

TANDBERG Content Server Integration with IBM Websphere server

TANDBERG ConferencePortlet

A WHITE PAPER BY

TANDBERG

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I. Executive Summary

The TANDBERG Content Server leverages visual communications by enabling organizations to record, manage and distribute video conference presentations and business meetings. TANDBERG provides public documentation for its Content Server Application Programming Interfaces (APIs) which allow developers to integrate Content Server functionality into third-party products. TANDBERG has released a free, open code sample ConferencePortlet for use with IBM Websphere.

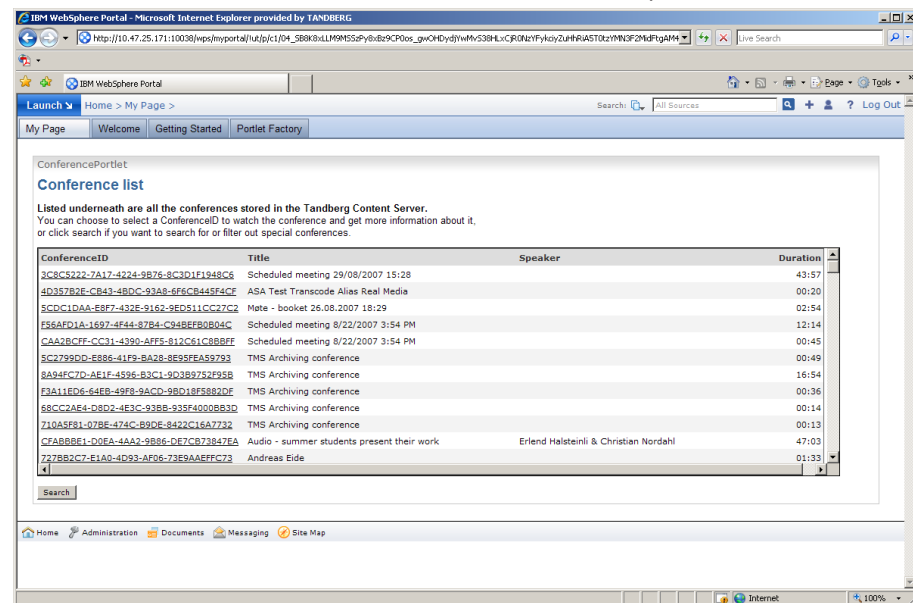
The TANDBERG ConferencePortlet empower users by providing a single point of access to manage the display of visual content from the familiar and widely deployed content management interface of Websphere.

This white paper provides a case study of sample integration of core Content Server functionality within the Websphere environment and assures that developers have the documentation, tools, and knowledge necessary to innovate around TANDBERG technology. TANDBERG is committed to maintaining and extending the level of integration through its API to other management interfaces of the Content Server.

The code is not intended to be used as is, but rather a proof of concept to be build upon.

The major user benefits include:

- Easy access to recorded visual content on the TANDBERG Content Server through a Websphere portlet.
- Integration of valuable visual content, such as CEO briefings, education classes and sales demonstrations, as well as human-resources briefings and training programs, into one document sharing and corporate workflow within Websphere.



A screenshot of the Conference Portlet in Websphere.

TANDBERG is a leading global provider of visual communication products and services with dual headquarters in New York and Norway. TANDBERG designs, develops and markets systems and software for video, voice and data. The company provides sales, support and value-added services in more than 90 countries worldwide.

Table of Contents

I. Executive Summary	2
II. TANDBERG Portlet Functionality.....	4
III. System Requirements and Installation	7
IV. TANDBERG Content Server API	9
V. Summary	10
VI. Disclaimer – License Agreements.....	10
Appendix A – Builders description	11
Appendix B – Portlet map.....	14

II. TANDBERG Portlet Functionality

ConferencePortlet for Websphere is a solution for managing the viewing of visual communications content based on IBM Websphere and TANDBERG Content Server technology.

The major user benefits include:

- Easy access to recorded visual content on the TANDBERG Content Server.

The conference Portlet will:

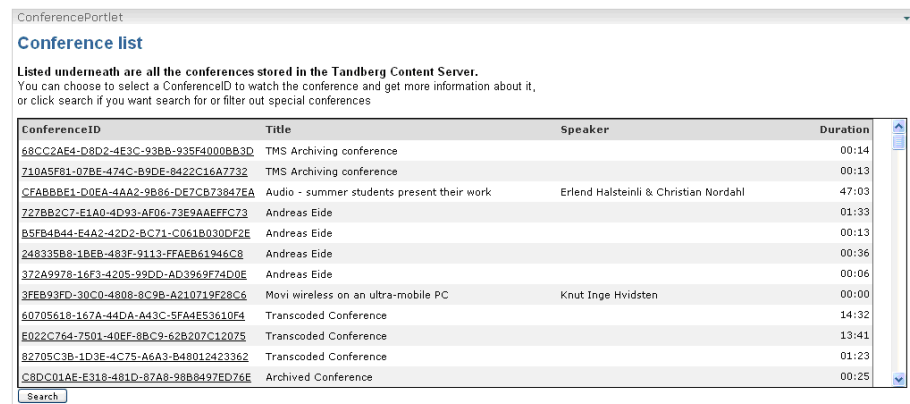
- Display a list of all stored conferences from the Tandberg Content Server.
- Display all relevant information about each conference.
- Show clickable URL's that leads directly to the Tandberg Content Servers interface with the corresponding conference.
- Provide links to conferences of different qualities and formats, which opens the correct media program when clicked.
- Locate conferences by using different search criteria.
 - Description
 - Name
 - Presenter
 - Copyright
 - Keywords
- Various search terms for exclusions and/or inclusions can be used.

ConferencePortlet Functionality

ViewAllConferences

The ViewAllConferences of the portlet shows a list of all stored conferences in the Tandberg Content Server. This page is made up from a View & Form builder called ViewAllConferences. This builder defines how the result from the web service call getAllConferences is displayed.

Other builders are used to format the presented information. TimeFormatter edits the duration field to the correct format. ConferenceListLimiter and ConferenceHeaderModifier limit the information displayed about each conference in the list.



The screenshot shows a web browser window titled "ConferencePortlet". Below the title is a "Conference list" section. A note states: "Listed underneath are all the conferences stored in the Tandberg Content Server. You can choose to select a ConferenceID to watch the conference and get more information about it, or click search if you want search for or filter out special conferences". Below this is a table with columns: ConferenceID, Title, Speaker, and Duration. The table contains 14 rows of conference data. At the bottom of the table is a "Search" input field.

ConferenceID	Title	Speaker	Duration
58CC2AF4-D8D2-4E3C-93BB-935F4000BB3D	TMS Archiving conference		00:14
710A5F81-07BE-474C-B9DE-8422C16A7732	TMS Archiving conference		00:13
CFARBEE1-D0FA-4AA2-9B86-DE7CB73847EA	Audio - summer students present their work	Erlend Halsteinli & Christian Nordahl	47:03
727BB2C7-E1A0-4D93-AF06-73E9AAEFFC73	Andreas Eide		01:33
95FB4B44-F4A2-42D2-BC71-C061B03DDF2E	Andreas Eide		00:13
248335B8-1BEB-483F-9113-FFAEB61946C8	Andreas Eide		00:36
372A978-16F3-4205-99DD-AD3969F74D0E	Andreas Eide		00:06
3FEB93FD-30C0-4808-8C9B-A210719F28C6	Movi wireless on an ultra-mobile PC	Knut Inge Hvidsten	00:00
60705618-167A-44DA-A43C-SFA4E53610F4	Transcoded Conference		14:32
E022C764-7501-40EF-8BC9-62B207C12075	Transcoded Conference		13:41
92705C3B-1D3E-4C75-A6A3-B48012423362	Transcoded Conference		01:23
C9DC01AE-E318-481D-87A8-9888497ED76E	Archived Conference		00:25

SearchForConferenceView

The search button will direct to SearchForConferenceView; an input page for search terms. The rules for searching are shown in this page.

ConferencePortlet

Search page

Searches work on description, name, presenter, copyright and keywords

Example Search Terms:

word matches "word" anywhere in the field, including "swordplay"
 matches only words that begin with "word", using spaces and commas as word delimiters
 *word matches only words that end with "words", as above
 ^word matches "word" only at the beginning of the field
 word\$ matches "word" only at the end of the field

Prevent the above by putting your words in quotes

"word1 word2" matches a phrase, preserves number of spaces and all special characters above

Prevent the above by putting your words in quotes

-word hides conferences that contain "word"

NOT term negates the sense of the search for that term

OR term terms are normally joined by an AND

AND just like term

NOT and OR must be uppercase (as must AND if used, although AND is the default term)

SearchExpression:

There are two buttons on this page. The cancel button leads back to the ViewAllConferences page, while the search button invokes the SearchForConferenceAction. SearchForConferenceAction calls the right data service (searchConference with the right argument for the search) and links to a page that views the returned information.

ConferencePortlet

Conference list

Listed underneath are the conferences that were filtered out according to your search criterias.
 You can choose to select a ConferenceID to watch the conference and get more information about it, or click search if you want search for or filter out special conferences

ConferenceID	Title	Speaker	Duration
727BB2C7-E1A0-4D93-AF06-73E9AAEF7C73	Andreas Eide		01:33
85FB4844-F4A2-42D2-BC71-C061B030DF2E	Andreas Eide		00:13
248335B8-18EB-483F-9113-FFAEB61946C8	Andreas Eide		00:36
372A9978-16F3-4205-99DD-AD3969F74D0E	Andreas Eide		00:06
2B912629-05A4-4B3F-801C-93E24C2ADD5A	Andreas Eide		12:43
4BC5C1B2-8195-442D-A838-268A255B0CC5	Andreas Eide	Andreas Eide	59:00
8F9713C8-1098-44A4-956F-3F9A903B048C	Andreas Eide from Singapore Airlines using Movi		02:49
589366E0-7FA0-422E-9CA7-9AF39984BC6F	Andreas Eide from Singapore Airlines using Movi		01:04
B7B34F72-40AA-4D2A-8DD3-583EEE904657	Andreas Melding AM	Andreas Eide	00:53
E5596625-B77E-499A-6820-9BEDA2EEC9CE	Google	andreas.eide	07:32
F270FC82-3330-46DC-B05D-51059F4C5724	S2 Technical Overview	andreas.eide	06:48

ViewSelectedConference

A click on a conference id in ViewAllConferences, getConferenceAction will be invoked. This builder displays information about a particular conference. VideoFieldPlayerModifier and TimeFormatter produce the links to TANDBERG Content Server and the recorded conferences in different qualities. ConferenceDetailsLimiters limits the information shown about the specific conference.

Selected Conference	
ConferenceID	D70B4356-643C-49EB-A9E1-BEAC80491AA0
Title	TANDBERG automatic tracking camera
Description	We present a new approach to automatic camera tracking. Joint audio and video processing is used to give reliable speaker localization, and a Virtual Director presents the active talker in a dynamic PiP layout, keeping an overview of the meeting room.
URL	http://10.47.1.12/tcs/?id=D70B4356-643C-49EB-A9E1-BEAC80491AA0
Speaker	Gisle Enstad, Per Ove Husøy, Jan Tore Korneliusen
Keywords	Teck Zone 2007
Copyright	
DateTime	Jan 04 2007 02:25PM
Duration	39:23
Owner	RD-TCS1\Administrator
WindowsMedia	
	128K
	384K
<input type="button" value="Cancel"/>	

A click on the ConferenceID in the list of searched conferences triggers `getConferenceActionFromSearched`. This action displays the data in `ViewSelectedConference` (pictured above). The information displayed in `ViewSelectedConference` are manipulated and limited by builders like `VideoFieldPlayerModifier`, `TimeFormatter`, all `SearchedConferenceDetailsLimiters`, `SearchedConferenceHeaderModifier`, `LinkToUrlSearched` and `DateFormatterSearched`.

See Appendix B for a complete map over the portlets interactions.

III. System Requirements and Installation

The solution is compatible with TANDBERG Content Server v 2.0 and above and IBM Websphere V 6.0.

TANDBERG Content Server configuration

The following section only deals with configurations required for integration with Websphere. For a detailed guide on setting up your Content Server, download the latest version of the Content Server User Manual from the Documentation section of the www.tandberg.net site.

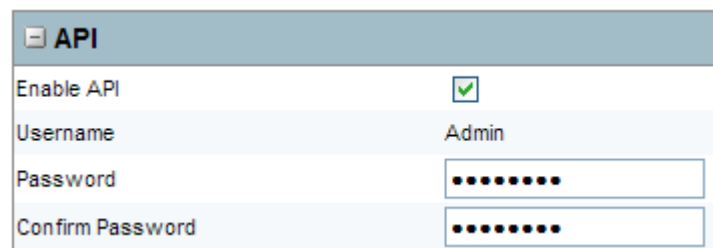
Enable TANDBERG Content Server API

The API must be enabled and the API Username and Password are required for the Conference Portlet to communicate with the Content Server and must be provided when configuring the Portlet.

The API administrative username is **Admin**

The default API password is **TANDBERG** and should be changed to a strong password when setting up your Content Server.

1. Log in to the Content Server interface as an administrator.
2. Check that the API is enabled in Site Settings (the API is enabled by default).
3. Change the default password to a strong password.



API	
Enable API	<input checked="" type="checkbox"/>
Username	Admin
Password
Confirm Password

IBM Websphere configuration and installation

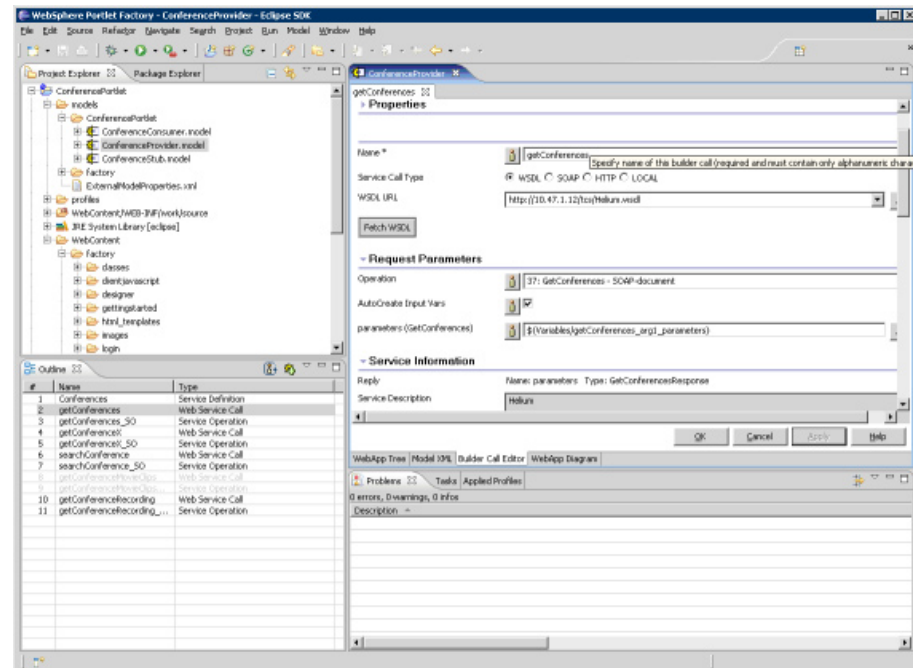
The following steps assume that you have set up and installed IBM Websphere application server, IBM DB2 and Portlet Factory V6.x.

The files to be imported are located under c:\Websphere\ExportedPortlet in the zip image containing the ConferencePortlet.

Importing

1. Open Portlet Factory
2. Select the Project that contains the WAR files to the Application Server profile in use, or create a new Websphere Portlet Factory Project with the Application server profile settings (follow the tutorial for project creation that is provided with Portlet Factory)
3. Right click the project and select import -> import..

4. Select General -> Archive File and click next
5. Select the ConferencePortlet.zip as “from archive file” and click finish
6. Check that the .models class are imported into the project, and that the WAR files have been placed the correct place(in the WebContent folder)
7. Open the ConferenceProvider.model



8. In all Web Service call builders:
 - Insert the URL of the WSDL of the TANDBERG Content Server API and click “Fetch WSDL”¹
 - Select the correct Operation (Equal to the name of the web service call builder, for example “GetConferences”)
 - Check the “AutoCreate input vars”
 - In Advanced: Insert the “Override URL” (the URL of the TANDBERG Content Server API should be inserted), and insert Username and Password for the API².
9. Right click the project, and select Build Portlet Factory WAR

Reset Websphere

To enable the Conference Portlet the Websphere portal needs to be restarted.

Either reboot the server, or start the services in the following order:

1. Application Server
2. DB2
3. Portal Express

The Conference Portlet should now be ready to add to Websphere sites like any other portlet.

¹ The address of the WSDL is <ip/dns address of content server>/tcs/HeLium.wsdl

² The user name and password configuration is described in the **Enable TANDBERG Content Server API** section.

IV. TANDBERG Content Server API

The TANDBERG Content Server includes an Application Programmer Interface (API) designed to provide a mechanism for the Content Server to interact with third-party applications. API categories include Call Management, Recording, Content Library and External Management.

Call Management API commands enable third party applications to make video calls which will be recorded on the TANDBERG Content Server, to get detailed information about calls in progress and to disconnect a call in progress.

The Recording API allows systems to retrieve and modify recording templates, call configuration files and Recording Aliases.

The Content Library API allows systems to retrieve a list of recorded conferences from the Content Server. The list can return all conferences or conferences based on special criteria, such as search words, date/time, category and access. It is possible to modify the access and title for existing conferences and to delete conferences. The API also enables systems to retrieve and modify the Content Library configuration file, which includes settings for guest access, authentication, TMS and the API. The sample Portlet uses the `GETCONFERENCES` API command.

The External Management API allows management systems, such as the TANDBERG Management Suite (TMS), to schedule calls on the TANDBERG Content Server, retrieve system information and get call capacity for standalone or cluster implementations. It also allows external systems to retrieve and modify the Content Engine configuration file, which includes settings for the gatekeeper, NAT, site codec support and default media storage location. This API is used for Content Server integration with the TANDBERG Management Suite (TMS) as well as for communication between the Controller and the Nodes in a TANDBERG Content Server cluster.

The API uses a Simple Object Access Protocol (SOAP) 1.2 interface. The API is secure and requires authentication from each SOAP client for each API call.

In addition, the Content Server can also be queried to return xml documents with configuration and status information. The `configuration.xml` document provides useful information about Site Settings and the Recording Aliases which have been set up on the Content server. `Status.xml` document provides information about the current call status of the Content Server, with details for calls currently in progress, remaining disk capacity and CPU load.

The API and XML responses provide a convenient way to check the status of the Content Server, retrieve information and modify the Content Server settings.

A detailed technical description of the API and the additional XML responses can be found on www.tandberg.net site in TANDBERG Content Server API documentation (D13980).

V. Summary

The sample open source code TANDBERG ConferenceCreate and ConferenceView builders provide a solution which allows users to seamlessly access the key functionality of the TANDBERG Content Server from the IBM Websphere environment. The ConferenceView builder allow the integration of valuable visual content, such as CEO briefings, education classes and sales demonstrations, as well as human-resources briefings and training programs, into one document sharing and corporate workflow within Websphere.

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Appendix A – Builders description

The ConferencePortlet is divided into a ConferenceConsumer model, a ConferenceProvider model and a ConferenceStub. Models can be similar to java classes, while builders are units that add up to a model. A portlet will consist of several models that consist of several builders.

ConferenceConsumer.model consists of the following builders:

- (Service Consumer) **ConferenceConsumer** is the main consuming builder. This builder defines which model the ConferenceConsumer consumes from, and the initial input values for the consumer calls.
- (Action List) **getConferenceAction** is a series of method calls. The main reason for this builder is to get info about a specific conference from the ConferenceProvider. It gets a ConferenceID as parameter, and then calls two data definitions (getConferenceX and getConferenceRecording) which both returns details about the specific conference. It finally links to the page where the returned information is displayed.
- (Action List) **getConferenceActionFromSearched** is similar to getConferenceAction. The only difference is that it links to another page after having called the same methods as getConferenceAction. This is necessary to display information about a searched conference instead of a conference from the list.
- (Action List) **SearchForConferenceAction** takes a searchExpression as argument, and executes a search for the right conferences using web service calls. It then links to the page where the returned data is displayed.
- (View & Form) **ViewAllConferences** makes a representable list of the returned values from GetConferences Dataservice. It uses custom HTML pages and templates to make the GUI
- (View & Form) **ViewConference** makes a representable GUI of the selected Conference's information. getConferenceAction calls the methods for acquiring the information and then links to the ViewConference page.
- (View & Form) **ViewSelectedConference** is the same implementation as ViewConference. The only difference is that this page displays a selected searched conference instead of a selected conference from the conference list.
- (View & Form) **ViewSearchedConference** makes a representable GUI of the returned values from a conferencesearch. It uses custom HTML pages and templates to make the GUI.
- (Data Field Modifier) **getConferenceLink** makes the ConferenceID column in the conference list clickable. It links to getConferenceAction when clicked.
- (Data Field Modifier) **getConferenceLinkFromSearched** makes the ConferenceID column in the list of returned conferences from a search clickable. It links to getConferenceActionFromSearched when clicked.
- (Data Field Modifier) **VideoFieldPlayerModifier** makes the movie details in selected conference from conference list and selected conference from searched conference list clickable. It links to the variable link of where the actual conference is stored, automatically opens a movie player, and plays the conference.
- (Data Field Modifier) **TimeFormatter** formats the Duration fields in 4 pages from number of seconds to the format MM:SS.
- (Data Column Modifier) **ConferenceListLimiter** limits the information displayed in the conference list. It excludes unimportant information retrieved from the return call of getAllConferences.
- (Data Column Modifier) **SearchedConferenceListLimiter** limits the information displayed in the searched conference list. It excludes unimportant information retrieved from the return call of viewSearchedConference.
- (Data Column Modifier) **ConferenceDetailsLimiter** limits the information displayed about a selected conference from the conference list.
- (Data Column Modifier) **ConferenceDetailsQuicktimeLimiter** limits the information dis-

played about a selected conference from the conference list.

- (Data Column Modifier) **ConferenceDetailsRealtimeLimiter** limits the information displayed about a selected conference from the conference list.
- (Data Column Modifier) **ConferenceDetailsWMLimiter** limits the information displayed about a selected conference from the conference list.
- (Data Column Modifier) **ConferenceDetailsUserLimiter** limits the information displayed about a selected conference from the conference list.
- (Data Column Modifier) **SearchedConferenceDetailsLimiter** limits the information displayed about a selected searched conference from the searched conference list.
- (Data Column Modifier) **SearchedConferenceDetailsQuicktimeLimiter** limits the information displayed about a selected searched conference from the searched conference list.
- (Data Column Modifier) **SearchedConferenceDetailsRealtimeLimiter** limits the information displayed about a selected searched conference from the searched conference list.
- (Data Column Modifier) **SearchedConferenceDetailsWMLimiter** limits the information displayed about a selected searched conference from the searched conference list.
- (Data Column Modifier) **SearchedConferenceDetailsUserLimiter** limits the information displayed about a selected searched conference from the searched conference list.
- (Data Column Modifier) **ConferenceHeaderModifier** edits the header of the selected conference from the conference list.
- (Data Column Modifier) **SearchedConferenceHeaderModifier** edits the header of the selected conference of the searched conference list.
- (Data Column Modifier) **SearchedConferenceListModifier** edits the header of the searched conference list.
- (Input Form) **SearchForConferenceView** makes an input form for the search for conference page. The GUI is made from HTML template files and pages.
- (Button) **getConferenceCancel** is placed on the selected conference page, and it links back to the conference list page.
- (Button) **getConferenceSearchCancel** is placed on the search conference page, and it links back to the conference list page.
- (Button) **SearchConferenceView** is placed on the conference list page, and it links to the search input page.
- (Button) **BackToSearchConferenceView** is placed on the selected searched conference page, and it links to the search results page.
- (Button) **backToSearchWord** is placed on the searched conference result page, and it links back to the search input page.
- (Link) **LinkToURL** makes the URL in the details page of selected conference from conference list clickable. When clicked it automatically opens a default browser and links to the Content Server URL.
- (Link) **LinkToURLSearched** makes the URL in the details page of selected conference from searched conference list clickable. When clicked it automatically opens a default browser and links to the Content Server URL.
- (Formatted Text) **DateFormatter** formats the date in conference from conference list details to the right format.
- (Formatted Text) **DateFormatterSearched** formats the date in conference from searched conference list details to the right format.
- (Portlet Adapter) **ConferencePortlet** makes the actual portlet. It compiles the models to a portlet and saves the portlet in the portlet WARs so that the portlet will be available in the portal.

ConferenceConsumer.model consists of the following builders:

- (Service Definition) **Conferences** define the service that this provider is going to offer.

It also defines which stub model to use, and how to create it.

- (Web Service Call) **getConferences** defines the web service call to get all conferences.
- (Service Operation) **getConferences_SO** defines how the getConferences web service call will be executed.
- (Web Service Call) **getConferencesX** defines the web service call to get one specific conferences.
- (Service Operation) **getConferencesX_SO** defines how the getConferences web service call will be executed.
- (Web Service Call) **searchConferences** defines the web service call to get specific conferences.
- (Service Operation) **searchConferences_SO** defines how the getConferences web service call will be executed.

Appendix B – Portlet map

