



**Society of Cable  
Telecommunications  
Engineers**

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**ENGINEERING COMMITTEE  
Digital Video Subcommittee**

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**AMERICAN NATIONAL STANDARD**

**ANSI/SCTE 130-3 2013**

**Digital Program Insertion-Advertising Systems Interfaces**

**Part 3**

**Ad Management Service (ADM) Interface**

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# Digital Program Insertion–Advertising Systems Interfaces

## Part 3–Ad Management Service (ADM) Interface

### 1.0 SCOPE

This document in conjunction with the SCTE 130 Part 3 Extensible Markup Language (XML) schema document (i.e., the XSD document) defines the XML messages expressing placement opportunities, placement decisions, and placement related event data typically exchanged between an Ad Management Service (ADM) and an Ad Decision Service (ADS). Additionally, this document and the accompanying schema document describe the auxiliary XML messages, elements, and attributes supporting the primary message exchanges.

### 2.0 REFERENCES

#### 2.1 Normative references

The following documents contain provisions, which, through reference in this text, constitute provisions of the standard. At the time of Subcommittee approval, the editions indicated were valid. All standards are subject to revision; and while parties to any agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents may not be compatible with the referenced version.

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| [SCTE130-2] | SCTE 130-2 2008a: Digital Program Insertion—Advertising Systems Interfaces Part 2 – Core Data Elements         |
| [SCTE130-7] | SCTE 130-7 2009: Digital Program Insertion – Advertising Systems Interfaces Part 7 – Message Transport.        |
| [SCTE130-8] | SCTE 130-8 2011: Digital Program Insertion — Advertising Systems Interfaces Part 8—General Information Service |

All normative references found in SCTE 130 Part 2 are normatively included and apply to this document. See [SCTE130-2] for additional information.

#### 2.1.1 Normative Reference Acquisition

##### 2.1.1.1 SCTE Standards: United States of America

Society of Cable Telecommunications Engineers Inc., 140 Philips Road, Exton, PA 19341; Telephone 800-542-5040; Facsimile: 610-363-5898; E-mail: [standards@scte.org](mailto:standards@scte.org); URL: <http://www.scte.org>.

## 2.2 Informative References

The following documents may provide valuable information to the reader but are not required when complying with this standard.

|             |                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| [CLADI3-0]  | MD-SP-CONTENTv3.0-I02-121210: CableLabs Metadata 3.0 Specification                                                                            |
| [SCTE130-1] | SCTE 130-1 2011: Digital Program Insertion—Advertising Systems Interfaces Part 1 – Overview.                                                  |
| [SCTE130-4] | SCTE 130-4 2011: Digital Program Insertion—Advertising Systems Interfaces Part 4 – Content Information Service.                               |
| [SCTE130-5] | SCTE 130-5 2010: Digital Program Insertion—Advertising Systems Interfaces Part 5 –Placement Opportunity Information Service .                 |
| [SCTE130-6] | SCTE 130-6 2010: Digital Program Insertion—Advertising Systems Interfaces Part 6 – Subscriber Information Service.                            |
| [SCTE35]    | ANSI/SCTE 35 2012—Digital Program Insertion Cueing Message for Cable.                                                                         |
| [RFC2326]   | RFC 2326, “Real Time Streaming Protocol (RTSP)”, April 1998, <a href="http://www.ietf.org/rfc/rfc2326.txt">www.ietf.org/rfc/rfc2326.txt</a> . |
| [SCTE118-2] | ANSI/SCTE 118-2 2012 Program-Specific Ad Insertion-Content Provider to Traffic Communication Applications Data Model                          |

### 2.2.1 Informative Reference Acquisition

#### 2.2.1.1 CableLabs Specifications

Cable Television Laboratories, Inc. (CableLabs), 858 Coal Creek Circle,Louisville, CO 80027; Phone 303-661-9100; URL: <http://www.cablelabs.com/projects/metadata>.

#### 2.2.1.2 SCTE Standards: United States of America

See Section 2.1.1.1.

#### 2.2.1.3 IETF

IETF Secretariat (c/o NeuStar, Inc.), 45000 Center Oak Plaza, Sterling, VA, 20166, Phone: 1.571.434.3500; Facsimile: 1.571.343.3535; E-mail: [ietf-info@ietf.org](mailto:ietf-info@ietf.org); URL: <http://www.ietf.org>.

### 3.0 COMPLIANCE NOTATION

|              |                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| “SHALL”      | This word or the adjective “REQUIRED” means that the item is an absolute requirement of this specification.                                                                                                                                                                       |
| “SHALL NOT”  | This phrase means that the item is an absolute prohibition of this specification.                                                                                                                                                                                                 |
| “SHOULD”     | This word or the adjective “RECOMMENDED” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighted before choosing a different course.                             |
| “SHOULD NOT” | This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label. |
| “MAY”        | This word or the adjective “OPTIONAL” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.                      |

### 4.0 DEFINITION OF TERMS

Throughout this standard the terms below have specific meanings. Because some of the terms are defined in other SCTE documents having very specific technical meanings, the reader is referred to the original source for their definition. For terms defined by this standard, brief definitions are given below.

All SCTE 130 Part 2, SCTE 130 Part 7 and SCTE 130 Part 8 definitions are normatively included herein. See [SCTE130-2], [SCTE130-7] and [SCTE130-8] for additional information.

This document additionally defines the following terms:

**ADM interface:** The ADM to ADS message communication link defined by SCTE 130 Part 3 (i.e., this document and its companion XML schema document).

**Deprecated:** Use is permissible for legacy purposes only. Deprecated features may be removed from future versions of the standard. Implementations should avoid use of deprecated features.

**interstitial:** A placement opportunity occurring between entertainment assets (e.g., placement opportunities that exist between music videos in a playlist). An interstitial placement opportunity is not associated with the entertainment assets that may be part of a session containing interstitial placement opportunities. An interstitial placement opportunity does not preclude the entertainment asset preceding the interstitial placement

opportunity from having post-roll placement opportunities or the entertainment asset following from having pre-roll placement opportunities.

**mid-roll:** A placement opportunity occurring within an entertainment asset.

**placement:** The decision resulting from a placement opportunity which may include a content binding and a set of constraints.

**placement management:** The aggregated operational sequence of placement messaging and placement update messaging.

**placement operations:** Placement management aggregated with placement status messaging.

**placement messaging:** The PlacementRequest / PlacementResponse message exchange sequence.

**placement status messaging:** The PlacementStatusNotification / PlacementStatusAcknowledgement message exchange sequence.

**placement update messaging:** The PlacementUpdateNotification / PlacementUpdateAcknowledgement message exchange sequence.

**placement opportunity:** A potentially constrained location relative to digital content where ad insertion or content alterations may occur. The alterations may include insertions, replacements, or deletions of content in whole or in part. These locations, which contain the opportunity for content insertion, have traditionally been referred to as avails [SCTE35] for linear video content; however, placement opportunity refers to address and time locations where content may be placed, regardless of platform.

**placement service:** The distinctive information (i.e., characteristic set) identifying an entertainment content flow where advanced advertising techniques may apply.

**post-roll:** A placement opportunity following the play out of an entertainment asset.

**pre-roll:** A placement opportunity preceding an entertainment asset. (Note: Definition differs from SCTE 35. See [SCTE35].)

**registration-established service channel:** A service channel duration commencing with a successful placement service registration and continuing until either participating logical service completes terminating an active service channel. (Note: This document refines the SCTE 130 Part 2 definition by qualifying the registration as a placement service registration. See [SCTE130-2] for the base definitions.)

## 5.0 ABBREVIATIONS

All SCTE 130 Part 2, SCTE 130 Part 7 and SCTE 130 Part 8 abbreviations are normatively included herein. See [SCTE130-2], [SCTE130-7] and [SCTE130-8] for additional information.

This document additionally uses the following abbreviations:

PODM: Placement Opportunity Data Model

UTC: Coordinated Universal Time

VOD: Video on Demand

## 6.0 INTRODUCTION

The Ad Management Service (ADM) and the Ad Decision Service (ADS) are core elements in a standardized SCTE 130 advanced advertising system. Both the ADM and the ADS shall be SCTE 130 compliant logical services implementing all messages and message semantics as defined in SCTE 130 Part 2 and this document. See [SCTE130-2] for additional Part 2 information.

The ADM originates messages articulating ad insertion opportunities (i.e., placement opportunities) with the primary communication consumer being the ADS. The ADS determines how advertising content is combined with non-advertising (entertainment) content assets (i.e., placement decisions). The ADM completes the opportunity/decision lifecycle via reporting activity events (i.e., placement status). The ADM/ADS communication interface is defined herein and it is referred to as the ADM interface throughout the remainder of this specification. The ADM interface facilitates both preconfigured ad decisions as well as real-time placement selection.

Figure 1 illustrates a very basic example advertising system utilizing only an ADM and an ADS. Figure 1 represents one possible configuration and many other combinations beyond the illustration are possible.

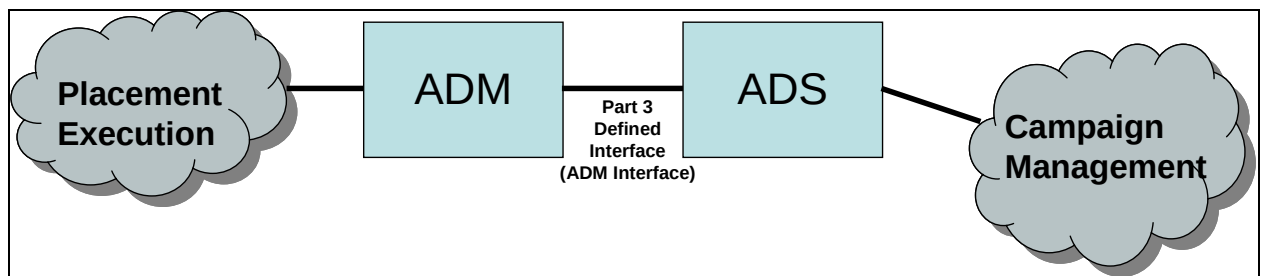


**Figure 1: A Very Basic SCTE 130 Advertising System**

In Figure 1, the placement system, represented by the Placement Execution cloud, is responsible for opportunity determination and placement execution (e.g., content insertion/splicing). Communication between the ADM and the Placement Execution cloud is outside the scope of this specification. The ADM, via the ADM interface, communicates placement opportunities and placement status to the ADS and the ADS returns placement decisions as a response to placement opportunities. The Campaign Management cloud symbolizes the system providing the information necessary for the ADS to render ad decisions. Communication between the ADS and the Campaign Management cloud is outside the scope of this specification. The internal implementation and operation of both the ADM and the ADS are outside the scope of this specification.

The ADM and the ADS may be clients of any SCTE 130 defined logical service as illustrated in Figure 2.

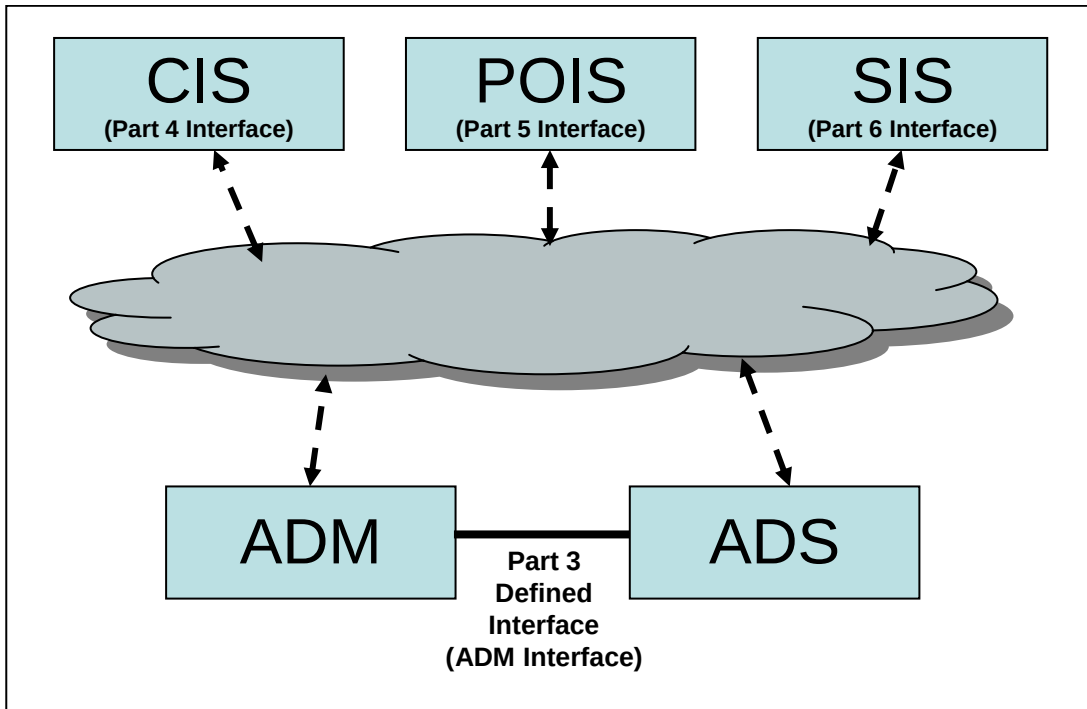


**Figure 2: SCTE 130 Logical Service Relationships**

The Content Information Service (CIS) provides content asset metadata and availability information for both advertising and non-advertising content. See [SCTE130-4] for additional information. The Placement Opportunity Information Service (POIS) may supply placement opportunity descriptions. See [SCTE130-5] for additional information. The Subscriber Information Service (SIS) may provide relevant subscriber information such as advertising focus refinement parameters. See [SCTE130-6] for additional information. With the exception of the ADM interface (i.e., the ADM/ADS communication path), all Figure 2 elements are outside the scope of this specification.

An ADM may support multiple, simultaneously active ADS as each ADS may provide different placement decision services. An ADS may provide the same decision services or different services to multiple ADM simultaneously. Figure 3 illustrates these possible high level interconnects.

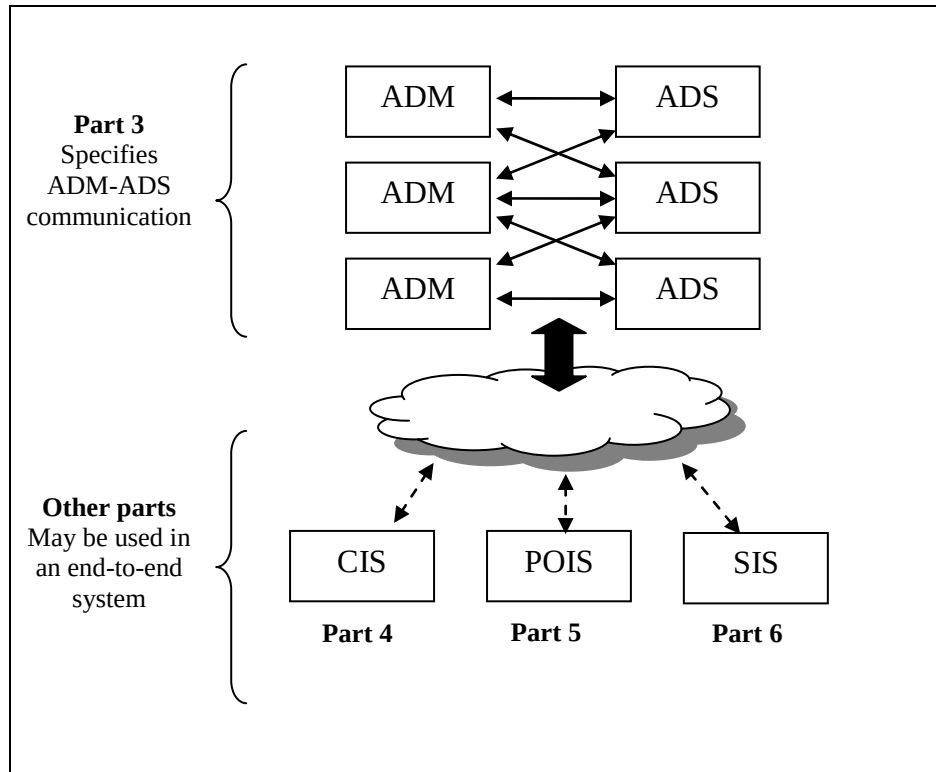


**Figure 3: ADM/ADS Interconnects**

Figure 4 illustrates a more sophisticated example SCTE 130 advertising system leveraging multiple SCTE 130 logical services. Figure 4 represents one possible configuration and many other combinations beyond the illustration are possible.

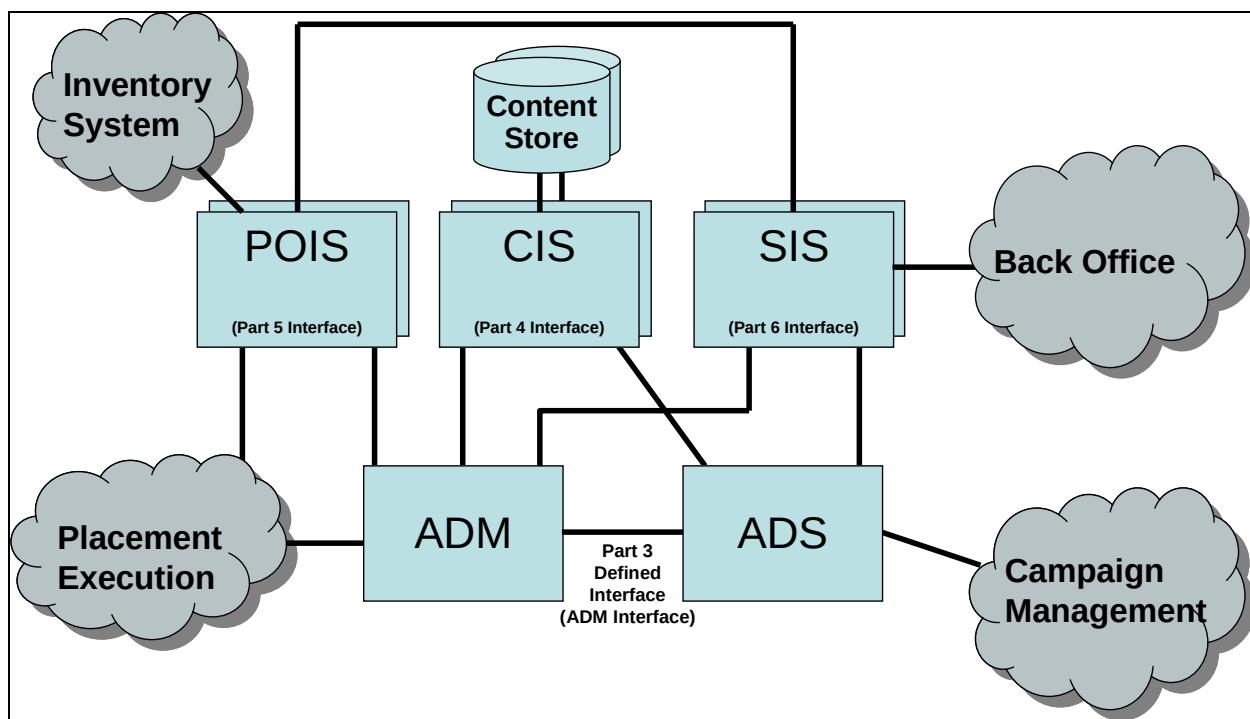


**Figure 4: SCTE 130 Advertising System Example**

In this example, the Placement Execution cloud and/or the ADM block may consult the POIS for placement opportunity information with the POIS fronting the Inventory System cloud. Additionally, the ADS may communicate with the POIS to acquire the same placement opportunity information for its usage. The Inventory System cloud symbolizes the advertising opportunity scheduling systems. Either or both the ADM and ADS may communicate with the CIS to obtain content asset metadata and ad asset availability information. The ADM, ADS, and/or the POIS may communicate with the SIS in order to obtain relevant subscriber information such as advertising focus refinement parameters and placement opportunity enablement. This SIS fronts the Back Office cloud which represents the Operation Support Systems (OSS) and Business Support Systems (BSS). With the exception of the ADM interface, all Figure 4 elements are outside the scope of this specification.

## 6.1 Document Organization

This document provides a structured, logical approach to the SCTE 130 ADM interface. Each subsequent section focuses on a particular specification aspect and this document's presentation order provides a top-down, conceptual introductory understanding necessary to implement the ADM interface.

Section 7 explains this document's notational conventions and Section 8 identifies the processing conventions. Section 9 defines the XML namespace usage and the applicable XML semantics. Section 10 introduces the ADM interface messaging concepts.

Section 11 defines the ADM interface logical service management messages and Section 12 defines the placement operations messages. Section 11 and subsequent sections often may reference XML attributes and elements defined later in this document. The reader may occasionally need to reference other document sections or SCTE 130 Part 2 [SCTE130-2] in order to find the complete explanation of a syntactic component.

Section 13 presents the ADM interface's XML attributes and complex types followed by Section 14 which defines the specification's individual XML elements. Attributes, complex types, and elements in Section 13 and Section 14 are presented in alphabetical order. Appendix A provides the normative status code values, their meanings, and their message usage applicability followed by Appendix B which is an informative example.

## 6.2 Placement Service

The term placement service refers to the distinctive information identifying an entertainment content flow where advanced advertising techniques may apply. Typically, the ADM is provisioned to be aware of the entertainment content for which it shall offer placement opportunities and this configuration generally occurs via some external mechanism which is outside the scope of this specification. Example entertainment content includes a traditional linear broadcast network feed, a zoned form of the broadcast network, or a specific provider's collection of on-demand video assets to name just a few types.

The actual placement service definition is a compound information grouping utilizing two XML elements—the SystemContext element and the Service element. See Section 14.49 and Section 14.41 respectively for additional information. A placement service is identifiable via the Service element's @id attribute. Placement service organization is facilitated via the ServiceDescription element. See Section 14.42 for additional information. The combination of elements and their sub-elements provide for a rich placement service expression capability.

The ADM may be queried for its list of provisioned placement services via the list ADM services message exchange. See Section 11.2 for additional information. Based upon the list of offered placement services, the ADS registers for the placement services for which it desires to provide placement decisions. See Section 11.3 for additional information regarding registration. The ADS registration may be more or less general than the details provided by the list ADM services message exchange.

The remainder of this document defines the ADM interface.

## 7.0 NOTATIONAL CONVENTIONS

### 7.1 Normative XML Schema

See [SCTE130-2] for information.

## 7.2 Document Conventions

This specification utilizes the same document conventions as SCTE 130 Part 2. See [SCTE130-2] for conventions and XML schema illustration nomenclature explanations.

This specification utilizes XML substitution groups for additional extensibility. XML substitution groups designate elements as substitutes for other element declarations without changing the original schema documents. Within this document, substitutable elements are graphically identified using the following illustrative technique.

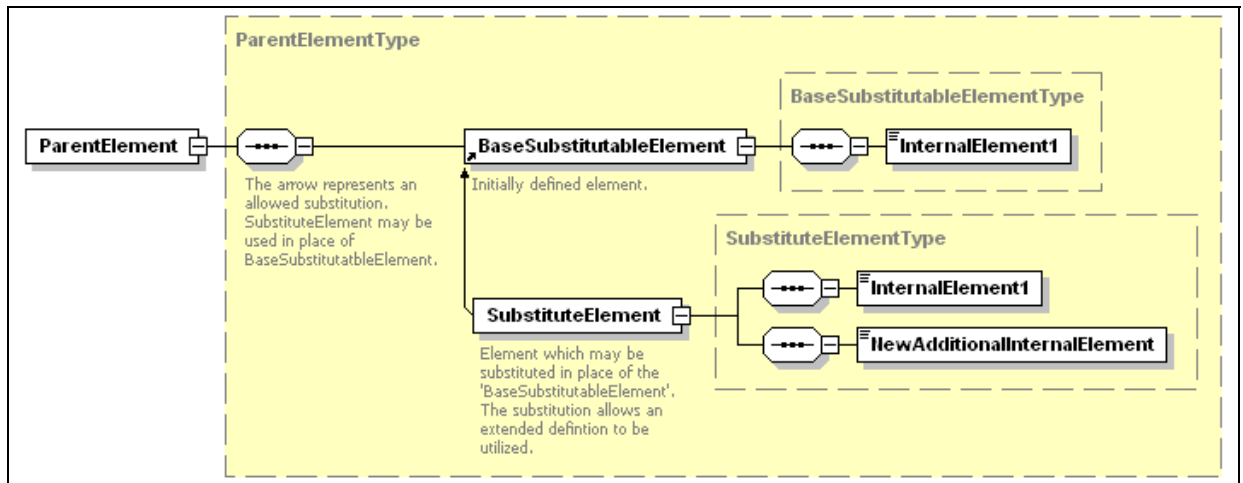


**Figure 5: Substitution Group Schema Convention**

In Figure 5, the element referred to as “SubstituteElement” may be used in place of the element named “BaseSubstitutableElement” provided the XML namespace declarations are included in the document as per [W3C-XSD]. The diagram’s illustrative arrow signals the reader of the possible element substitution.

## 8.0 PROCESSING CONVENTIONS

### 8.1 Unknown/Unrecognized/Unsupported XML Elements and Attributes

See [SCTE130-2] for information.

## 9.0 XML NAMESPACES

This document uses the ‘*adm*’ prefix for the interface associated with this specification’s XML namespace URI. This URI shall be used by all implementations applying this specification. Table 1 lists the prefix, the corresponding namespace, and a description of the defining specification.

| Prefix  | Namespace                                        | Description                                                            |
|---------|--------------------------------------------------|------------------------------------------------------------------------|
| core    | http://www.scte.org/schemas/130-2/2008a/core     | SCTE 130 Part 2. See [SCTE130-2].                                      |
| adm     | http://www.scte.org/schemas/130-3/2008a/adm      | SCTE 130 Part 3 (i.e., this specification).                            |
| admwsdl | http://www.scte.org/wsdl/130-3/2010/adm          | Appendix C.                                                            |
| adswsdl | http://www.scte.org/wsdl/130-3/2010/ads          | Appendix C.                                                            |
| podm    | http://www.scte.org/schemas/130-3/2008a/adm/podm | Appendix D.                                                            |
| xsd     | http://www.w3.org/2001/XMLSchema                 | XML foundation. See [XMLSchemaP1 from SCTE130-2 normative references]. |

**Table 1: XML Namespace Declarations**

### 9.1 @version Attribute

For this specification's defined messages, the message's @version attribute shall be set to the value "1.3" corresponding to this document's revision. For those messages defined by SCTE 130 Part 2, the @version value shall be set to the value defined and specified in SCTE 130 Part 2. See [SCTE130-2] for additional information.

The @version attribute in conjunction with the namespace identifier (see Table 1) form the formal specification version identification.

See Section D.4.1 for further clarification of PODM versioning in this release.

## 10.0 ADM INTERFACE MESSAGE INTRODUCTION

The following topics are covered by SCTE 130 Part 2 and this specification considers all aspects defined therein to be normative and applicable herein. See [SCTE130-2] for information specific to this list and for expanded associated topics.

- Message format
- XML message carriage
- Transport mechanisms
- Message error handling
- High availability

The ADM interface defined herein shall include all messages defined in SCTE 130 Part 2 and all ADM interface messages shall be compliant with SCTE 130 Part 2 [SCTE130-2]. Table 2 enumerates the ADM interface messages defined herein along with the message originators (i.e., the message sources). Both the ADM and the ADS shall be compliant

with all messages listed in Table 2 and all Table 2 message's @version attribute shall comply with Section 9.1.

| Message                                 | Source     | Registration Required |
|-----------------------------------------|------------|-----------------------|
| <b>SCTE 130 Part 3 Defined Messages</b> |            |                       |
| ListADMServicesRequest                  | ADS        |                       |
| ListADMServicesResponse                 | ADM        |                       |
| ADSRegistrationRequest                  | ADS        |                       |
| ADSRegistrationResponse                 | ADM        |                       |
| ListADSRegistrationRequest              | ADS        |                       |
| ListADSRegistrationResponse             | ADM        |                       |
| ADSDeregisterRequest                    | ADS        | X                     |
| ADSDeregisterResponse                   | ADM        | X                     |
| ADSDeregistrationNotification           | ADM        | X                     |
| ADSDeregistrationAcknowledgement        | ADS        | X                     |
| PlacementRequest                        | ADM        | X                     |
| PlacementResponse                       | ADS        | X                     |
| PlacementUpdateNotification             | ADS        | X                     |
| PlacementUpdateAcknowledgement          | ADM        | X                     |
| PlacementStatusNotification             | ADM        | X                     |
| PlacementStatusAcknowledgement          | ADS        | X                     |
|                                         |            |                       |
| <b>SCTE 130 Part 2 Defined Messages</b> |            |                       |
| core:ServiceStatusNotification          | ADM or ADS |                       |
| core:ServiceStatusAcknowledgement       | ADM or ADS |                       |
| core:ServiceCheckRequest                | ADM or ADS |                       |
| core:ServiceCheckResponse               | ADM or ADS |                       |

**Table 2: SCTE 130 Part 3 Messages and Message Sources**

Typically, a communication channel, referred to as service channel (see [SCTE130-2] for additional information) is established between two logical services in order to enable one service to deliver messages to another logical service. The service channel comprises both the logical and physical characteristics and the service channel lifecycle is dependent on the message type.

There are two common service channel lifecycles for this specification's messages. The first service channel lifecycle is limited to the duration of the single message pair exchange (i.e., a send and receive). The second service channel lifecycle duration commences with a successful placement service registration and continues until either participating logical service completes terminating the active service channel. This second service channel lifecycle is referred to herein as a registration-established service channel.

In Table 2, the column “Registration Required” indicates whether the specific message requires a registration-established service channel in order to be sent or received. A successful and active registration message exchange creating a registration-established service channel shall occur before any of these messages shall be sent and these messages shall only be exchanged for the active service channel duration. Registration-established service channel termination shall prohibit these messages from being exchanged on the concluded service channel.

Once successfully constructed, the registration-established service channel shall remain active until terminated via deregistration. Normal service channel termination shall occur via a deregistration message exchange. Abnormal termination (e.g., a system failure, etc.) should attempt to use the normal deregistration sequences. However, these situations may require alternative deregistration mechanisms outside the scope this specification.

Deregistration may be initiated by either the ADS or the ADM using an `ADSDeregisterRequest` or an `ADSDeregistrationNotification` message respectively. Physical and/or transport layer connections may transition without impacting the service channel active state. That is, the registration-established service channel maintains its operational state independent of the transport persistence. For example, if TCP/IP is used as the transport protocol, the TCP/IP connection may be terminated and re-established multiple times during which time the registration-established service channel is considered to remain persistent.

The ADM interface message exchanges are grouped into the following general activity categories:

Logical service management which covers:

- Communication management including placement service offering descriptions, registration, and deregistration
- Status management including logical service health checks, logical service status notifications, and active registration listing

Placement operations which includes:

- Placement management including placement opportunity descriptions, placement decisions which may include placements and placement updates
- Placement status consisting of placement event reporting which “close the loop” on placement decisions

Figure 6 illustrates a high-level overview of the typical message exchange sequences between an ADS and an ADM.

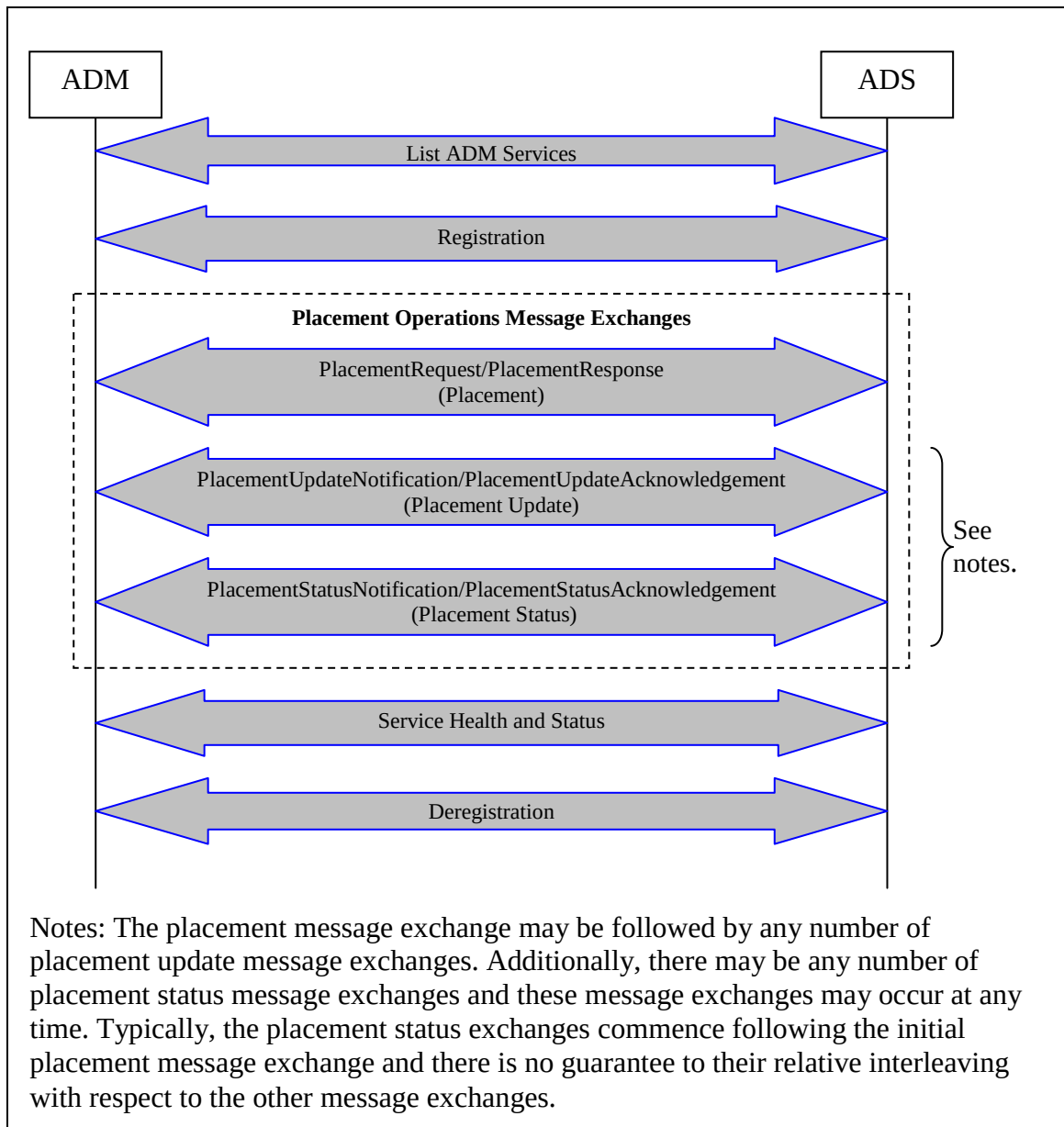


**Figure 6: Message Exchange Overview**

The ADS may obtain the list of offered ADM placement services, capabilities and message exchange endpoints using the ListADMServices message exchange. The ADS registers its placement decision intentions using the registration message exchange and terminates its placement service relationship using the deregistration message exchange. At any time, either logical service may notify or check the service health and status of the peer.

The placement operations message exchanges encompass placement messaging (i.e., PlacementRequest/PlacementResponse messages), placement update messaging (i.e., PlacementUpdateNotification/PlacementUpdateAcknowledgement messages), and placement status messaging (i.e.,

PlacementStatusNotification/PlacementStatusAcknowledgement messages). These message exchanges describe placement opportunities, placement decisions, placement decision updates, and placement reporting for the placement decisions.

## 11.0 ADM INTERFACE—LOGICAL SERVICE MANAGEMENT MESSAGES

Excluding placement operations messages, this specification defines the following message exchanges for the purpose of logical service provisioning and status management:

- List offered placement services—a detailed list of ADM provided placement services, ADM capabilities, and ADM message exchange endpoints.
- Registration—ADS placement service identification and establishment of the service channel(s).
- Registration status—a report of the established placement services and their service channels.
- Deregistration—the termination of placement services and their established service channels.
- Logical service health—the abilities to verify that a service channel, logical service and transport connection are alive and operational and to provide logical service status notifications. The capabilities leverage the SCTE 130 Part 2 core:ServiceStatus and core:ServiceCheck message exchanges as defined therein. See [SCTE130-2] for additional information.

The following sections detail this specification's logical service management messages.

### 11.1 ADM Logical Service Discovery

Initial ADM logical service discovery is outside the scope of this specification. SCTE 130 Part 7 may provide details. See [SCTE130-7] for additional information.

With the exception of the ADM and its ListADMServicesRequest message exchange endpoint discovery, the remaining endpoints may be directly provided by both the ADM and ADS (i.e., they do not require separate discovery mechanisms and may be bootstrapped using the messages defined herein). See Sections 11.2 and 11.3 for additional information.

### 11.2 List ADM Placement Services

Any logical service may query an ADM at any time for its offered placement services, capabilities, and message exchange endpoint addresses. The querying entity is not required to be registered prior to making this query and the query may occur at anytime. This message exchange duration defines this service channel lifecycle. Typically, the message exchange occurs before registration and its associated

registration-established service channel establishment. Figure 7 illustrates the list ADM placement services message exchange.

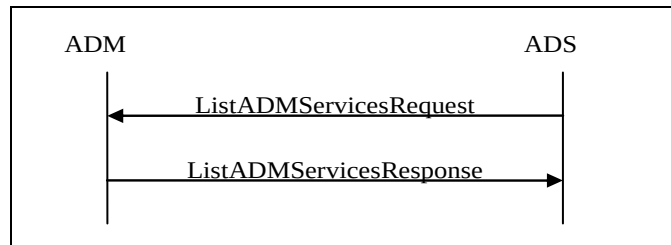


**Figure 7: List ADM Placement Services Message Exchange**

An ADS initiates the message exchange using the ListADMServicesRequest message and the ADM shall respond with a ListADMServicesResponse message. The ADM response includes the following:

- o The ADM offered placement service list
- o The ADM capabilities
- o The ADM message exchange endpoint list

How an ADM determines its offered placement service list and capabilities is outside the scope of this specification.

The ADM message exchange endpoint list may supply the ADS with ADM endpoints for individual message processing entry. Typically, the list is populated with the endpoint set necessary for bootstrapping ADS to ADM communications. With the exception of the discovery of the ListADMServicesRequest endpoint, the remaining ADM/ADS message exchange endpoints may be provided using a combination of the ListADMServicesResponse message and the registration message exchange (i.e., ADSRegistrationRequest/ADSRegistrationResponse messages).

The list ADM offered placement services message schemas are described in the following sections.

#### 11.2.1 ListADMServicesRequest Message Schema

Figure 8 illustrates the list ADM placement services request message schema.

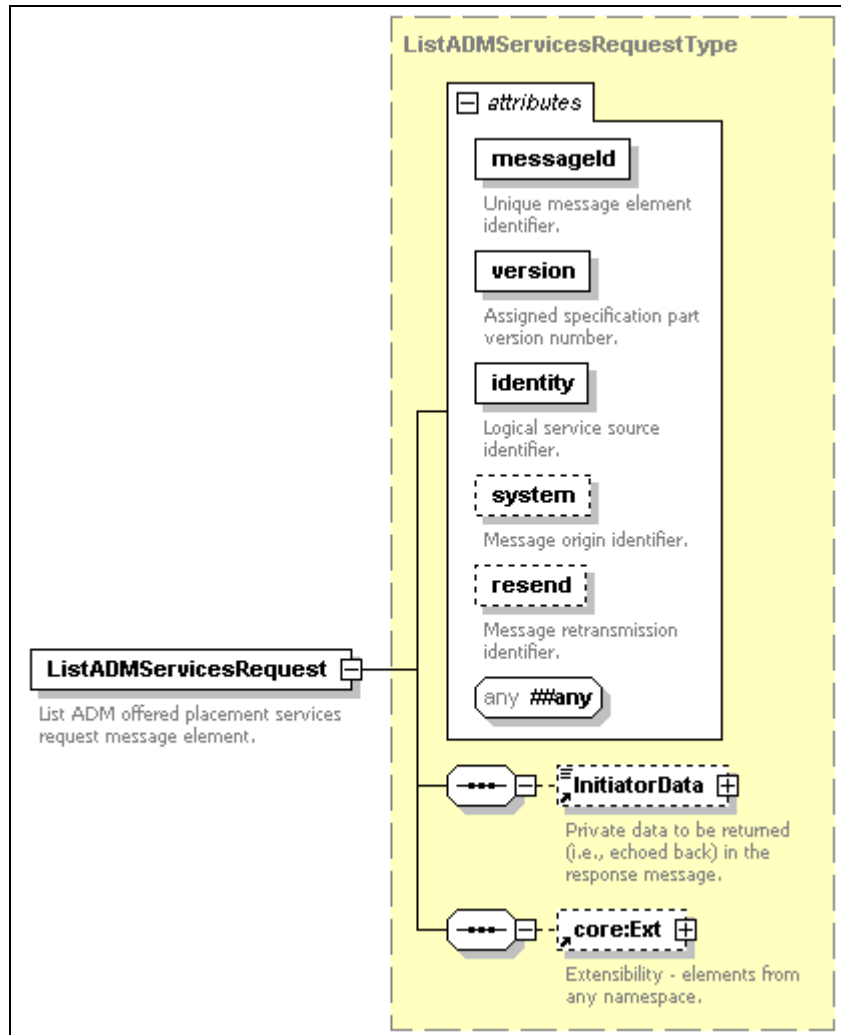


**Figure 8: ListADMServicesRequest Message Schema**

#### 11.2.1.1 Semantic Definitions for the ListADMServicesRequest Message

**@messageId [Required, core:messageIdAttrType]**—The message identifier. See [SCTE130-2] for additional information.

**@version [Required, core:versionAttrType]**—The ADM message interface version. See Section 9.1 for additional information.

**@identity [Required, core:identityAttrType]**—The origin logical service identifier. See [SCTE130-2] for additional information.

**@system [Optional, core:systemAttrType]**—The message origin identifier. See [SCTE130-2] for additional information.

**@resend [Optional, core:resendAttrType]**—The message is a retransmit of a previous ListADMServicesRequest message. The

attribute's value is the original message's @messageId value. See [SCTE130-2] for additional information.

**@##any [Optional]**—Additional attributes from any namespace.

**core:InitiatorData [Optional]**—The core:InitiatorData element contains implementation specific private data which shall be returned in the ListADMServicesResponse message. See [SCTE130-2] for additional information.

**core:Ext [Optional]**—A container holding additional attributes and elements from any namespace. See [SCTE130-2] for additional information.

The ListADMServicesRequest element's value may be empty.

#### 11.2.2 ListADMServicesResponse Message Schema

Figure 9 illustrates the list ADM placement services response message schema describing the placement services offered by the ADM.

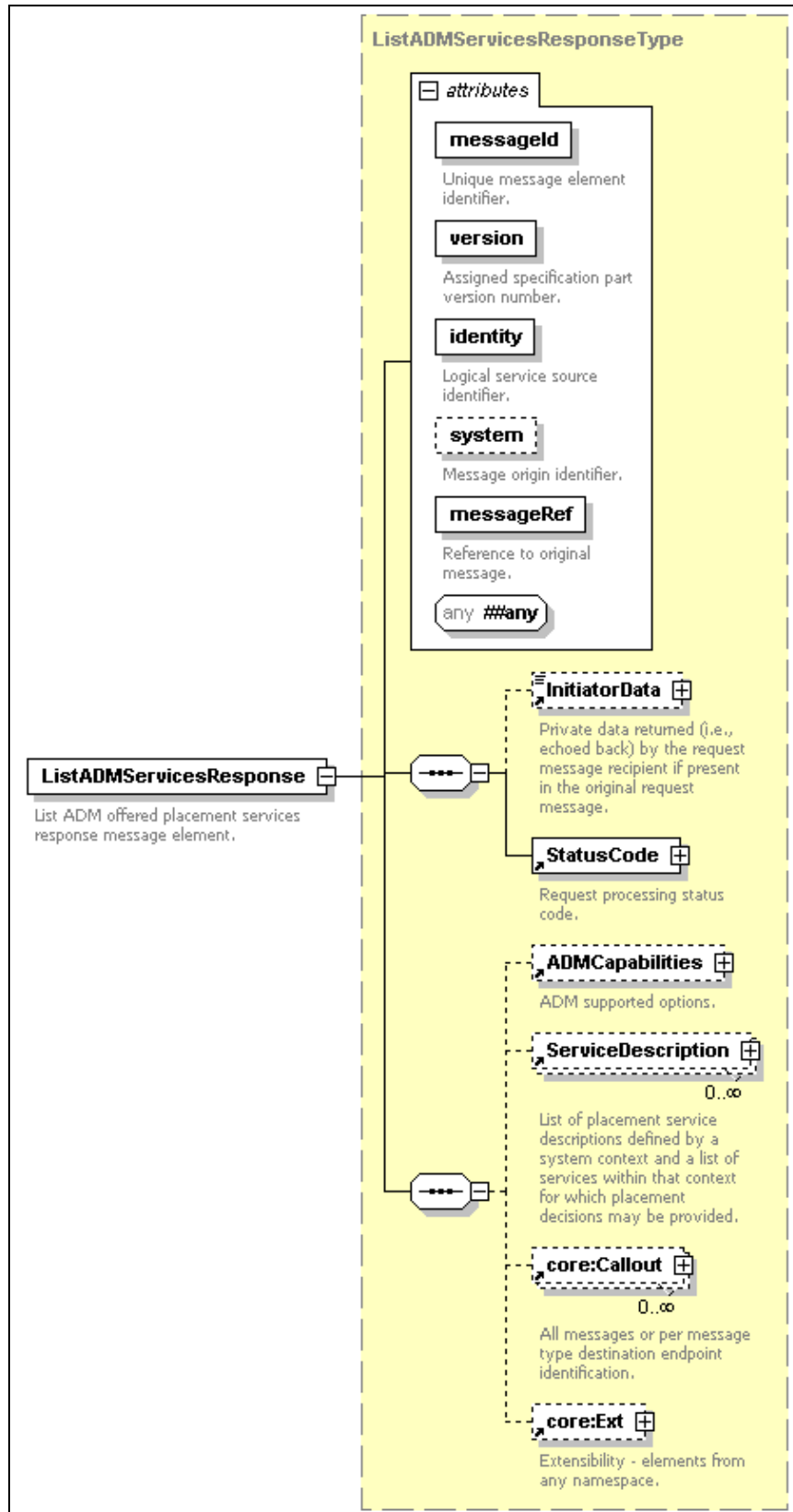


**Figure 9: ListADMServicesResponse Message Schema**

#### 11.2.2.1 Semantic Definitions for the ListADMServicesResponse Message

**@messageId [Required, core:messageIdAttrType]**—The message identifier. See [SCTE130-2] for additional information.

**@version [Required, core:versionAttrType]**—The ADM message interface version. See Section 9.1 for additional information.

**@identity [Required, core:identityAttrType]**—The origin logical service identifier. See [SCTE130-2] for additional information.

**@system [Optional, core:systemAttrType]**—The message origin identifier. See [SCTE130-2] for additional information.

**@messageRef [Required, core:messageRefAttrType]**—A reference to the paired ListADMServicesRequest message element initiating this message exchange. The value shall be the ListADMServicesRequest message's @messageId attribute value. See [SCTE130-2] for additional information.

**@##any [Optional]**—Additional attributes from any namespace.

**core:InitiatorData [Optional]**—The core:InitiatorData element shall be an exact copy of the ListADMServicesRequest message's core:InitiatorData element and shall only be present if found in the paired request message. See [SCTE130-2] for additional information.

**core:StatusCode [Required]**—An applicable status code specific to the ListADMServicesRequest message processing. See [SCTE130-2] and Appendix A for additional information.

**ADMCapabilities [Optional]**—ADM supported options and limitations. Element omission shall indicate the ADM is using the element's defined default values. See Section 14.1 for additional information.

**ServiceDescription [Optional]**—Zero or more ServiceDescription elements where each ServiceDescription element uniquely describes a collection of ADM offered placement services. See Section 14.42 for additional information. If the core:StatusCode element does not contain a success value, the ServiceDescription elements may be omitted. If an ADM is offline, then no elements may be present. The element sequence order shall not convey information.

**core:Callout [Optional]**—Zero or more core:Callout elements specifying the ADM message exchange endpoint(s). See [SCTE130-2] for additional information. Zero core:Callout elements may be returned

for either an error condition or if the ADM endpoint discovery is occurring via a different mechanism.

A single message exchange endpoint may be defined to handle all ADM destined messaging identified in Table 3. If a single endpoint is handling all messaging, there should be only one core:Callout element present in the ListADMServicesResponse message and the core:Callout element's @message attribute shall not be used. This core:Callout element is referred to as the default endpoint.

If independent endpoints are desired, the core:Callout element's @message attribute shall be used and each core:Callout element shall contain a value from Table 3. The core:Callout element's @message attribute's value shall appear exactly as shown in Table 3.

| Value                      | Description                                                                                                                            |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| ServiceStatusNotification  | Destination for ServiceStatusNotification messages.                                                                                    |
| ADSRegistrationRequest     | Destination for ADSRegistrationRequest messages.                                                                                       |
| ADSDeregisterRequest       | Destination for ADSDeregisterRequest messages.                                                                                         |
| ListADSRegistrationRequest | Destination for ListADSRegistrationRequest messages.                                                                                   |
| ...                        | User defined message endpoints which are outside of this specification's scope. The string shall be prefixed with the text "private:". |

**Table 3: ListADMServicesResponse/core:Callout/@Message Attribute Values**

If independent message exchange endpoints are desired for only a subset of endpoints, the default endpoint may be used in conjunction with one or more additional core:Callout elements containing values from Table 3. All message endpoints listed in Table 3 that are not specifically referenced by an @message attribute shall be available through the default endpoint (assuming one is supplied). This behavior allows an ADM to provide message exchange endpoints for one or more core:Callout endpoints while utilizing a single, general purpose endpoint for all other messaging.

If no default endpoint is supplied and only a subset of the Table 3 endpoints are provided in the ListADMServicesResponse message, the unlisted endpoints shall be discovered by a different, unspecified mechanism which is outside the scope of this specification.

Within the core:Callout element, the ADM may provide one or more core:Address elements. The processing rules for these elements are not specified here and are outside the scope of this specification.

Each core:Address element contained within the core:Callout element shall support the core:ServiceCheck message exchange as per [SCTE130-2]. When a Callout element contains more than one Address element, at least one Address element specified reception endpoint shall successfully respond to the ServiceCheckRequest message as required by [SCTE130-2].

**core:Ext [Optional]**—A container holding additional attributes and elements from any namespace. See [SCTE130-2] for additional information.

### 11.2.3 List ADM Placement Services Examples

Example 1 illustrates a successful list ADM placement services request and response (Example 2) message exchange for an ADM offering a single entry representing “all” services (thus, a generic service description element). Note: The string “All ADM Offered Services” is an implementation choice specific to this example. This specification’s usage of this string in conjunction with the concept of all placement services is purely coincidental and it shall not be considered normative when representing said concept.

```
<ListADMServicesRequest messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A0"
version="1.3" identity="ADSLogicalService_1170FEF4-C19B-450E-B624-
421B23F525F5" system="ads"/>
```

#### Example 1

Example 2 declares the ADM capabilities and indicates the ADM is using a default endpoint for all message processing. This behavior is indicated by the presence of a single core:Callout element and the core:Callout element omitting the @message attribute. It also declares support for PODM namespace version 1.2.

```

<ListADMServicesResponse messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A1"
version="1.3" identity="ADMLogicalService_1170FEF4-C19B-450E-B624-
421B23F525F4" system="adm" messageRef="29D61093-6E81-4A5B-A1F6-
8544AA7F29A0">
  <core:StatusCode class="0"/>
  <ADMCapabilities placementStatusOnlyRegistration="false">
    < NamespaceVersion
      namespace="http://www.scte.org/schemas/130-3/2008a/adm/podm"
      version="1.2"/>
  </ADMCapabilities>
  <ServiceDescription>
    <SystemContext/>
    <Service id="All ADM Offered Services"/>
  </ServiceDescription>
  <core:Callout>
    <core:Address
type="HTTP">http://173.35.23.33:80/SCTE130MessageProcessor/default</core:Address>
    </core:Callout>
  </ListADMServicesResponse>

```

## Example 2

Example 3 illustrates a successful response message, assuming the Example 1 request message, for an ADM offering placement services for a service group identified as “Den”. The ADM supplies a default endpoint used for all message exchanges except the ADSRegistrationRequest and the ADSDeregisterRequest message exchanges for which it is supplying unique endpoints. It also declares support for PODM namespace version 1.1.

```

<ListADMServicesResponse messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A1"
version="1.3" identity="ADMLogicalService_1170FEF4-C19B-450E-B624-
421B23F525F4" system="adm" messageRef="29D61093-6E81-4A5B-A1F6-
8544AA7F29A0">
  <core:StatusCode class="0"/>
  <ADMCapabilities placementStatusOnlyRegistration="false">
    < NamespaceVersion
      namespace="http://www.scte.org/schemas/130-3/2008a/adm/podm"
      version="1.1"/>
  </ADMCapabilities >
  <ServiceDescription>
    <SystemContext>
      <ServiceGroup>Den</ServiceGroup>
    </SystemContext>
    <Service id="ServiceDen"/>
  </ServiceDescription>
  <core:Callout>
    <core:Address
type="HTTP">http://173.35.23.33:80/SCTE130MessageProcessor/default</core:Address>
  </core:Callout>
    <core:Callout message="ADSRegistrationRequest">
      <core:Address
type="HTTP">http://173.35.23.33:80/SCTE130MessageProcessor/ADSRegistrationReque
st</core:Address>
    </core:Callout>
      <core:Callout message="ADSDeregisterRequest">
        <core:Address
type="HTTP">http://173.35.23.33:80/SCTE130MessageProcessor/ADSDeregisterRequest
</core:Address>
      </core:Callout>
    </core:Callout>
  </ListADMServicesResponse>

```

### Example 3

Example 4 is a success response message, assuming the Example 1 request message, for an ADM offering on-demand placement services for the provider's moviego.com and movies\_r\_us.com. For moviego.com, the ADM is handling pre-roll and post-roll placement opportunities using an "interactive" placement decision policy. For movies\_r\_us.com, the ADM is only handling local pre-roll placement opportunities for the specific product type using a "default" placement decision policy. The ADM is using a single, default endpoint for all message processing. It also declares support for PODM namespace version 1.1 and 1.2. A subsequent ADSRegistrationMessage can choose the PODM namespace to utilize.

```

<ListADMServicesResponse messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A1"
version="1.3" identity="ADMLogicalService_1170FEF4-C19B-450E-B624-
421B23F525F4" system="adm" messageRef="29D61093-6E81-4A5B-A1F6-
8544AA7F29A0">
  <core:StatusCode class="0"/>
  <ADMCapabilities placementStatusOnlyRegistration="false">
    < NamespaceVersion
      namespace="http://www.scte.org/schemas/130-3/2008a/adm/podm"
      version="1.1"/>
    < NamespaceVersion
      namespace="http://www.scte.org/schemas/130-3/2008a/adm/podm"
      version="1.2"/>
  </ADMCapabilities >
  <ServiceDescription>
    <SystemContext/>
    <Service id="Service1" opportunityType="preRoll" decisionPolicy="interactive">
      <ContentProvider providerID="moviego.com">
        <core:ContentDataModel type="CLADI_2.0">URI</core:ContentDataModel>
      </ContentProvider>
    </Service>
    <Service id="Service2" opportunityType="postRoll" decisionPolicy="interactive">
      <ContentProvider providerID="moviego.com">
        <core:ContentDataModel type="CLADI_2.0">URI</core:ContentDataModel>
      </ContentProvider>
    </Service>
    <Service id="Service3" opportunityType="preRoll" decisionPolicy="default">
      <ContentProvider providerID="movies_r_us.com">
        <core:ContentDataModel type="CLADI_2.0">URI</core:ContentDataModel>
      </ContentProvider>
      <ProductType>FOD</ProductType>
      <Scope>Local</Scope>
    </Service>
  </ServiceDescription>
  <core:Callout>
    <core:Address>www.adshark.com/allMessages</core:Address>
  </core:Callout>
</ListADMServicesResponse>

```

#### Example 4

Example 5 is a successful response message, assuming the Example 1 request message, for an ADM offering traditional linear replacement services for two different zones of a specific network feed. The decision policy is “preload” for both listed services and the ADM is using unique entry points for every service channel message endpoint. It also declares support for PODM namespace version 1.2. It also declares support for a non SCTE 130 namespace from

www.foo.com. This declaration informs the ADS that it can use private extensions supported by version 1.0 of the specified www.foo.com namespace. This declaration informs the ADS that it can use private extensions supported by the specified www.bar.com namespace.

```

<ListADMServicesResponse messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A1"
version="1.3" identity="ADMLogicalService_1170FEF4-C19B-450E-B624-
421B23F525F4" system="adm" messageRef="29D61093-6E81-4A5B-A1F6-
8544AA7F29A0">
  <core:StatusCode class="0"/>
  <ADMCapabilities placementStatusOnlyRegistration="true">
    < NamespaceVersion
      namespace="http://www.scte.org/schemas/130-3/2008a/adm/podm"
      version="1.2"/>
    < NamespaceVersion
      namespace="http://www.foo.com/schemas/namespace/foo"
      version="1.0"/>
    < NamespaceVersion
      namespace="http://www.bar.com/schemas/namespace/bar"/>
  </ADMCapabilities>
  <ServiceDescription>
    <SystemContext>
      <Network>ABC</Network>
      <Zone>Z3</Zone>
    </SystemContext>
    <Service id="ABC Network Zone3" decisionPolicy="preload"/>
  </ServiceDescription>
  <ServiceDescription>
    <SystemContext>
      <Network>ABC</Network>
      <Zone>Z4</Zone>
    </SystemContext>
    <Service id="ABC Network Zone4" decisionPolicy="preload"/>
  </ServiceDescription>
  <core:Callout message="ServiceStatusNotification">
    <core:Address type="HTTP">http://175.33.53.33:7381/scte130/ssn</core:Address>
  </core:Callout>
  <core:Callout message="ADSRegistrationRequest">
    <core:Address type="HTTP">http://175.33.53.33:7382/scte130/arr</core:Address>
  </core:Callout>
  <core:Callout message="ADSDeregisterRequest">
    <core:Address type="HTTP">http://175.33.53.33:7383/scte130/adr</core:Address>
  </core:Callout>
  <core:Callout message="ListADSRegistrationRequest">
    <core:Address type="HTTP">http://175.33.53.33:7384/scte130/larr</core:Address>
  </core:Callout>
</ListADMServicesResponse>

```

### Example 5

Example 6 illustrates a failure response message, assuming the Example 1 request message, for an ADM not currently offering any services.

```
<ListADMServicesResponse messageId="29D61093-6E81-4A5B-A1F6-8544AA7F29A1"
version="1.3" identity="ADMLogicalService" system="adm" messageRef="29D61093-
6E81-4A5B-A1F6-8544AA7F29A0">
  <core:StatusCode class="1" detail="11">
    <core:Note>ResourceNotFound. No provisioned ADM services.</core:Note>
  </core:StatusCode>
</ListADMServicesResponse>
```

### Example 6

## 11.3 Registration

A registration-established service channel, as defined in Section 10.0, is created between two logical services using the registration message exchange. Typically, this service channel is used for placement operations messaging. An ADS service contacts an ADM by sending an ADSRegistrationRequest message and the ADM shall respond with an ADSRegistrationResponse message. Figure 10 illustrates this message exchange.

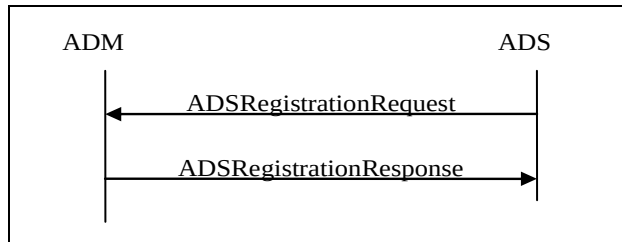


**Figure 10: Registration Message Exchange**

During the registration request message processing, the ADM may optionally verify each ADS supplied endpoint via a SCTE 130 Part 2 core:ServiceCheck message exchange before returning an ADSRegistrationResponse message. (See [SCTE130-2] for additional information regarding the core:ServiceCheck message exchange.) The ADS shall be prepared to receive the core:ServiceCheckRequest message on the registration supplied endpoints before receiving a response else the ADM may fail the registration request (i.e., the ADM may test each core:Address element supplied in each core:Callout element). When a core:Callout element contains more than one core:Address element, at least one core:Address element specified reception endpoint shall successfully respond to the core:ServiceCheckRequest message. The ADM may reject the registration request message if all core:Address elements of a core:Callout element fail to successfully respond. An ADM shall not reject the registration message if only a subset of each core:Callout element's core:Address elements successfully respond to the core:ServiceCheckRequest message.

The ADS may provide unique service channel endpoint identifiers for the placement operation message exchanges including specific destinations for PlacementRequest messages and PlacementStatusNotification messages. In the ADM response message, the ADM may provide the PlacementUpdateNotification message callout.

ADM implementations may choose to limit the number of supported service channel connections. An ADM shall not be required to support independently registered callbacks for each offered placement service identified by the ListADMServicesResponse message's ServiceDescription elements. ADM implementations are encouraged to support at least as many service channel connections as the count of offered placement services itemized in the ListADMServicesResponse message. An ADM implementation shall not be required to accept an ADS registration solely for status reporting. An ADM may optionally offer this feature by indicating support within the ADMCapabilities element and allowing an ADSRegistrationRequest message containing a core:Callout element which specifies only a PlacementStatusNotification endpoint.

ADM registration conflict determination and resolution are outside the scope of this specification.

During registration, the ADS specifies the placement services for which it is providing placement decisions and it declares the endpoint information for where associated PlacementRequest and PlacementStatusNotification messages are to be sent. These endpoints may be the same value or they may be unique. The endpoints may be different addresses on the same system or they may be endpoints on physically separated systems as illustrated in Figure 11. This figure is one possible example implementation with many other abstractions possible and not represented by this single illustration.

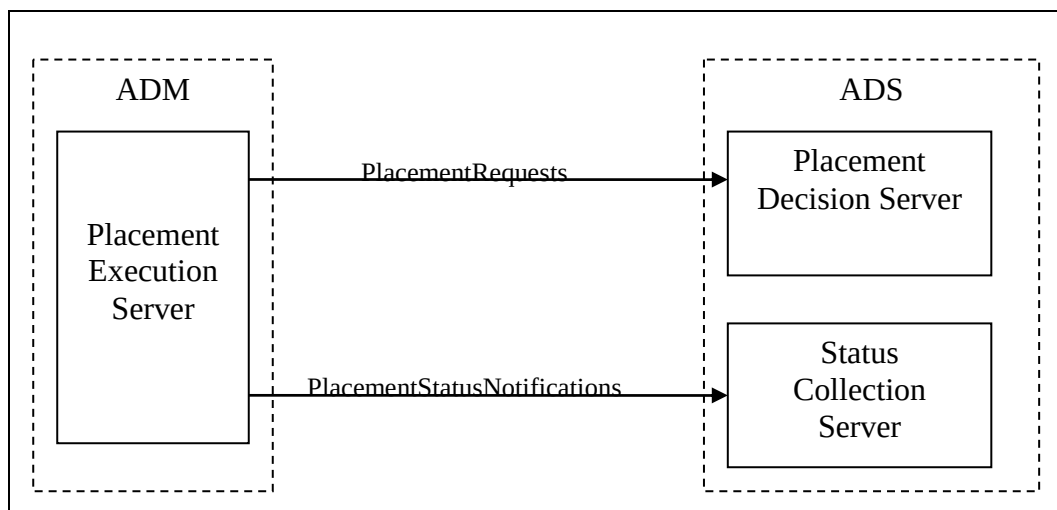


**Figure 11: ADS Registering Independent Endpoints**

The ADSRegistrationRequest message shall always be identified using the original ADSRegistrationRequest message's @messageId attribute value which in a retransmitted registration message shall be the @resend attribute's value. This original message's @messageId attribute value is subsequently used for registration listing and deregistration message exchange per SCTE 130 Part 2. See [SCTE130-2] for additional information.

The ADM registration message schemas are described in the following sections.

#### 11.3.1 ADSRegistrationRequest Message Schema

Figure 12 illustrates the ADSRegistrationRequest message schema.

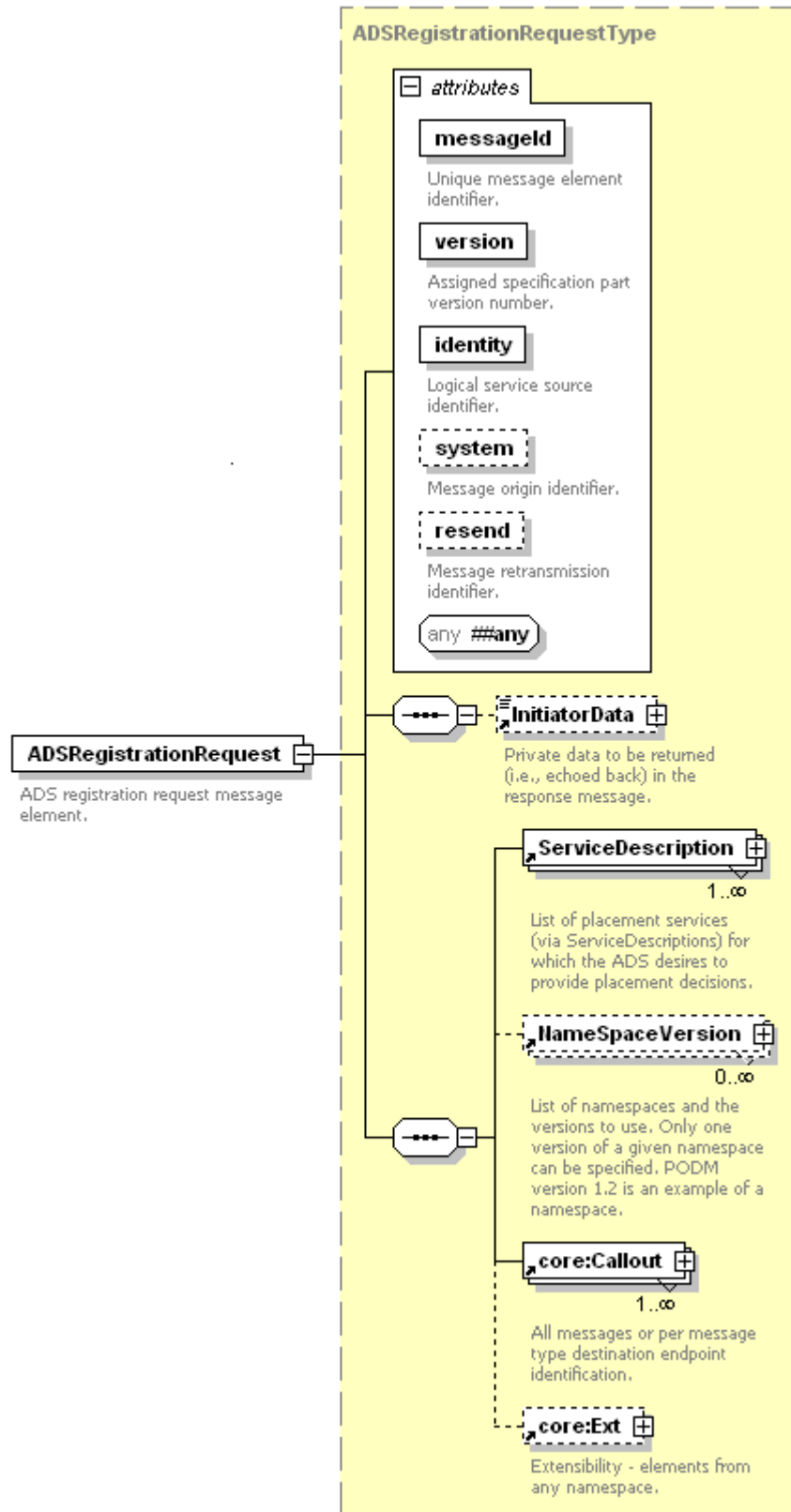


Figure 12: ADSRegistrationRequest Message Schema

#### 11.3.1.1 Semantic Definitions for the ADSRegistrationRequest Message

**@messageId [Required, core:messageIdAttrType]**—The message identifier. See [SCTE130-2] for additional information.

**@version [Required, core:versionAttrType]**—The ADM message interface version. See Section 9.1 for additional information.

**@identity [Required, core:identityAttrType]**—The origin logical service identifier. See [SCTE130-2] for additional information. An ADS shall use this attribute to identify all their placement services and their registration-established service channels for registration listing and deregistration purposes.

**@system [Optional, core:systemAttrType]**—The message origin identifier. See [SCTE130-2] for additional information.

**@resend [Optional, core:resendAttrType]**—The message is a retransmit of a previous ADSRegistrationRequest message. The attribute's value is the original message's @messageId value. See [SCTE130-2] for additional information.

**@##any [Optional]**—Additional attributes from any namespace.

**core:InitiatorData [Optional]**—The core:InitiatorData element contains implementation specific private data which shall be returned in the ADSRegistrationResponse message. See [SCTE130-2] for additional information.

**ServiceDescription [Required]**—One or more placement service descriptions for which the registering entity desires interaction. Generally, the expected registration-established placement service interaction is to supply placement decisions and placement status message exchanges. As an alternative, a placement status only registered service may optionally be supported by an ADM. Typically, each ServiceDescription element should exactly match a ServiceDescription element as provided in the ListADMServicesResponse message described in Section 11.2.2.

An ADS may restrict a placement service's scope by adding elements to a ListADMServicesResponse message's ServiceDescription element's children. For example, if an ADM returns a ServiceDescription element contain the Network element with the value "ESPN," the ADS may register a ServiceDescription element containing a Network element with the value "ESPN" and a Scope element with the value "Local".

An ADS may also expand a placement service's scope by removing elements from a ListADMServicesResponse message's ServiceDescription element's children. For example, if an ADM returns a ServiceDescription element containing a Network element with the value "ESPN and a Service/@opportunityBinding value of "preRoll," the ADS may register a ServiceDescription element containing only a Network element having the value "ESPN."

An ADM may optionally accept ADSRegistrationRequest messages which are not exact matches to the ServiceDescription elements returned in the ListADMServicesResponse message. The ServiceDescription element sequence shall be processed in document order.

**NameSpaceVersion [Optional]** – One or more NameSpaceVersion elements specifying the namespaces to use on the exchange end point(s). The version attribute is optional but shall be supplied if returned for a given namespace in the ListADMServicesResponse. The list of supported namespaces is returned in the ListADMServicesResponse (see Section 11.2). See Section 14.20 for additional information.

An implementation may support registration for multiple versions of a given namespace. The specific end point behavior if registering for multiple versions of a given namespace is out of scope of this standard.

**core:Callout [Required]**—One or more core:Callout elements specifying the ADS message exchange endpoint(s). See [SCTE130-2] for additional information. A single message exchange endpoint may be defined to handle all ADS destined messaging. If a single message exchange endpoint is handling all messaging (i.e., a default endpoint), there should be only one core:Callout element present and the core:Callout element's @message attribute shall not be used.

If independent endpoints are desired, the core:Callout element's @message attribute shall be used and each core:Callout element shall contain a value from Table 4. The core:Callout element's @message attribute's value shall appear exactly as shown in Table 4.

| Value                         | Description                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| ServiceStatusNotification     | Destination for ServiceStatusNotification messages.                                                                                    |
| PlacementRequest              | Destination for PlacementRequest messages.                                                                                             |
| PlacementStatusNotification   | Destination for PlacementStatusNotification messages.                                                                                  |
| ADSDeregistrationNotification | Destination for ADSDeregistrationNotification messages.                                                                                |
| ...                           | User defined message endpoints which are outside of this specification's scope. The string shall be prefixed with the text "private:". |

**Table 4: ADSRegistrationRequest/core:Callout/@Message Attribute Values**

If independent endpoints are desired for a subset of message exchange endpoints, the default endpoint may be used with one or more additional core:Callout elements containing values from Table 4. All messages that are not specifically referenced by an @message attribute shall be available through the default endpoint.

If no default endpoint is supplied and only a subset of the Table 4 endpoints are provided in the ADSRegistrationRequest message, the unlisted endpoints shall be discovered by a different, unspecified mechanism which is outside the scope of this specification.

Within the core:Callout element, the ADS may provide one or more core:Address elements. The processing rules for these elements are not specified here and are outside the scope of this specification.

Each core:Address element contained within the core:Callout element shall support the core:ServiceCheck message exchange as per [SCTE130-2]. When a Callout element contains more than one Address element, at least one Address element specified reception endpoint shall successfully respond to the ServiceCheckRequest message as required by [SCTE130-2] and an ADM shall not reject the registration message if only a subset of the Address elements successfully respond to the ServiceCheckRequest message.

**core:Ext [Optional]**—A container holding additional attributes and elements from any namespace. See [SCTE130-2] for additional information.

### 11.3.2 ADSRegistrationResponse Message Schema

Figure 13 illustrates the ADSRegistrationResponse message schema.

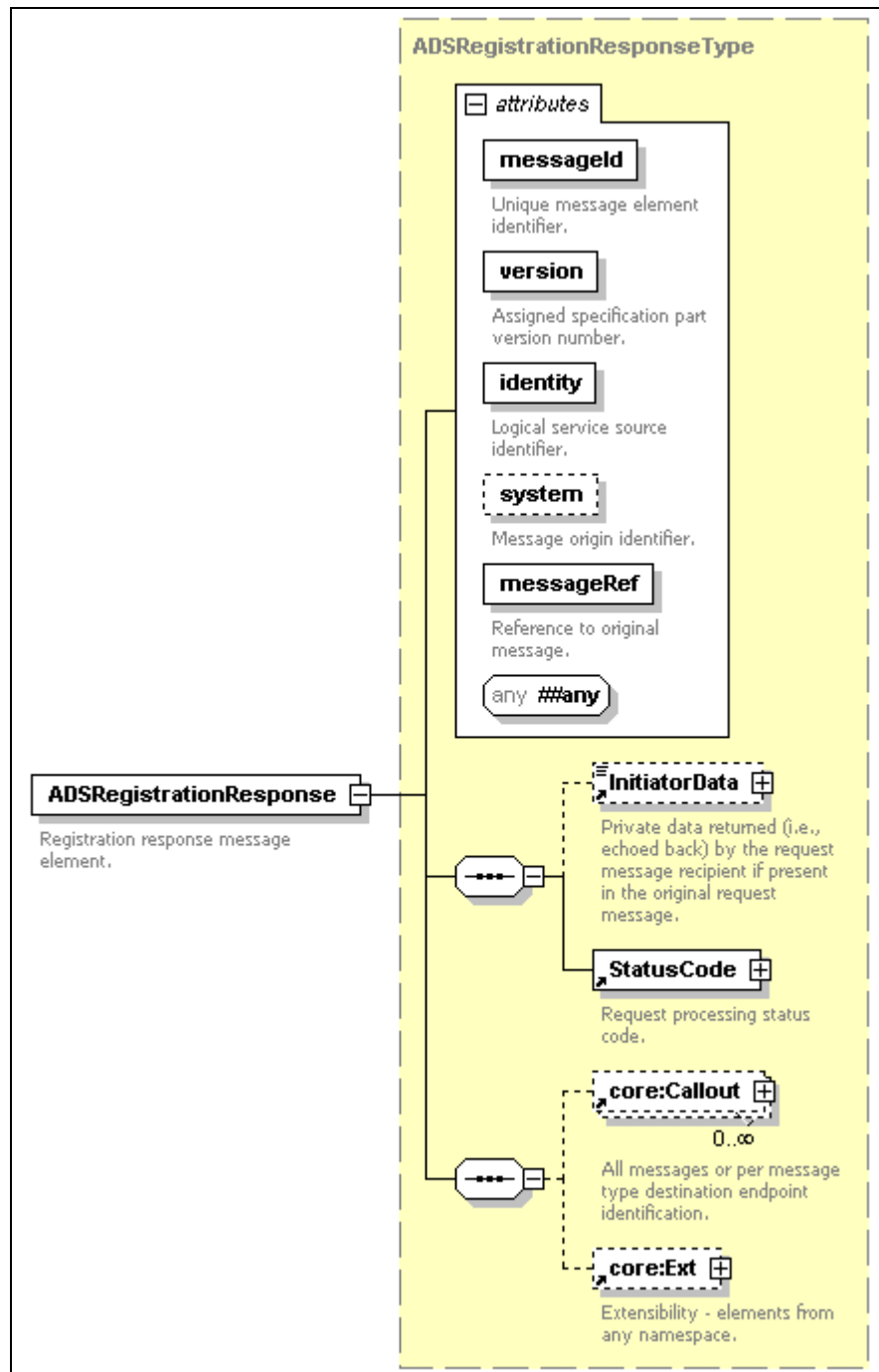


**Figure 13: ADSRegistrationResponse Message Schema**

#### 11.3.2.1 Semantic Definitions for the ADSRegistrationResponse Message

**@messageId [Required, core:messageIdAttrType]**—The message identifier. See [SCTE130-2] for additional information.

**@version [Required, core:versionAttrType]**—The ADM message interface version. See Section 9.1 for additional information.

**@identity [Required, core:identityAttrType]**—The origin logical service identifier. See [SCTE130-2] for additional information.

**@system [Optional, core:systemAttrType]**—The message origin identifier. See [SCTE130-2] for additional information.

**@messageRef [Required, core:messageRefAttrType]**—A reference to the paired ADSRegistrationRequest message element initiating this message exchange. The value shall be the ADSRegistrationRequest message's @messageId attribute value. See [SCTE130-2] for additional information.

**@##any [Optional]**—Additional attributes from any namespace.

**core:InitiatorData [Optional]**—The core:InitiatorData element shall be an exact copy of the ADSRegistrationRequest message's core:InitiatorData element and shall only be present if found in the paired request message. See [SCTE130-2] for additional information.

**core:StatusCode [Required]**—An applicable status code specific to the ADSRegistrationRequest message processing. See [SCTE130-2] and Appendix A for additional information.

If the core:StatusCode element indicates an error, no registration for any placement service (i.e., for any ServiceDescription element) shall be deemed to have occurred (i.e., no transaction).

**core:Callout [Optional]**—Zero or more core:Callout elements specifying the ADM message exchange endpoint(s). See [SCTE130-2] for additional information. Zero core:Callout elements may be returned for either an error condition or if the ADM message exchange endpoint discovery is occurring via a different mechanism.

A single message exchange endpoint may be defined to handle all ADM destined messaging identified in Table 5. If a single endpoint is handling all messaging, there should be only one core:Callout element present in the ADSRegistrationResponse message and the core:Callout element's @message attribute shall not be used. If an ADM desires to use the same default endpoint as the ListADMServicesResponse message, then the default endpoint shall be identically repeated in this message and consequently, it applies additionally to all endpoint destination listed in Table 5. The ADM may optionally use a different default endpoint for the message exchange endpoints identified in Table 5. In this case, the default endpoints are mutually exclusive as the message exchange

endpoint list is disjoint between the ListADMServicesResponse and ADSRegistrationResponse messages.

If independent endpoints are desired, the core:Callout element's @message attribute shall be used in each Callout element and it shall contain a value from Table 5. The core:Callout element's @message attribute's value shall appear exactly as shown in Table 5.

| Value                       | Description                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| PlacementUpdateNotification | Destination for PlacementUpdateNotification messages.                                                                            |
| ...                         | User defined message endpoint outside of the scope of this specification. The string shall be prefixed with the text "private:". |

**Table 5: ADSRegistrationResponse/core:Callout/@Message Attribute Values**

If independent message exchange endpoints are desired for only a subset of Table 5 endpoints, the default message exchange endpoint may be used in conjunction with one or more additional core:Callout elements containing values from Table 5. All message endpoints listed in Table 5 that are not specifically referenced by an @message attribute shall be available through the default endpoint (assuming one is supplied).

If no default endpoint is supplied and only a subset of the Table 5 endpoints are provided in the ADSRegistrationResponse message, the unlisted endpoints shall be discovered by a different, unspecified mechanism which is outside the scope of this specification.

Within the core:Callout element, the ADM may provide one or more core:Address elements. The processing rules for these elements are not specified here and are outside the scope of this specification.

**core:Ext [Optional]**—A container holding additional attributes and elements from any namespace. See [SCTE130-2] for additional information.

### 11.3.3 Registration Examples

Example 7 illustrates an ADSRegistrationRequest message and Example 8 illustrates a successful ADSRegistrationResponse message. Example 7 indicates the ADS is handling all placement decisions. The ADSRegistrationRequest message's single core:Callout element omits the @message attribute indicating all messages are to utilize the same endpoint (i.e., the default endpoint). The ADS provides two Address elements where the first address may be interpreted as the primary message exchange endpoint and the second endpoint may be