Digital Signage Specification 2012A

Version 1.1

11 May 2012

This specification includes minor updates to a previous version
and is therefore not in the current HTNG specification template.

About HTNG

Hotel Technology Next Generation (HTNG) is a non-profit association with a mission to foster, through collaboration and partnership, the development of next-generation systems and solutions that will enable hoteliers and their technology vendors to do business globally in the 21st century; to be recognized as a leading voice of the global hotel community, articulating the technology requirements of hotel companies of all sizes to the vendor community; and to facilitate the development of technology models for hospitality that will foster innovation, improve the guest experience, increase the effectiveness and efficiency of hotels, and create a healthy ecosystem of technology suppliers.

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1   Change History

Messaging Requirements

Date	Description	Author
September 2006	First Draft	Neil Schubert, Angela Skoda
October 6, 2006	Updated based on input from Oct. 3 meeting in Boston	Angela Skoda
October 20, 2006	Updated based on the October 13 and October 20 conference calls	Angela Skoda
November 7, 2006	Removed push of data from the Sales and Catering system. Remove references to a reservation identifier	Angela Skoda
November 30, 2006	Added "Response Complete" flag	Angela Skoda
October 30, 2010	Added sendAlternateLanguageText attribute to Both the *Request schema's so secondary language fields can be requested. Added some secondary* attributes so alternate language information can be returned in the response messages. Added sample XML messages to the tool kit which demonstrate the use of the Request for Alternate language feature.	Jesse Peters
November 2011	Reviewed and ratified by HTNG Governance Council-appointed team and membership	
11 May 2012	2012A General Release	

Messaging Specification

Date	Author	Comments
01/19/2007	Alex Shore, Newmarket International, Inc.	Initial draft
02/02/2007	Alex Shore, Newmarket International, Inc.	Schema changes from Digital Signage conference call. For MeetingSpaceResponse – require

		@meetingKey and Group/@name. For Characteristics request – require property key. For response, added property node similar to how the MeetingSpaceResponse is organized. Updated sample SOAP xml in appendix.
03/23/2007	Alex Shore, Newmarket International, Inc.	Changes from the 03/16/2007 conference call: Fixed namespace typo for MeetingSpaceRequest in the wsdl. Added new fault type for too large of a date range specified.
4/15/2008	Ken Jones	1. Updated MeetingSpaceResponse schema as defined below. 2. Removed sample XML from this document, and added a reference to the actual sample XML included with the API.
5/15/2008	Ken Jones	Removed Draft label from cover page.
November 2011		Reviewed and ratified by HTNG Governance Council-appointed team and membership
11 May 2012		Version 1.1 of specification released

Schema Changes

Date	Author	Schema	Comments
01/11/2007	Alex Shore	All except fault schemas	Version 0.3 schemas posted to the HTNG collaboration site for review by Digital Signage group.
01/19/2007	Alex Shore	All	Changed verbiage to use MeetingSpace and MeetingSpaceCharacteristics instead of Event and MeetingRoom.
02/02/2007	Alex Shore	MeetingSpaceCharacteristicsRequest.xsd, MeetingSpaceCharacteristicsResponse.xsd, MeetingSpaceResponse.xsd	See above Document changes notes for v1.1.
03/23/2007	Alex Shore	MeetingSpaceServiceFaults.xsd	Added fault for too large of a date range.

05/15/2008	Ken Jones	MeetingSpaceResponse.xsd	1. Change Room Key length restrictions from 3 characters to 1 (Element: MeetingSpace).
			2. Link Sub Meetings (Sub Functions) to their parent Meeting (Main Function)
			3. Add Backup/Overflow Room Key to the MeetingSpaceResponse file (Element: MeetingSpace) and allow multiple occurrences of BackupMeetingRoom and OverFlowRoom elements.
			4. Restructure the schema for the MeetingSpaceResponse to better represent the relationship between Event, Meetings and Sub–Meetings and to avoid duplication of the Event information on each Meeting Space.
			5. Change the startDate,startTime attributes to a single attribute named startDateTime defined as xsd:DateTime
10/30/2010	Jesse Peters	MeetingSpaceCharacteristicsRequest.xsd, MeetingSpaceCharacteristicsResponse.xsd, MeetingSpaceResponse.xsd MeetingSpaceRequest.xsd	Added sendAlternateLanguageText attribute to Request schema's so secondary

			language fields can be requested. Added a number of secondary* attributes so fields containing alternative languages can be returned in the response messages. Also added sample XML messages which used the new alternative language request feature. The feature is optional and when the request attribute is missing the messages are compliant to the older Schemas.
03/07/2011	Ken Jones	Schema name changes: MeetingSpaceCharacteristicsResponse.xsd was renamed to MeetingSpaceCharacteristicsResponse_v3.xsd MeetingSpaceResponse.xsd was renamed to MeetingSpaceResponse_v3.xsd	These schemas were renamed due to some field length constraints that were removed. The field length constraints were removed to be compatible with the longer Delphi 9.6 field lengths. This schema is backward compatible with previous versions.
November 2011		Schema name changes: MeetingSpaceCharacteristicsResponse_v3.xsd was renamed to MeetingSpaceCharacteristicsResponse.xsd MeetingSpaceResponse_v3.xsd was renamed to MeetingSpaceResponse.xsd	Changed to be more consistent with HTNG naming scheme.
11 May 2012		Version 1.1 of specification released with HTNG 2012A general release	

2   Document Information

Purpose

This document provides functional, business, and technical descriptions of the web service requests that are available for querying Meeting Space information from a Sales & Catering application. Expertise in XML, SOAP, and HTTP is required.

The Meeting Space API is a synchronous request/response architecture that provides real-time data back to the caller. This API uses an HTNG 2.0 (draft)-compliant web service.

Terminology

For the purpose of this document the following terms have been defined as follows:

Term	Definition
Vendor	For the purposes of this document, a Vendor is any client that uses the Meeting Space Request web service. An example of a Vendor is a digital signage software application.
Meeting Space	A meeting being used by a group at a hotel for a certain period of time.
Event	A booking associated with a company, account, or agency. A booking can have sleeping rooms and meeting space information.
HTNG	The HTNG protocol is fully described at www.htng.org. The Meeting Space services are using the HTNG 2.0 framework draft specification.
Property	For the purposes of this document, "property" is the term used for a hotel, facility, resort, etc. The term is used generically.
messageID	GUID that identifies a specific transaction. This value is set by the client in the WS-Addressing SOAP header.
PropertyKey	This value uniquely defines a hotel property for a sales & catering system.

Referenced Documents

The following table shows the documents on which this API document is dependent:

Name	Description	Location
HTNG 2.0 Framework	Describes the web service framework standards that workgroups must adhere to.	https://www.opengroup.org/htng/propws.pma/protected/upreviews/30/2176/orig/Framework_2_REV_1_0_5_spec.html
HTNG 2.1 Framework	Describes the web service framework standards that workgroups must adhere to.	http://collaboration.htng.org/specs/documents.php?action=show&dcat=25&gdid=22364
Digital Signage Messaging Requirements	Document made by the Digital Signage workgroup to define the requirements of the meeting space interface.	Included as 3 of this document; https://www.opengroup.org/htng/propws.gdi/protected/doc.tpl?CALLER=latest_doc.tpl&gdid=12353

3 Digital Signage Messaging Requirements

Background

This chapter is a collection of Digital Signage Messaging requirements provided by the HTNG Digital Signage Workgroup. Collectively, we have decided to focus the first release of this specification on the messaging between Sales and Catering systems and Digital Signage Vendors. Other sources of information for digital signage, for example, PMS systems, HR systems, Internet Media, etc. will be addressed in future releases.

Functional Requirements

Hotel digital signage deployment consists of television and/or video monitor display technology deployed in public space areas in order to communicate messages to hotel guests and employees. Examples of digital signage applications include locations such as, lobby walls, restaurants and bars, meeting room entry or foyer, conventional halls, exhibit halls, kiosks, and back of house employee systems. Guestroom applications are also used to present messages on hotel room televisions and, potentially, other display technologies such as display telephones.

While this document focuses on the requirements for sales and catering system messaging, we acknowledge that a more comprehensive messaging standard will be required in future releases of this specification.

Overall Assumptions

1. The current business requirement will only accommodate request/response messages initiated by the digital signage application. Future releases of this specification will address a "push" of data from the sales and catering source system.

2. The digital signage application can pull information from the source system either through an automated batch pull or a user-initiated trigger within the digital signage application.

3. The scope of this interface has been limited to messages between a Sales and Catering system and a digital signage application. Information about an individual guest and their participation in an event would require separate PMS integration, which is currently considered out of scope, but will be considered in future releases of this specification.

4. A full set of information will be passed and it is up to the digital signage application to recognize changes, if needed.

5. Each hotel will need to have the ability to regulate and control the frequency of any automated pull of data initiated from the digital signage application. Performance concerns around the frequency of data transfer must be considered.

6. Each hotel will need to have the ability to regulate the number of transactions that can be passed through the interface.

Definitions:

- Group – An account, for example, IBM.

- Event – An entire piece of group business, for example, IBM North America Conference

- Meeting – A subset of an event, usually in a single room, for example, a breakout session.

Sales and Catering Systems

Selection Criteria – The digital signage application will need the ability to request sales and catering information associated with any combination of the following:

- by property identifier
- by date/time range (with some limit on the number of days)
- by event identifier
- by exhibit flag (Y/N)
- by "postable" flag (Y/N)
- by room grouping (physical location, such as a wing)

This request message should also contain an identifier that specifics how this request was initiated, either through a batch process or through a user-initiated process. This identifier would be appended to the request.

Proposed Sales and Catering Response Data

- Hotel Name and related identifier
- Group Name and related identifier
- Group logo URL or pathname
- Event Name and related identifier
- Event logo URL or pathname
- Event "Post As" Name
- Host Event Identifier (parent of this event, used to indicate a Host/Affiliate relationship)
- Meeting Room Space Display Name and related identifier
- Meeting Name and related identifier (e.g., breakfast, lunch)
- Meeting "Post As" Name (free form description of meeting)
- Date
- Start Time (local time for the property)

- End Time (local time for the property)
- Postable Flag –Y/N
- Exhibit Flag – Y/N
- Backup Meeting Room Space Name
- Overflow Meeting Room Space Name
- Response Complete – Y/N

Meeting Space Characteristics

Separate request/response. This data will be refreshed very rarely, when there is a change in meeting room names or configuration.

- Meeting Room Identifier
- Meeting Room Space Display Name
- Floor number
- Floor description
- Room grouping (physical location like a wing, building, etc)
- Directions to the meeting room
- Room Type (Divisible/Indivisible)
- Parent Meeting Room Identifier
- Map reference number

4   Functional Overview

Functional Flow

Below is an example of the flow that would be executed when a Vendor requests Meeting Space or Meeting Space Characteristics data from the Sales & Catering system's web service.

System Roles

The following table defines the system roles for this interface:

Message	Sales and Catering	Digital Signage	Property Management System
Request Meeting Space	Web Service Provider	Web Service Consumer	Web Service Consumer
Request Meeting Space Characteristics	Web Service Provider	Web Service Consumer	Web Service Consumer

Meeting Space Request – Vendor to Sales & Catering

Description

This service request returns Meeting Space data for the specified property key. The caller can optionally specify the following filter criteria:

- Event key
- Whether or not the Meeting Space is an exhibit
- Whether or not the Meeting Space is postable
- A room grouping

- A date/time range

Service Request Flow
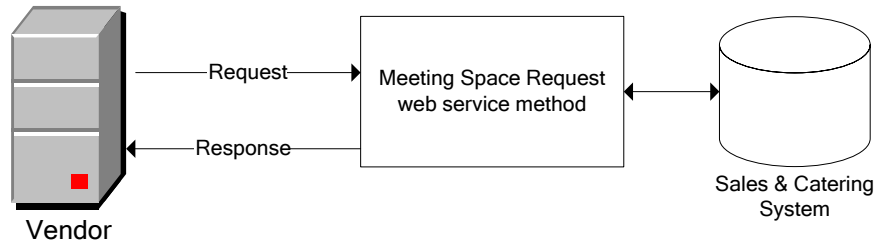
Meeting Space Characteristics Request – Vendor to Sales & Catering

Description

This service request return Meeting Space Characteristics for one or all properties registered with the Sales & Catering system.

Service Request Flow

5 Technical Descriptions

Meeting Space Request – Vendor to Sales & Catering

Overview

The Vendor will post a SOAP envelope containing the XML document defined by the schema to the Sales & Catering published SOAP service.

Service Specifications

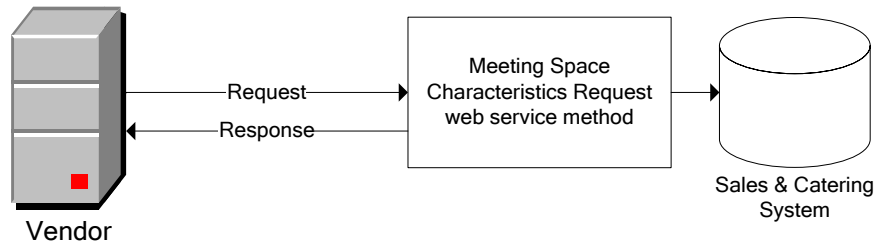|	
Service Type	SOAP
Service Name	MeetingSpaceService
Service Operation	MeetingSpaceRequest
Service Parameter Name	MeetingSpaceRequest
Response Type	xml data
Response Value	MeetingSpaceRequest_Sample.xml
Header Action:	http://htng.org/PWSWG/2007/01/DigitalSignage/MeetingSpaceRequest
URL:	nnn.nnn.nnn.nnn defined *by the IP address used to reach the S & C web service.*
Resource:	/MeetingSpaceService/Request.asmx?WSDL
Input Schema:	MeetingSpaceRequest.xsd
Output (response) Schema:	MeetingSpaceResponse.xsd, or MeetingSpaceServiceFaults.xsd when a SOAP exception is thrown.

Sample Request Message

MeetingSpaceRequest_Sample.xml	This file is included as Chapter 0.

Sample Response Message

MeetingSpaceResponse_Sample.xml	This file is included as Chapter 7.2.

Error Faults

If an error occurs, then the response xml data is not returned and a SOAP fault is thrown from the web service. The fault type can be one of the following:

Fault Type	Description
NoMeetingSpaceFoundFault	No Meeting Space entities were found for the specified input filter parameters.
InvalidDateTimeFault	An invalid date or time was specified, or the relationship between the start date and end date is not valid.
InvalidPropertyKeyFault	An invalid property key was specified.
InvalidRoomGroupingFault	An invalid room grouping was specified.
InvalidEventKeyFault	An invalid event key was specified.
DigitalSignageGenericFault	An error occurred and cannot be properly categorized by any of the previous fault types.
DateRangeTooLargeFault	The date range specified was too large to process.

Meeting Space Characteristics Request – Vendor to Sales & Catering

Requirements

The Vendor will post a SOAP envelope containing the XML document defined by the schema to the Sales & Catering published SOAP service.

Service Specifications

Service Type	SOAP
Service Name	MeetingSpaceService
Service Operation	MeetingSpaceCharacteristicsRequest
Service Parameter Name	MeetingSpaceCharacteristicsResponse
Response Type	xml data
Response Value	MeetingSpaceCharacteristicsResponse_Sample.xml
Header Action:	http://htng.org/PWSWG/2007/01/DigitalSignage/MeetingSpaceCharacteristicsRequest
URL:	nnn.nnn.nnn.nnn defined *by the IP address used to reach the S & C web service*
Resource:	/MeetingSpaceService/Request.asmx?WSDL
Input Schema:	MeetingSpaceCharacteristicsRequest.xsd

Output (response)   MeetingSpaceCharacteristicsResponse.xsd, or
schema: MeetingSpaceServiceFaults.xsd when a SOAP exception is thrown.

Sample Request Message

| MeetingSpaceCharacteristicsRequest_Sample.xml | This file is included as Chapter 21.3. |

Sample Reponse Message

| MeetingSpaceCharacteristicsResponse_Sample.xml | This file is included as Chapter 21.4. |

Error Faults

If an error occurs, then the response xml data is not returned and a SOAP fault is thrown from the web service. The fault type can be one of the following:

Fault Type	Description
NoMeetingSpaceFoundFault	No meeting space was found in the Sales & Catering system for the specified property (if a property key was included in the request).
InvalidPropertyKeyFault	An invalid property key was specified.
DigitalSignageGenericFault	An error occurred and cannot be properly categorized by any of the previous fault types.

6   Business Rules

Usage

1. All outbound Sales & Catering XML messages are UTF-8 encoded.
2. All inbound vendor XML messages must be UTF-8 encoded.
3. All XML should be XML encoded by the Vendor before passing that data to the Sales & Catering web service. The following are examples which should be followed for encoding the XML message. By no means does this constitute a complete list of special encoding.
   - The character < should be encoded as <.
   - The character > should be encoded as >.
   - The character & should be encoded as &.
   - All attributes should use the double quote to delimit the attribute value. If the attribute values contains a double quote, then that double quote should be encoded as ".
4. The SOAP message should follow the HTNG 2.0 draft specification. This includes the following details in the inbound request message:
   - Creation of a WS-Addressing message ID that is included in the SOAP request.
   - Provide a Sales & Catering supplied username and password token in the SOAP request using WS-Security.

Caching

The Sales & Catering system reserves the right to make a configurable response cache to prevent excessive requests from Vendor systems.

7   MeetingSpaceService WSDL

The WSDL definition for this service can be found in the WSDL File: **MeetingSpaceService.wsdl**

8   SOAP Examples

This section provides sample SOAP transactions that are used to communicate with the MeetingSpaceService web service and can be found in the companion zip file.

Meeting Space Request

Both files show examples of a raw SOAP request for Meeting Space data.

Sample Files: **MeetingSpaceRequest_Sample.xml or MeetingSpaceRequest_Secondary_Sample.xml**

Meeting Space Response

Both samples show examples of the Meeting Space response SOAP message. Note that the wsa:RelatesTo guid in the SOAP header will be the same value that was sent up as the wsa:MessageID in the request. The LCID attribute optionally indicates the language code ID.

Note: the *isResponseComplete* attribute at the top level MeetingSpaceResponse node is used to tell the caller if all of the requested data was returned. There can be cases where all of the data is not returned because the calller did not use a specific enough set of input filter parameters.

Sample Files: **MeetingSpaceResponse_Sample.xml or MeetingSpaceResponse_Secondary_Sample.xml**

Meeting Space Characteristics Request

Both files show examples of the Meeting Space Characteristics request SOAP message.

Sample Files: **MeetingSpaceCharacteristicsRequest_Sample.xml or MeetingSpaceCharacteristicsRequest_Secondary_Sample.xml**

Meeting Space Characteristics Response

Both files show examples of the raw SOAP response messsage for Meeting Space Characteristics data. The LCID optionally attribute indicates the language code ID.

Sample Files: **MeetingSpaceCharacteristicsResponse_Sample.xml or MeetingSpaceCharacteristicsResponse_Secondary_Sample.xml**

Meeting Space Service SOAP Faults Returned to Client

When an error occurs within the MeetingSpaceService web service, it throws a custom exception back to the caller. The possible types of exceptions returned are defined as *Error Faults* in sections 0 and 0. The definitions for these faults are defined in the MeetingSpaceServiceFaults.xsd schema, which is referenced from the MeetingSpaceService.wsdl.

This is an example of a SOAP envelope for Meeting Space response data where an exception has been thrown on the server because the end date ocurred after the start date.

Sample File: **MeetingSpaceResponse_SOAP_Fault_Sample.xml**