCompositions() may also be false.
Compliance	mandatory	This method must be implemented.
Method	isPublicDomain	
Description	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.	
Return	boolean	true if this asset is in the public domain, false otherwise. If true, canDistributeVerbatim(), canDistributeAlterations() and canDistributeCompositions() must also be true.
Errors	ILLEGAL_STATE	isCopyrightStatusKnown() is false
Compliance	mandatory	This method must be implemented.
Method	getCopyright	
Description	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.	
Return	string	the copyright statement or an empty string if none available. An empty string does not imply the asset is not protected by copyright.
Errors	ILLEGAL_STATE	isCopyrightStatusKnown() is false
Compliance	mandatory	This method must be implemented.
Method	getCopyrightRegistration	
Description	Gets the copyright registration information for this asset.	
Return	string	the copyright registration. An empty string means the registration status isn't known.
Compliance	mandatory	This method must be implemented.
Method	getLicense	
Description	Gets the terms of usage for this asset. If isCopyrightStatusKnown() is false a statement about the suspected copyright status may also be included.	
Return	string	the license statement
Compliance	mandatory	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	
Description	Gets the Resource representing the provider of this asset.	
Return	osid.resource.Resource	the provider
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
Compliance	mandatory	This method must be implemented.
Method	getSourceId	
Description	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.	
Return	osid.id.Id	the source Id
Compliance	mandatory	This method must be implemented.
Method	getSource	
Description	Gets the Resource representing the source of this asset.	
Return	osid.resource.Resource	the source
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
Compliance	mandatory	This method must be implemented.
Method	getCreatedDate	
Description	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.	
Return	osid.calendaring.DateTime	the created date
Compliance	mandatory	This method must be implemented.
Method	isPublished	
Description	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.	
Return	boolean	true if this asset has been published, false if unpublished or its published status is not known
Compliance	mandatory	This method must be implemented.
Method	getPublishedDate	
Description	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.	
Return	osid.calendaring.DateTime	the published date
Errors	ILLEGAL_STATE	isPublished() is false
Compliance	mandatory	This method must be implemented.
Method	getPrincipalCreditString	
Description	Gets the credits of the principal people involved in the production of this asset as a display string.	
Return	string	the principal credits
Compliance	mandatory	This method must be implemented.
	getAssetContents	
Description	Gets the content of this asset.	
Return	osid.repository.AssetContentList	the asset contents
Compliance	mandatory	This method must be implemented.

getAssetRecord		
Description	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.	
Parameters	osid.type.Type assetRecordType	an asset record type
Return	osid.repository.AssetRecord	the record
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	assetRecordType is null unable to complete request authorization failure occurred hasRecordType(assetRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.AssetQuery		
Implements	osid.OsidQuery		
Description	This is the query interface for searching assets. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the AssetQuery record.		
Method	matchTitle		
Description	Adds a title for this query. Supplying multiple strings behaves like a boolean OR among the elements each which must correspond to the stringMatchType.		
Parameters	string	title	title 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		title not of stringMatchType
	NULL_ARGUMENT		title or stringMatchType is null
	UNSUPPORTED		supportsStringMatchType(stringMatchType) is false
Compliance	mandatory		This method must be implemented.
Method	matchUnsetTitle		
Description	Matches a title that has no value.		
Compliance	mandatory		This method must be implemented.
Method	matchPublicDomain		
Description	Matches assets marked as public domain.		
Parameters	boolean	publicDomain	public domain flag
Compliance	mandatory		This method must be implemented.
Method	matchUnsetPublicDomain		
Description	Matches assets with no public domain value.		
Compliance	mandatory		This method must be implemented.
Method	matchCopyright		
Description	Adds a copyright for this query. Supplying multiple strings behaves like a boolean OR among the elements each which must correspond to the stringMatchType.		
Parameters	string	copyright	copyright 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		copyright not of stringMatchType
	NULL_ARGUMENT		copyright or stringMatchType is null
	UNSUPPORTED		supportsStringMatchType(stringMatchType) is false
Compliance	mandatory		This method must be implemented.
Method	matchUnsetCopyright		
Description	Matches assets with no copyright statement.		
Compliance	mandatory		This method must be implemented.
Method	matchCopyrightRegistration		
Description	Adds a copyright registration for this query. Supplying multiple strings behaves like a boolean OR among the elements each which must correspond to the stringMatchType.		
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	matchUnsetCopyrightRegistration		
Description	Matches assets with no copyright registration.		
Compliance	mandatory This method must be implemented.		
Method	matchLicense		
Description	Adds a license for this query. Supplying multiple strings behaves like a boolean OR among the elements each which must correspond to the stringMatchType.		
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	matchUnsetLicense		
Description	Matches assets with no license registration.		
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	matchProviderId		
Description	Sets the provider Id for this query.		
Parameters	osid.id.Id	providerId	the provider Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		providerId is null
Compliance	mandatory This method must be implemented.		
Method	matchUnsetProvider		
Description	Matches assets with no provider.		
Compliance	mandatory This method must be implemented.		
Method	supportsProviderQuery		
Description	Tests if a ResourceQuery is available for the provider.		
Return	boolean		true if a resource query interface is available, false otherwise
Compliance	mandatory This method must be implemented.		
Method	getProviderQuery		
Description	Gets the query interface for the provider. Multiple queries can be retrieved for a nested OR term.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.resource.ResourceQuery		the provider query
Errors	UNIMPLEMENTED		supportsProviderQuery() is false
Compliance	optional This method must be implemented if supportsProviderQuery() is true.		

Method	matchSourceId		
Description	Sets the source Id for this query.		
Parameters	osid.id.Id	sourceId	the source Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		sourceId is null
Compliance	mandatory		This method must be implemented.
Method	matchUnsetSource		
Description	Matches assets with no source.		
Compliance	mandatory		This method must be implemented.
Method	supportsSourceQuery		
Description	Tests if a ResourceQuery is available for the source.		
Return	boolean		true if a resource query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getSourceQuery		
Description	Gets the query interface for the source. Multiple queries can be retrieved for a nested OR term.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.resource.ResourceQuery		the source query
Errors	UNIMPLEMENTED		supportsSourceQuery() is false
Compliance	optional		This method must be implemented if supportsSourceQuery() is true.
Method	matchCreatedTime		
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	matchUnsetCreatedTime		
Description	Matches assets with no creation time.		
Compliance	mandatory		This method must be implemented.
Method	matchPublished		
Description	Marks assets that are marked as published.		
Parameters	boolean	published	published flag
Compliance	mandatory		This method must be implemented.
Method	matchPublishedTime		
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	matchUnsetPublishedTime		
Description	Matches assets with no published time.		
Compliance	mandatory This method must be implemented.		
Method	supportsAssetCreditQuery		
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	getAssetCreditQuery		
Description	Gets the query interface for an asset credit. Multiple queries can be retrieved for a nested OR term.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.repository.AssetCreditQuery		the asset credit query
Errors	UNIMPLEMENTED		supportsAssetCreditQuery() is false
Compliance	mandatory This method must be implemented.		
Method	matchUnsetAssetCredits		
Description	Matches assets with no credits.		
Compliance	mandatory This method must be implemented.		
Method	matchTemporalCoverage		
Description	Match assets that whose coverage falls 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	matchUnsetTemporalCoverage		
Description	Matches assets with no temporal coverage.		
Compliance	mandatory This method must be implemented.		
Method	supportsSpatialQuery		
Description	Tests if a SpatialUnitQuery is available.		
Return	boolean		true if a spatial unit query interface is available, false otherwise
Compliance	mandatory This method must be implemented.		
Method	getSpatialQuery		
Description	Gets the query interface for a spatial unit. Multiple queries can be retrieved for a nested OR term.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.spatial.SpatialUnitQuery		the spatial query
Errors	UNIMPLEMENTED		supportsSpatialQuery() is false
Compliance	optional This method must be implemented if supportsSpatialQuery() is true.		
Method	matchUnsetSpatialCoverage		
Description	Matches assets with no spatial coverage.		
Compliance	mandatory This method must be implemented.		
Method	supportsAssetContentQuery		
Description	Tests if an AssetContentQuery is available.		
Return	boolean		true if an asset contents query interface is available, false otherwise
Compliance	mandatory This method must be implemented.		

Method	getAssetContentQuery		
Description	Gets the query interface for the asset content.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.repository.AssetContentQuery		the asset contents query
Errors	UNIMPLEMENTED		supportsAssetContentQuery() is false
Compliance	optional		This method must be implemented if supportsAssetContentQuery() is true.
Method	matchUnsetAssetContent		
Description	Matches assets with no content.		
Compliance	mandatory		This method must be implemented.
Method	matchRepositoryId		
Description	Sets the repository Id for this query.		
Parameters	osid.id.Id	repositoryId	the repository Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		repositoryId is null
Compliance	mandatory		This method must be implemented.
Method	supportsRepositoryQuery		
Description	Tests if a RepositoryQuery is available.		
Return	boolean		true if a repository query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getRepositoryQuery		
Description	Gets the query interface for a repository.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.repository.RepositoryQuery		the repository query
Errors	UNIMPLEMENTED		supportsRepositoryQuery() is false
Compliance	optional		This method must be implemented if supportsRepositoryQuery() is true.
Method	matchSubjectId		
Description	Sets the subject Id for this query.		
Parameters	osid.id.Id	subjectId	the subject Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		subjectId is null
Compliance	mandatory		This method must be implemented.
Method	getSubjectQuery		
Description	Gets the query interface for a subject.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.repository.SubjectQuery		the subject query
Errors	UNIMPLEMENTED		supportsSubjectQuery() is false
Compliance	optional		This method must be implemented if supportsSubjectQuery() is true.
Method	matchUnsetSubject		
Description	Matches assets with no subject mappings.		
Compliance	mandatory		This method must be implemented.

Method	matchCompositionId		
Description	Sets the composition Id for this query.		
Parameters	osid.id.Id	compositionId	the composition Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		compositionId is null
Compliance	mandatory		This method must be implemented.
Method	supportsCompositionQuery		
Description	Tests if a CompositionQuery is available.		
Return	boolean		true if a composition query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getCompositionQuery		
Description	Gets the query interface for a composition.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.repository.CompositionQuery		the composition query
Errors	UNIMPLEMENTED		supportsCompositionQuery() is false
Compliance	optional		This method must be implemented if supportsCompositionQuery() is true.
Method	getAssetQueryRecord		
Description	Gets the record query interface corresponding to the given Asset record Type. Multiple record retrievals of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this query.		
Parameters	osid.type.Type	assetRecordType	an asset record type
Return	osid.repository.AssetQueryRecord		the asset query record
Errors	NULL_ARGUMENT	assetRecordType is null	
	OPERATION_FAILED	unable to complete request	
	PERMISSION_DENIED	authorization failure occurred	
	UNSUPPORTED	hasRecordType(assetRecordType) is false	
Compliance	mandatory		This method must be implemented.

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

Interface	osid.repository.AssetForm	
Implements	osid.OsidForm	
Description	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.	
Method	getTitleMetadata	
Description	Gets the metadata for an asset title.	
Return	osid.Metadata	metadata for the title
Compliance	mandatory	This method must be implemented.
Method	setTitle	
Description	Sets the title.	
Parameters	string	title
	INVALID_ARGUMENT	title is invalid
Errors	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	title is null
Compliance	mandatory	This method must be implemented.
Method	clearTitle	
Description	Removes the title.	
Errors	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	getPublicDomainMetadata	
Description	Gets the metadata for the public domain flag.	
Return	osid.Metadata	metadata for the public domain
Compliance	mandatory	This method must be implemented.
Method	setPublicDomain	
Description	Sets the public domain flag.	
Parameters	boolean	publicDomain
	NO_ACCESS	Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	clearPublicDomain	
Description	Removes the public domain status.	
Errors	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	getCopyrightMetadata	
Description	Gets the metadata for the copyright.	
Return	osid.Metadata	metadata for the copyright
Compliance	mandatory	This method must be implemented.
Method	setCopyright	
Description	Sets the copyright.	
Parameters	string	copyright
	INVALID_ARGUMENT	copyright is invalid
Errors	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	copyright is null
Compliance	mandatory	This method must be implemented.
Method	clearCopyright	
Description	Removes the copyright.	
Errors	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.

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

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

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

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

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

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

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

Interface	osid.repository.AssetSearch	
Implements	osid.OsidSearch	
Description	The search interface for governing asset searches.	
Method	searchWithinAssetResults	
Description	Execute this search using a previous search result.	
Parameters	osid.repository.AssetSearchResults	results
		results from a query
Errors	INVALID_ARGUMENT	results is not valid
	NULL_ARGUMENT	results is null
Compliance	mandatory	This method must be implemented.
Method	searchAmongAssets	
Description	Execute this search among the given list of assets.	
Parameters	osid.id.IdList	assetIds
		list of asset Ids
Errors	NULL_ARGUMENT	assetIds is null
Compliance	mandatory	This method must be implemented.
Method	orderAssetResults	
Description	Specify an ordering to the search results.	
Parameters	osid.repository.AssetSearchOrder	assetSearchOrder
		asset search order
Errors	NULL_ARGUMENT	assetSearchOrder is null
	UNSUPPORTED	assetSearchOrder is not of this service
Compliance	mandatory	This method must be implemented.
Method	getAssetSearchRecord	
Description	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.	
Parameters	osid.type.Type	assetSearchRecordType
		an asset search record type
Return	osid.repository.AssetSearchRecord	the asset search interface
Errors	NULL_ARGUMENT	assetSearchRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasSearchRecordType(assetSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.AssetSearchResults	
Implements	osid.OsidSearchResults	
Description	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.	
Method	getAssets	
Description	Gets the asset list resulting from a search.	
Return	osid.repository.AssetList	the asset list
Compliance	mandatory	This method must be implemented.
Method	getAssetSearchResultsRecord	
Description	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.	
Parameters	osid.type.Type	assetSearchRecordType an asset search record type
Return	osid.repository.AssetSearchResultsRecord	the asset search interface
Errors	NULL_ARGUMENT	assetSearchRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasSearchRecordType(assetSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.repository.AssetList	
Implements	osid.OsidList	
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	getNextAsset	
Description	Gets the next Asset in this list.	
Return	osid.repository.Asset	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	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextAssets	
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	osid.repository.Asset[]	an array of Asset elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetContent	
Implements	osid.OsidObject	
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	getAsset	
Description	Gets the Asset corresponding to this content.	
Return	osid.repository.Asset	the asset
Compliance	mandatory	This method must be implemented.
Method	getAccessibilityTypes	
Description	Gets the accessibility types associated with this content.	
Return	osid.type.TypeList	list of content accessibility types
Compliance	mandatory	This method must be implemented.
Method	hasDataLength	
Description	Tests if a data length is available.	
Return	boolean	true if a length is available for this content, false otherwise.
Compliance	mandatory	This method must be implemented.
Method	getDataLength	
Description	Gets the length of the data represented by this content.	
Return	cardinal	the length of the data stream
Errors	ILLEGAL_STATE	hasDataLength() is false
Compliance	mandatory	This method must be implemented.
Method	getData	
Description	Gets the asset content data.	
Return	osid.transport.DataInputStream	the length of the content data
Errors	OPERATION_FAILED	unable to complete request
Compliance	mandatory	This method must be implemented.
Method	hasURL	
Description	Tests if a URL is associated with this content.	
Return	boolean	true if a URL is available, false otherwise
Compliance	mandatory	This method must be implemented.
Method	getURL	
Description	Gets the URL associated with this content for web-based retrieval.	
Return	string	the url for this data
Errors	ILLEGAL_STATE	hasURL() is false
Compliance	mandatory	This method must be implemented.

getAssetContentRecord		
Description	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.	
Parameters	<code>osid.type.Type</code>	assetContentContentInterfaceType the type of the record to retrieve
Return	<code>osid.repository.AssetContentRecord</code>	the asset content record
Errors	<ul style="list-style-type: none"> <code>NULL_ARGUMENT</code> <code>OPERATION_FAILED</code> <code>PERMISSION_DENIED</code> <code>UNSUPPORTED</code> 	<ul style="list-style-type: none"> assetContentRecordType is null unable to complete request authorization failure occurred hasRecordType(assetContentRecordType) is false
Compliance	<code>mandatory</code>	This method must be implemented.

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

Interface	osid.repository.AssetContentQuery		
Implements	osid.OsidQuery		
Description	This is the query interface for searching asset contents. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the AssetContent record.		
Method	matchAccessibilityType		
Description	Sets the accessibility types for this query. Supplying multiple types behaves like a boolean OR among the elements.		
Parameters	osid.type.Type	accessibilityType	an accessibilityType
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		accessibilityType is null
Compliance	mandatory		This method must be implemented.
Method	matchUnsetAccessibility		
Description	Matches a license registration that has no accessibility type.		
Compliance	mandatory		This method must be implemented.
Method	matchDataLength		
Description	Matches content whose length of the data are inclusive of the given range.		
Parameters	cardinal	low	low range
	cardinal	high	high range
	boolean	match	true for a positive match, false for a negative match
Errors	INVALID_ARGUMENT		low is greater than high
Compliance	mandatory		This method must be implemented.
Method	matchData		
Description	Matches data in this content.		
Parameters	byte[]	data	list of matching strings
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		data is null
Compliance	mandatory		This method must be implemented.
Method	matchUnsetData		
Description	Matches content that has no data.		
Compliance	mandatory		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	matchUnsetUrl		
Description	Matches content that has 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 of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this form.	
Parameters	osid.type.Type assetContentRecordType	an asset content record type
Return	osid.repository.AssetContentQueryRecord	the asset content query record
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	assetContentRecordType is null unable to complete request authorization failure occurred hasRecordType(assetContentRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.AssetContentForm	
Implements	osid.OsidForm	
Description	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.	
Method	getAccessibilityTypeMetadata	
Description	Gets the metadata for an accessibility type.	
Return	osid.Metadata	metadata for the accessibility types
Compliance	mandatory	This method must be implemented.
Method	addAccessibilityType	
Description	Adds an accessibility type. Multiple types can be added.	
Parameters	osid.type.Type	accessibilityType
	a new accessibility type	
Errors	INVALID_ARGUMENT	accessibilityType is invalid
	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	accessibilityType is null
Compliance	mandatory	This method must be implemented.
Method	removeAccessibilityType	
Description	Removes an accessibility type.	
Parameters	osid.type.Type	accessibilityType
Errors	NO_ACCESS	Metadata.isReadOnly() is true
	NOT_FOUND	accessibility type not found
	NULL_ARGUMENT	accessibilityType is null
Compliance	mandatory	This method must be implemented.
Method	clearAccessibilityTypes	
Description	Removes all accessibility types.	
Errors	NO_ACCESS	Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	getDataMetadata	
Description	Gets the metadata for the content data.	
Return	osid.Metadata	metadata for the content data
Compliance	mandatory	This method must be implemented.
Method	setContentData	
Description	Sets the content data.	
Parameters	osid.transport.DataInputStream	data
Errors	INVALID_ARGUMENT	data is invalid
	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	data is null
Compliance	mandatory	This method must be implemented.
Method	clearContentData	
Description	Removes the content data.	
Errors	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	getURLMetadata	
Description	Gets the metadata for the url.	
Return	osid.Metadata	metadata for the url
Compliance	mandatory	This method must be implemented.

Method	setURL	
Description	Sets the url.	
Parameters	string url	the new copyright
Errors	INVALID_ARGUMENT	url is invalid
	NO_ACCESS	Metadata.isReadOnly() is true
	NULL_ARGUMENT	url is null
Compliance	mandatory	This method must be implemented.
Method	clearURL	
Description	Removes the url.	
Errors	NO_ACCESS	Metadata.isRequired() is true or Metadata.isReadOnly() is true
Compliance	mandatory	This method must be implemented.
Method	getAssetContentFormRecord	
Description	Gets the AssetContentFormRecord interface corresponding to the given asset content record interface Type.	
Parameters	osid.type.Type assetContentRecordType	an asset content record type
Return	osid.repository.AssetContentFormRecord	the asset content form 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	osid.repository.AssetContentFormRecord	
Implements	osid.OsidRecord	
Description	A record for an AssetForm. The methods specified by the record type are available through the underlying object.	
getAssetContentForm		
Description	Gets the AssetContentForm from which this record originated.	
Return	osid.repository.AssetContentForm	the asset content form
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetContentList	
Implements	osid.OsidList	
Description	<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>	
Method	getNextAssetContent	
Description	Gets the next AssetContent in this list.	
Return	osid.repository.AssetContent	the next AssetContent in this list. The hasNext() method should be used to test that a next AssetContent is available before calling this method.
Errors	ILLEGAL_STATE	no more elements available in this list
	OPERATION_FAILED	unable to complete request
Compliance	mandatory	
Method	getNextAssetContents	
Description	Gets the next set of AssetContents in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n
Return	osid.repository.AssetContent[]	an array of AssetContent elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE	no more elements available in this list
	OPERATION_FAILED	unable to complete request
Compliance	mandatory	

Interface	osid.repository.AssetCredit	
Implements		
Description	<p>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.</p> <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>	
Method	getSequence	
Description	Gets the sequence of this credit.	
Return	cardinal	the sequence of this credit
Compliance	mandatory	This method must be implemented.
Method	getType	
Description	Gets the Type of this credit.	
Return	osid.type.Type	the type of this credit
Compliance	mandatory	This method must be implemented.
Method	isPrincipal	
Description	Tests if this is a principal credit.	
Return	boolean	true if this is a principal credit, false otherwise
Compliance	mandatory	This method must be implemented.
Method	getResourceId	
Description	Gets the Resource Id.	
Return	osid.id.Id	the resource Id
Compliance	mandatory	This method must be implemented.
Method	getResource	
Description	Gets the Resource.	
Return	osid.resource.Resource	the resource
Compliance	mandatory	This method must be implemented.
Method	getAliasId	
Description	Gets the Resource Id of the alias. If there is no alias defined for this credit, then getResourceId() is returned.	
Return	osid.id.Id	the resource Id
Compliance	mandatory	This method must be implemented.
Method	getAlias	
Description	Gets the Resource of the alias.	
Return	osid.resource.Resource	the resource
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetCreditQuery		
Implements			
Description	This is the query interface for searching asset credits. Each method match request produces an AND term while multiple invocations of a method produce a nested OR.		
Method	matchType		
Description	Sets the credit type for this query.		
Parameters	osid.type.Type	type	asset credit type
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		type is null
Compliance	mandatory		This method must be implemented.
Method	matchPrincipal		
Description	Matches a principal credit.		
Parameters	boolean	match	true for a positive match, false for a negative match
Compliance	mandatory		This method must be implemented.
Method	matchResourceId		
Description	Sets the resource Id or alias Id for this query.		
Parameters	osid.id.Id	resourceId	the resource Id
	boolean	match	true for a positive match, false for a negative match
Errors	NULL_ARGUMENT		providerId is null
Compliance	mandatory		This method must be implemented.
Method	matchUnsetResource		
Description	Matches credits with no resource.		
Compliance	mandatory		This method must be implemented.
Method	supportsResourceQuery		
Description	Tests if a ResourceQuery is available. Each query retrieved is a nested OR term.		
Return	boolean		true if a resource query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getResourceQuery		
Description	Gets the query interface for the resource or alias.		
Parameters	boolean	match	true for a positive match, false for a negative match
Return	osid.resource.ResourceQuery		the resource query
Errors	UNIMPLEMENTED		supportsResourceQuery() is false
Compliance	optional		This method must be implemented if supportsResourceQuery() is true.

Interface	osid.repository.AssetCreditList	
Implements	osid.OsidList	
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	getNextAssetCredit	
Description	Gets the next AssetCredit in this list.	
Return	osid.repository.AssetCredit	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	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextAssetCredits	
Description	Gets the next set of AssetCredits in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n the number of AssetCredit elements requested which must be less than or equal to available()
Return	osid.repository.AssetCredit[]	an array of AssetCredit elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetAlternate	
Implements		
Description	An AssetAlternate contains an alternative asset for another asset.	
Method	getAccessibilityType	
Description	Gets the accessibility criteria this alternative meets.	
Return	osid.type.Type	the accessibility type
Compliance	mandatory	This method must be implemented.
Method	getDescription	
Description	Gets a description pertaining to how this alternative differs from or meets an accessibility requirement of the primary asset.	
Return	osid.type.Type	the type of this credit
Compliance	mandatory	This method must be implemented.
Method	getPrimaryAssetId	
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	osid.id.Id	the primary Asset Id
Compliance	mandatory	This method must be implemented.
Method	getPrimaryAsset	
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	osid.repository.Asset	the primary Asset
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getAlternativeAssetId	
Description	Gets the Id of the alternative asset.	
Return	osid.id.Id	the alternative Asset Id
Compliance	mandatory	This method must be implemented.
Method	getAlternativeAsset	
Description	Gets the alternative asset.	
Return	osid.repository.Asset	the alternative Asset
Errors	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure
Compliance	mandatory	This method must be implemented.
Method	getGrade	
Description	Gets a rating measuring the fit of the alternative asset to the primary asset.	
Return	osid.grading.Grade	a grade
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.AssetAlternateList	
Implements	osid.OsidList	
Description	<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>	
Method	getNextAssetAlternate	
Description	Gets the next AssetAlternate in this list.	
Return	osid.repository.AssetAlternate	the next AssetAlternate in this list. The hasNext() method should be used to test that a next AssetAlternate is available before calling this method.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	
Method	getNextAssetAlternates	
Description	Gets the next set of AssetCredits in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n the number of AssetAlternate elements requested which must be less than or equal to available()
Return	osid.repository.AssetAlternate[]	
Errors	ILLEGAL_STATE OPERATION_FAILED	
Compliance	mandatory	

Interface	osid.repository.Subject	
Implements	osid.OsidObject	
Description	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.	
getSubjectRecord		
Description	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.	
Parameters	osid.type.Type	subjectRecordType a subject record type
Return	osid.repository.SubjectRecord	the subject record
Errors	NULL_ARGUMENT	subjectRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasRecordType(subjectRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.SubjectQuery		
Implements	osid.OsidQuery		
Description	This is the query interface for searching subjects. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the SubjectQuery record.		
Method	matchAssetId		
Description	Sets the asset Id for this query.		
Parameters	osid.id.Id	assetId	the asset Id
	boolean	match	true if a positive match, false for negative match
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Method	supportsAssetQuery		
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	getAssetQuery		
Description	Gets the query interface for an asset.		
Parameters	boolean	match	true if a positive match, false for negative match
Return	osid.repository.AssetQuery		the asset query
Errors	UNIMPLEMENTED		supportsAssetQuery() is false
Compliance	optional		This method must be implemented if supportsAssetQuery() is true.
Method	matchRepositoryId		
Description	Sets the repository Id for this query.		
Parameters	osid.id.Id	repositoryId	a repository Id
	boolean	match	true if a positive match, false for negative match
Errors	NULL_ARGUMENT		repositoryId is null
Compliance	mandatory		This method must be implemented.
Method	supportsRepositoryQuery		
Description	Tests if a RepositoryQuery is available.		
Return	boolean		true if a repository query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getRepositoryQuery		
Description	Gets the query interface for a repository.		
Parameters	boolean	match	true if a positive match, false for negative match
Return	osid.repository.RepositoryQuery		the repository query
Errors	UNIMPLEMENTED		supportsRepositoryQuery() is false
Compliance	optional		This method must be implemented if supportsRepositoryQuery() is true.
Method	matchCompositionId		
Description	Sets the composition Id for this query.		
Parameters	osid.id.Id	compositionId	the composition Id
	boolean	match	true if a positive match, false for negative match
Errors	NULL_ARGUMENT		compositionId is null
Compliance	mandatory		This method must be implemented.

Method	supportsCompositionQuery	
Description	Tests if a CompositionQuery is available.	
Return	boolean	true if a composition query interface is available, false otherwise
Compliance	mandatory	This method must be implemented.
Method	getCompositionQuery	
Description	Gets the query interface for a composition.	
Parameters	boolean match	true if a positive match, false for negative match
Return	osid.repository.CompositionQuery	the composition query
Errors	UNIMPLEMENTED	<code>supportsCompositionQuery()</code> is false
Compliance	optional	This method must be implemented if <code>supportsCompositionQuery()</code> is true.
Method	getSubjectQueryRecord	
Description	Gets the record query interface corresponding to the given Subject record Type. Multiple record retrievals of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this query.	
Parameters	osid.type.Type subjectRecordType	a subject record type
Return	osid.repository.SubjectQueryRecord	the subject query record
Errors	NULL_ARGUMENT	subjectRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	<code>hasRecordType(subjectRecordType)</code> is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.SubjectForm	
Implements	osid.OsidForm	
Description	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.	
Method	getSubjectFormRecord	
Description	Gets the SubjectFormRecord interface corresponding to the given subejct record interface Type.	
Parameters	osid.type.Type	subjectRecordType a subject record type
Return	osid.repository.SubjectFormRecord	the record
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	
	subjectRecordType is null unable to complete request authorization failure occurred hasRecordType(subjectRecordType) is false	
Compliance	mandatory	This method must be implemented.

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

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

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

Interface	osid.repository.SubjectSearch	
Implements	osid.OsidSearch	
Description	The interface for governing subject searches.	
Method	searchWithinSubjectResults	
Description	Execute this search using a previous search result.	
Parameters	osid.repository.SubjectSearchResults	results
		results from a query
Errors	INVALID_ARGUMENT	results is not valid
	NULL_ARGUMENT	results is null
Compliance	mandatory	This method must be implemented.
Method	searchAmongSubjects	
Description	Execute this search among the given list of subjects.	
Parameters	osid.id.IdList	subjectIds
		list of subjects
Errors	NULL_ARGUMENT	subjectIds is null
Compliance	mandatory	This method must be implemented.
Method	orderSubjectResults	
Description	Specify an ordering to the search results.	
Parameters	osid.repository.SubjectSearchOrder	subjectSearchOrder
	NULL_ARGUMENT	subjectSearchOrder is null
	UNSUPPORTED	subjectSearchOrder is not of this service
Compliance	mandatory	This method must be implemented.
Method	getSubjectSearchRecord	
Description	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.	
Parameters	osid.type.Type	subjectSearchRecordType
		a subject search record type
Return	osid.repository.SubjectSearchRecord	the subject search interface
Errors	NULL_ARGUMENT	subjectSearchRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasSearchRecordType(subjectSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.SubjectSearchResults	
Implements	osid.OsidSearchResults	
Description	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.	
Method	getSubjects	
Description	Gets the subject list resulting from a search.	
Return	osid.repository.SubjectList	the subject list
Compliance	mandatory	This method must be implemented.
Method	getSubjectSearchResultsRecord	
Description	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.	
Parameters	osid.type.Type	subjectSearchRecordType a subject search record type
Return	osid.repository.SubjectSearchResultsRecord	the subject search interface
Errors	NULL_ARGUMENT	subjectSearchRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasSearchRecordType(subjectSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.repository.SubjectList	
Implements	osid.OsidList	
Description	<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>	
Method	getNextSubject	
Description	Gets the next Subject in this list.	
Return	osid.repository.Subject	the next Subject in this list. The hasNext() method should be used to test that a next Subject is available before calling this method.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextSubjects	
Description	Gets the next set of Subject elements in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n
Return	osid.repository.Subject[]	an array of Subject elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.Repository	
Implements	osid.OsidCatalog	
Description	A repository defines a collection of assets.	
	getRepositoryRecord	
Description	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.	
Parameters	osid.type.Type repositoryRecordType	a repository record type
Return	osid.repository.RepositoryRecord	the repository record
Errors	NULL_ARGUMENT	repositoryRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasRecordType(repositoryRecordType) is false
Compliance	mandatory	This method must be implemented.

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

Interface	osid.repository.RepositoryQuery		
Implements	osid.OsidCatalogQuery		
Description	This is the query interface for searching repositories. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the RepositoryQuery record.		
Method	matchAssetId		
Description	Sets the asset Id for this query.		
Parameters	osid.id.Id	assetId	a asset Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Method	supportsAssetQuery		
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	getAssetQuery		
Description	Gets the query interface for an asset.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.AssetQuery		the asset query
Errors	UNIMPLEMENTED		supportsAssetQuery() is false
Compliance	optional		This method must be implemented if supportsAssetQuery() is true.
Method	matchSubjectId		
Description	Sets the subject Id for this query.		
Parameters	osid.id.Id	subjectId	the subject Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		subjectId is null
Compliance	mandatory		This method must be implemented.
Method	supportsSubjectQuery		
Description	Tests if an SubjectQuery is available.		
Return	boolean		true if a subject query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getSubjectQuery		
Description	Gets the query interface for a subject.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.SubjectQuery		the subject query
Errors	UNIMPLEMENTED		supportsSubjectQuery() is false
Compliance	optional		This method must be implemented if supportsSubjectQuery() is true.

Method	matchCompositionId		
Description	Sets the composition Id for this query.		
Parameters	osid.id.Id	compositionId	a composition Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		compositionId is null
Compliance	mandatory		This method must be implemented.
Method	supportsCompositionQuery		
Description	Tests if a CompositionQuery is available.		
Return	boolean		true if a composition query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getCompositionQuery		
Description	Gets the query interface for a composition.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.CompositionQuery		the composition query
Errors	UNIMPLEMENTED		supportsCompositionQuery() is false
Compliance	optional		This method must be implemented if supportsCompositionQuery() is true.
Method	getRepositoryQueryRecord		
Description	Gets the record query interface corresponding to the given Repository record Type. Multiple record retrievals of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this query.		
Parameters	osid.type.Type	repositoryRecordType	a repository record type
Return	osid.repository.RepositoryQueryRecord		the repository query record
Errors	NULL_ARGUMENT		repositoryRecordType is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure occurred
	UNSUPPORTED		hasRecordType(repositoryRecordType) is false
Compliance	mandatory		This method must be implemented.

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

Interface	osid.repository.RepositoryForm	
Implements	osid.OsidCatalogForm	
Description	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.	
Method	getRepositoryFormRecord	
Description	Gets the RepositoryFormRecord interface corresponding to the given repository record interface Type.	
Parameters	osid.type.Type	repositoryRecordType a repository record type
Return	osid.repository.RepositoryFormRecord	the record
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	repositoryRecordType is null
		unable to complete request
		authorization failure occurred
		hasRecordType(repositoryRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

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

Interface	osid.repository.RepositorySearch				
Implements	osid.OsidSearch				
Description	The interface for governing repository searches.				
Method	searchWithinRepositoryResults				
Description	Execute this search using a previous search result.				
Parameters	osid.repository.RepositorySearchResults	results	results from a query		
Errors	INVALID_ARGUMENT		results is not valid		
	NULL_ARGUMENT		results is null		
Compliance	mandatory	This method must be implemented.			
Method	searchAmongRepositories				
Description	Execute this search among the given list of repositories.				
Parameters	osid.id.IdList	repositoryIds	list of repositories		
Errors	NULL_ARGUMENT		repositoryIds is null		
	UNSUPPORTED		repositoryIds is not of this service		
Compliance	mandatory	This method must be implemented.			
Method	orderRepositoryResults				
Description	Specify an ordering to the search results.				
Parameters	osid.repository.RepositorySearchOrder	repositorySearchOrder	repository search order		
Errors	NULL_ARGUMENT		repositorySearchOrder is null		
	UNSUPPORTED		repositorySearchOrder is not of this service		
Compliance	mandatory	This method must be implemented.			
Method	getRepositorySearchRecord				
Description	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.				
Parameters	osid.type.Type	repositorySearchRecordType	a repository search record type		
Return	osid.repository.RepositorySearchRecord		the repository search interface		
Errors	NULL_ARGUMENT		repositorySearchRecordType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure occurred		
	UNSUPPORTED		hasSearchRecordType(repositorySearchRecordType) is false		
Compliance	mandatory	This method must be implemented.			

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

Interface	osid.repository.RepositorySearchResults	
Implements	osid.OsidSearchResults	
Description	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.	
Method	getRepositories	
Description	Gets the repository list resulting from a search.	
Return	osid.repository.RepositoryList	the repository list
Compliance	mandatory	This method must be implemented.
Method	getRepositorySearchResultsRecord	
Description	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.	
Parameters	osid.type.Type	repositorySearchRecordType a repository search record type
Return	osid.repository.RepositorySearchResultsRecord	the repository search interface
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	repositorySearchRecordType is null
		unable to complete request
		authorization failure occurred
		hasSearchRecordType(repositorySearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.repository.RepositoryList	
Implements	osid.OsidList	
Description	<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>	
Method	getNextRepository	
Description	Gets the next Repository in this list.	
Return	osid.repository.Repository	the next Repository in this list. The hasNext() method should be used to test that a next Repository is available before calling this method.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextRepositories	
Description	Gets the next set of Repository elements in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n the number of Repository elements requested which must be less than or equal to available()
Return	osid.repository.Repository[]	an array of Repository elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE OPERATION_FAILED	no more elements available in this list unable to complete request
Compliance	mandatory	This method must be implemented.

Interface	osid.repository.Composition	
Implements	osid.OsidObject	
Description	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.	
	getCompositionRecord	
Description	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.	
Parameters	osid.type.Type	compositionRecordType a composition record type
Return	osid.repository.CompositionRecord	
Errors	NULL_ARGUMENT	compositionRecordType is null
	OPERATION_FAILED	unable to complete request
	PERMISSION_DENIED	authorization failure occurred
	UNSUPPORTED	hasInterfaceType(compositionRecordType) is false
Compliance	mandatory	
	This method must be implemented.	

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

Interface	osid.repository.CompositionQuery		
Implements	osid.OsidQuery		
Description	This is the query interface for searching compositions. Each method match request produces an AND term while multiple invocations of a method produces a nested OR, except for accessing the CompositionQuery record.		
Method	matchAssetId		
Description	Sets the asset Id for this query.		
Parameters	osid.id.Id	assetId	the asset Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		assetId is null
Compliance	mandatory		This method must be implemented.
Method	supportsAssetQuery		
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	getAssetQuery		
Description	Gets the query interface for an asset.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.AssetQuery		the asset query
Errors	UNIMPLEMENTED		supportsAssetQuery() is false
Compliance	optional		This method must be implemented if supportsAssetQuery() is true.
Method	matchRepositoryId		
Description	Sets the repository Id for this query.		
Parameters	osid.id.Id	repositoryId	the repository Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		repositoryId is null
Compliance	mandatory		This method must be implemented.
Method	supportsRepositoryQuery		
Description	Tests if a RepositoryQuery is available.		
Return	boolean		true if a repository query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getRepositoryQuery		
Description	Gets the query interface for a repository.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.RepositoryQuery		the repository query
Errors	UNIMPLEMENTED		supportsRepositoryQuery() is false
Compliance	optional		This method must be implemented if supportsRepositoryQuery() is true.

Method	matchSubjectId		
Description	Sets the subject Id for this query.		
Parameters	osid.id.Id	subjectId	the subject Id
	boolean	match	true for a positive match, false for negative match
Errors	NULL_ARGUMENT		subjectId is null
Compliance	mandatory		This method must be implemented.
Method	supportsSubjectQuery		
Description	Tests if an SubjectQuery is available.		
Return	boolean		true if a subject query interface is available, false otherwise
Compliance	mandatory		This method must be implemented.
Method	getSubjectQuery		
Description	Gets the query interface for a subject. There is only one SubjectQuery per CompositionQuery. Multiple retrievals return the same object.		
Parameters	boolean	match	true for a positive match, false for negative match
Return	osid.repository.SubjectQuery		the subject query
Errors	UNIMPLEMENTED		supportsSubjectQuery() is false
Compliance	optional		This method must be implemented if supportsSubjectQuery() is true.
Method	getCompositionQueryRecord		
Description	Gets the record query interface corresponding to the given Composition record Type. Multiple record retrievals of the same type may return the same underlying object and do not result in adding terms to the query. Multiple record retrievals of different types add AND terms to the other elements set in this query.		
Parameters	osid.type.Type	compositionRecordType	a composition record type
Return	osid.repository.CompositionQueryRecord		the composition query record
Errors	NULL_ARGUMENT		compositionRecordType is null
	OPERATION_FAILED		unable to complete request
	PERMISSION_DENIED		authorization failure occurred
	UNSUPPORTED		hasRecordType(compositionRecordType) is false
Compliance	mandatory		This method must be implemented.

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

Interface	osid.repository.CompositionForm									
Implements	osid.OsidForm									
Description	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.									
Method	getCompositionFormRecord									
Description	Gets the CompositionFormRecord interface corresponding to the given repository record interface Type.									
Parameters	osid.type.Type	compositionRecordType a composition record type								
Return	osid.repository.CompositionFormRecord	the record								
Errors	<table> <tr> <td>NULL_ARGUMENT</td> <td>compositionRecordType is null</td> </tr> <tr> <td>OPERATION_FAILED</td> <td>unable to complete request</td> </tr> <tr> <td>PERMISSION_DENIED</td> <td>authorization failure occurred</td> </tr> <tr> <td>UNSUPPORTED</td> <td>hasRecordType(compositionRecordType) is false</td> </tr> </table>		NULL_ARGUMENT	compositionRecordType is null	OPERATION_FAILED	unable to complete request	PERMISSION_DENIED	authorization failure occurred	UNSUPPORTED	hasRecordType(compositionRecordType) is false
NULL_ARGUMENT	compositionRecordType is null									
OPERATION_FAILED	unable to complete request									
PERMISSION_DENIED	authorization failure occurred									
UNSUPPORTED	hasRecordType(compositionRecordType) is false									
Compliance	mandatory	This method must be implemented.								

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

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

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

Interface	osid.repository.CompositionSearch				
Implements	osid.OsidSearch				
Description	The interface for governing composition searches.				
Method	searchWithinCompositionResults				
Description	Execute this search using a previous search result.				
Parameters	osid.repository.CompositionSearchResults	results	results from a query		
Errors	INVALID_ARGUMENT		results is not valid		
	NULL_ARGUMENT		results is null		
Compliance	mandatory	This method must be implemented.			
Method	searchAmongCompositions				
Description	Execute this search among the given list of compositions.				
Parameters	osid.id.IdList	compositionIds	list of compositions		
Errors	NULL_ARGUMENT		compositionIds is null		
	UNSUPPORTED		compositionSearchOrder is not of this service		
Compliance	mandatory	This method must be implemented.			
Method	orderCompositionResults				
Description	Specify an ordering to the search results.				
Parameters	osid.repository.CompositionSearchOrder	compositionSearchOrder	composition search order		
Errors	NULL_ARGUMENT		compositionSearchOrder is null		
	UNSUPPORTED		compositionSearchOrder is not of this service		
Compliance	mandatory	This method must be implemented.			
Method	getCompositionSearchRecord				
Description	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.				
Parameters	osid.type.Type	compositionSearchRecordType	a composition search record type		
Return	osid.repository.CompositionSearchRecord				
Errors	NULL_ARGUMENT		compositionSearchRecordType is null		
	OPERATION_FAILED		unable to complete request		
	PERMISSION_DENIED		authorization failure occurred		
	UNSUPPORTED		hasSearchRecordType(compositionSearchRecordType) is false		
Compliance	mandatory	This method must be implemented.			

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

Interface	osid.repository.CompositionSearchResults	
Implements	osid.OsidSearchResults	
Description	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.	
Method	getCompositions	
Description	Gets the composition list resulting from a search.	
Return	osid.repository.SubjectList	the subject list
Compliance	mandatory	This method must be implemented.
Method	getCompositionSearchResultsRecord	
Description	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.	
Parameters	osid.type.Type	compositionSearchRecordType
Return	osid.repository.CompositionSearchResultsRecord	the composition search interface
Errors	NULL_ARGUMENT OPERATION_FAILED PERMISSION_DENIED UNSUPPORTED	compositionSearchRecordType is null
		unable to complete request
		authorization failure occurred
		hasSearchRecordType(compositionSearchRecordType) is false
Compliance	mandatory	This method must be implemented.

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

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

Interface	osid.repository.CompositionList	
Implements	osid.OsidList	
Description	<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>	
Method	getNextComposition	
Description	Gets the next Composition in this list.	
Return	osid.repository.Composition	the next Composition in this list. The hasNext() method should be used to test that a next Composition is available before calling this method.
Errors	ILLEGAL_STATE	no more elements available in this list
	OPERATION_FAILED	unable to complete request
Compliance	mandatory	This method must be implemented.
Method	getNextCompositions	
Description	Gets the next set of Composition elements in this list which must be less than or equal to the return from available().	
Parameters	cardinal	n
	the number of Composition elements requested which must be less than or equal to available()	
Return	osid.repository.Composition[]	an array of Composition elements. The length of the array is less than or equal to the number specified.
Errors	ILLEGAL_STATE	no more elements available in this list
	OPERATION_FAILED	unable to complete request
Compliance	mandatory	This method must be implemented.