Errata Notice on Schema Locations

(September 30, 2020)

This standard makes use of namespace locations with a form of http://www.scte.org/schemas/xyz/*, where “xyz” is the location of the specific schema being referenced. Due to limitations on the current SCTE•ISBE website, those specific locations are not available.

To find such schemas:

1. Go to the standards download page at https://www.scte.org/download-scteisbe-standards/
2. Search for the standard number (xyz in the above example)
3. Expand the listing by clicking the plus (+) button to the left of the standard number

The expanded list will show the desired schema.

This notice will be removed once the exact namespace values are functional.

SCTE · ISBE

STANDARDS

Digital Video Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 130-5 2020

Digital Program Insertion- Advertising Systems Interfaces
Part 5- Placement Opportunity Information Service

NOTICE

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1. Introduction

1.1. Executive Summary

The Placement Opportunity Information Service (POIS) provides an interface to a repository of descriptions of opportunities for placement of content within an audio/video stream. Frequently these specify opportunities for insertion of advertising content within entertainment programming. The POIS may also contain attributes and constraints for each placement opportunity, platform compliance, rights, and policies of the content in which the placement opportunity exists. These placement opportunities are content specific; therefore, attributes and constraints may vary by network, geographic region, or other content distribution dimension.

The POIS provides Placement Opportunity metadata through query and notification services to service endpoints. What a Placement Opportunity is and how it influences an advertising service is discussed in SCTE 130 Part 3. See [SCTE 130-3] for additional information. Using the interface defined herein, service endpoints may retrieve detailed information about placement opportunities known to the queried POIS.

Figure 1 provides one example of a POIS in an SCTE 130 logical environment.

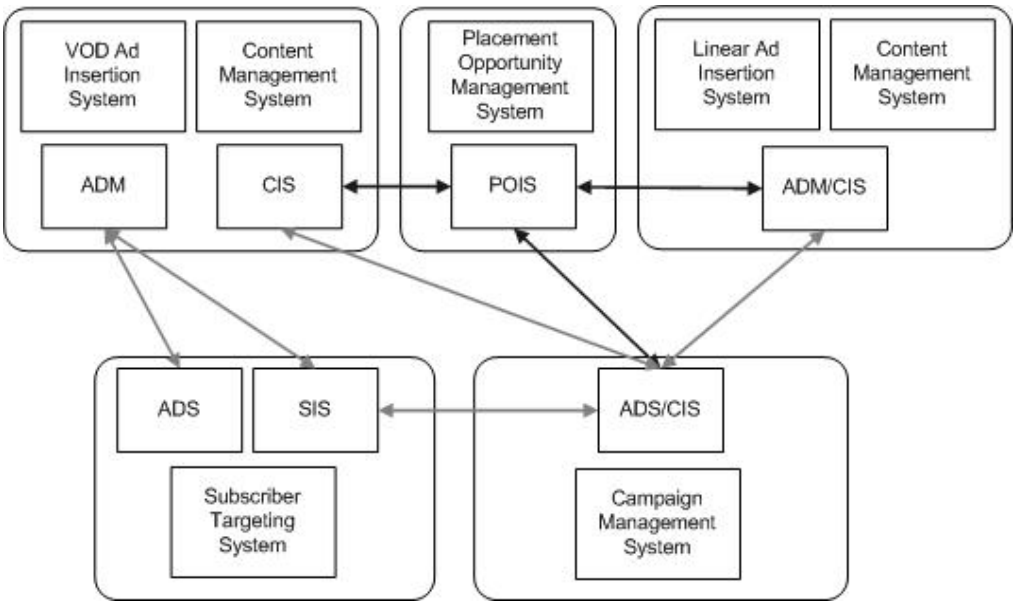

Figure 1 - Example SCTE 130 System Landscape with POIS

As illustrated in Figure 1, a POIS answers queries concerning the Placement Opportunities it is aware of and issues notification messages for registered queries when Placement Opportunity changes are detected. How the Placement Opportunity information is obtained by a POIS is outside the scope of this document. The anticipated number of content streams is also outside the scope of this document. The existence of a POIS implementation as a logical service coexisting with other services or systems does not imply the referenced content is available.

1.2. Scope

This document defines the messaging protocol for the POIS consistent with other parts of the SCTE 130 standard. A POIS, or a repository to which it has access, stores and maintains descriptions of content

placement opportunities (typically for advertisements) and the interface supports query and notification operations for those opportunities.

A POIS additionally contains features, characteristics and constraints for each placement opportunity, appropriate for the platform, rights, and policies including those of the content in which it exists. These placement opportunities may or may not be content specific and the traits and constraints may vary by network, geographic region, or other content distribution dimension.

This specification defines a standardized interface for accessing the placement opportunity information known to a POIS.

1.3. Benefits

The SCTE 130 service-oriented architecture provides a framework for cooperative systems to manage all aspects of the delivery of advanced advertising content. Within that framework, there is an obvious need to identify and manage the locations within entertainment content where advertising insertion may take place. In legacy systems, these ad breaks were defined in proprietary systems that relied on considerable manual effort to coordinate among providers and distributors of content. Discrepancies in timing and authority were commonplace and no consistent mechanism existed to resolve these issues. The POIS answers these requirements by providing a standard interface through which content providers can identify placement opportunities and distributors of that content can reliably determine appropriate use of those opportunities.

1.4. Intended Audience

This document is intended to inform the design and implementation of SCTE 130 Placement Opportunity Systems, and cooperative systems that interface with POIS, as part of the advanced advertising infrastructure of Content Providers, Multi-Channel Video Program Distributors, TV Everywhere Providers/Distributors and Video on Demand Providers/Distributors.

1.5. Areas for Further Investigation or to be Added in Future Versions

No further investigation or potential additions have been identified.

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document 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 might not be compatible with the referenced version.

2.1. SCTE References

[SCTE 130-2]	ANSI/SCTE 130-2 2020, Digital Program Insertion: Advertising Systems Interfaces Part 2- Core Data Elements
[SCTE 130-7]	ANSI/SCTE 130-7 2020, Digital Program Insertion - Advertising Systems Interfaces Part 7 - Message Transport
[SCTE 130-8]	SCTE 130-8 2020, Digital Program Insertion: Advertising Systems Interfaces Part 8-General Information Service

2.2. Standards from Other Organizations

[W3C-XSD]	W3C-XSD, XML, Schema Part 1: Structures Second Edition

2.3. Published Materials

No normative references are applicable.

3. Informative References

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

3.1. SCTE References

[SCTE 35]	ANSI/SCTE 35, Digital Program Insertion: Cueing Message for Cable
[SCTE 118-3]	ANSI/SCTE 118-3, Program Specific Ad Insertion Traffic System to Ad Insertion System File Format Specification
[SCTE 130-1]	ANSI/SCTE 130-1, Digital Program Insertion: Advertising Systems Interfaces Part 1-Overview
[SCTE 130-3]	ANSI/SCTE 130-3, Digital Program Insertion: Advertising Systems Interfaces Part 3-Ad Management Interface

3.2. Standards from Other Organizations

No informative references are applicable.

3.3. Published Materials

No informative references are applicable.

4. Compliance Notation

shall	This word or the adjective "***required***" means that the item is an absolute requirement of this document.
shall not	This phrase means that the item is an absolute prohibition of this document.
forbidden	This word means the value specified shall never be used.
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.
deprecated	Use is permissible for legacy purposes only. Deprecated features may be removed from future versions of this document. Implementations should avoid use of deprecated features.

5. Abbreviations and Definitions

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.

5.1. Abbreviations

All [SCTE 130-2], [SCTE 130-7], and [SCTE 130-8] abbreviations are included herein by reference to those documents. See [SCTE 130-2], [SCTE 130-7], and [SCTE 130-8] for additional information. The following abbreviations are used by this specification.

POIS	Placement Opportunity Information Service

5.2. Definitions

All [SCTE 130-2], [SCTE 130-7], and [SCTE 130-8] definitions are included herein by reference to those documents. See [SCTE 130-2], [SCTE 130-7], and [SCTE 130-8] for additional information. This interface is an advertising service of [SCTE 130-8] and makes references accordingly. In the event of a conflict between [SCTE 130-8] and this document, this document's language shall be considered standard.

Provider	In the context of this document, the originator or programmer of entertainment content. The provider determines the content that is available for distribution and the timing and permitted uses of placement opportunities within such content.
Distributor	In the context of this document, the entity managing a network over which entertainment content is delivered to consumers.

6. Notational Conventions

6.1. Normative XML Schema

SCTE 130 Part 5 employs the same notational conventions as [SCTE 130-8]. Refer to [SCTE 130-8] for an explanation of notational conventions.

6.2. Document Conventions

SCTE 130 Part 5 employs the same document conventions as [SCTE 130-8]. Refer to [SCTE 130-8 for an explanation of document conventions. For example, the XML schema illustration is explained there.

7. Processing Conventions

7.1. Unknown/Unrecognized/Unsupported XML Elements and Attributes

See [SCTE 130-2] for information.

8. XML NameSpaces

This specification uses the 'pois' prefix for the interface associated with the specific XML namespace URI that ***shall*** be used by all implementations. Table 1 lists the prefix, the corresponding namespace, and a description of the defining specification used herein.

Table 1 - XML Namespace Declarations

Standard	XML Schema Prefix	XML Schema Elements	Value
2020 (latest)	core (SCTE 130-2)	Schema namespace	http://www.scte.org/schemas/130-2/2008a/core[1]
		Schema version attribute	20200321
		Schema filename	SCTE_130-2_core_20200321.xsd

[1] While this specification has a ratified year of 2020, the XML schema/XSD namespace has a year of 2008a, which is the year the XSD and this specification's syntax was initially ratified. All subsequent changes have been backwards compatible and thus, the namespace has not changed.

	pois (This doc.)	Schema namespace	http://www.scte.org/schemas/130-5/2011/pois[2]
		Schema version attribute	20200612
		Schema filename	SCTE_130-5_pois_20200612.xsd
	gis (SCTE 130-8)	Schema namespace	http://www.scte.org/schemas/130-8/2011/gis[3]
		Schema version attribute	20200325
		Schema filename	SCTE_130-8_gis_20200325.xsd
	wsdl (This doc. Appendix B)	Schema namespace	http://www.scte.org/wsdl/130-5/2011/pois[4]
		Schema version attribute	n/a
		WSDL filename	SCTE_130-5_pois_20200612.wsdl

Unless otherwise stated, all references to XML elements illustrated in this document are from the 'pois' namespace. Elements from other namespaces will be prefixed with the name of the external namespace, e.g. <core:XXXX>.

[2] While this specification has a ratified year of 2020, the XML schema/XSD namespace has a year of 2011, which is the year the XSD and this specification's syntax was initially ratified. All subsequent changes have been backwards compatible and thus, the namespace has not changed.

[3] While this specification has a ratified year of 2020, the XML schema/XSD namespace has a year of 2011, which is the year the XSD and this specification's syntax was initially ratified. All subsequent changes have been backwards compatible and thus, the namespace has not changed.

[4] While this specification has a ratified year of 2020, the WSDL namespace has a year of 2011, which is the year the WSDL and this specification's syntax was initially ratified. All subsequent changes have been backwards compatible and thus, the namespace has not changed.

9. Data Model and Query Support

A POIS *may* support one or more placement opportunity data models as defined in [SCTE 130-3]. One or more of the data models *may* be available for query using the basic query syntax defined in [SCTE 130-8]. See [SCTE 130-8] for additional information.

A POIS *should* include advanced query support for a data model as specified in [SCTE 130-8].

10. POIS Messages

This specification includes a query and a notification model for POIS to endpoint messaging. The model includes associated notification management functions such as registration, deregistration and active registration listing.

The following topics are covered by [SCTE 130-2] and by [SCTE 130-8].

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

This specification considers all aspects defined therein to be normative and applicable herein. See [SCTE 130-2] and [SCTE 130-8] for additional information.

A POIS implementation ***shall*** be built using the General Information Service (GIS) interface defined by [SCTE 130-8]. The POIS message interface ***shall*** include the messages defined by [SCTE 130-2] and [SCTE 130-8].

10.1. @version Attribute

For all SCTE 130 Part 5 messages defined herein (i.e., those messages prefixed with the string "POIS"), the @version attribute ***shall*** be set to the value "1.0" for this document's revision. For messages defined by the core namespace, for example core:ServiceStatus and core:ServiceNotification, their @version attribute ***shall*** contain the value defined by the normatively referenced specification. See [SCTE 130-2] for additional information.

10.2. Request Base Message

All POIS top level ***request*** messages are derived from the request message types defined in [SCTE 130-8] which inherit from the core:Msg_RequestBaseType abstract base message type. See the [SCTE 130-2] document for details on the attributes and elements contained in this base message.

10.2.1. Request Base Message Attributes

All Request Base Message Attributes are consistent with those listed in [SCTE 130-8].

10.2.2. Request Base Message Elements

All Request Base Message Elements are consistent with those listed in [SCTE 130-8].

10.3. Response Base Message

All POIS top level ***response*** messages are derived from the response message types defined in [SCTE 130-8] which inherit from the core:Msg_ResponseBaseType abstract base message type. See the [SCTE 130-2] document for details on the attributes and elements contained in this base message.

10.3.1. Base Response Message Attributes

All Response Base Message Attributes are consistent with those listed in [SCTE 130-8].

10.3.2. Base Response Message Elements

All Response Base Message Elements are consistent with those listed in [SCTE 130-8], except those elements listed below in this section.

10.4. Notification Base Message

All POIS top level ***notification*** messages are derived from the notification message types defined in [SCTE 130-8] which inherit from the core:Msg_NotificationBaseType abstract base message type. See the [SCTE 130-2] document for details on the attributes and elements contained in this base message.

10.4.1. Notification Base Message Attributes

All Notification Base Message Attributes are consistent with those listed in [SCTE 130-8]**.**

10.4.2. Notification Base Message Elements

All Notification Base Message Elements are consistent with those listed in [SCTE 130-8].

10.5. Acknowledgement Base Message

All POIS top level ***acknowledgement*** messages are derived from the acknowledgement message types defined in [SCTE 130-8] which inherit from the core:Msg_AcknowledgementBaseType abstract base message type. See the [SCTE 130-8] document for details on the attributes and elements contained in this base message.

10.5.1. Acknowledgement Base Message Attributes

All Acknowledgement Base Message Attributes are consistent with those listed in [SCTE 130-8].

10.5.2. Acknowledgement Base Message Elements

All Acknowledgement Base Message Elements are consistent with those listed in [SCTE 130-8].

10.6. POIS Message Exchange

The following diagram illustrates a typical message exchange between a POIS client and a POIS implementation.

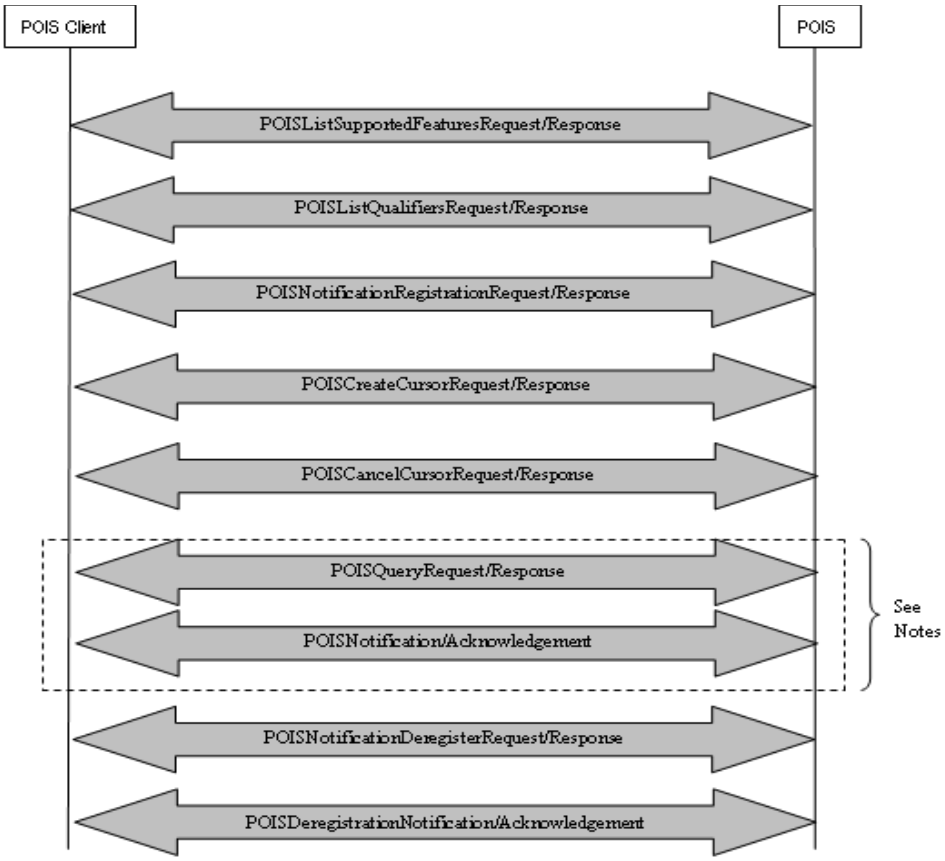

Figure 2 - POIS Top Level Messages Exchanges

Note: The Query and Notification exchange *may* occur repeatedly between logical service channel setup and tear down.

Table 2 provides brief description of each POIS message.

Table 2 - POIS Top Level Messages

Message	Description
POISListSupportedFeaturesRequest	Request to retrieve a list of the POIS's supported features.
POISListSupportedFeaturesResponse	Response to POISListSupportedFeaturesRequest.
POISListQualifiersRequest	Request to retrieve a list of names that can be used to construct basic queries using name/value pairs.
POISListQualifiersResponse	Response to POISListQualifiersRequest.
POISListNotificationRegistrationRequest	Request to list existing registrations.
POISListNotificationRegistrationResponse	Response to POISListNotificationRegistrationRequest.
POISNotificationRegistrationRequest	Registration request for notification.
POISNotificationRegistrationResponse	Response to POISNotificationRegistrationRequest.
POISNotification	Notification message indicating a change to the result set of a registered query.
POISNotificationAcknowledgement	Response to POISNotification.
POISQueryRequest	Request to acquire records from the POIS.
POISQueryResponse	Response to POISQueryRequest.
POISCreateCursorRequest	Request to create a cursor.
POISCreateCursorResponse	Response to POISCreateCursorRequest.
POISCancelCursorRequest	Request to cancel an existing cursor.
POISCancelCursorResponse	Response to POISCancelCursorRequest.
POISNotificationDeregisterRequest	Request to de-register a previously accepted registration.
POISNotificationDeregisterResponse	Response to POISNotificationDeregisterRequest.
POISDeregistrationNotification	Deregistration notification.
POISDeregistrationAcknowledgement	Deregistration notification acknowledgement.

10.7. POISListSupportedFeaturesRequest and Response Messages

The ListSupportedFeaturesRequest and ListSupportedFeaturesResponse messages allow clients to inquire about the data models and advanced query languages supported by a POIS implementation. A POIS implementation ***shall*** implement the appropriate basic query support per Section 9 and *should* implement advanced query language support as defined by [SCTE 130-8]. See Section 9 and [SCTE 130-8] for additional information.

10.7.1. POISListSupportedFeaturesRequest Message

The POISListSupportedFeaturesRequest message allows a POIS client to inquire about the data models and advanced query languages supported by a POIS implementation.

Figure 3 illustrates the POISListSupportedFeaturesRequest message's schema.

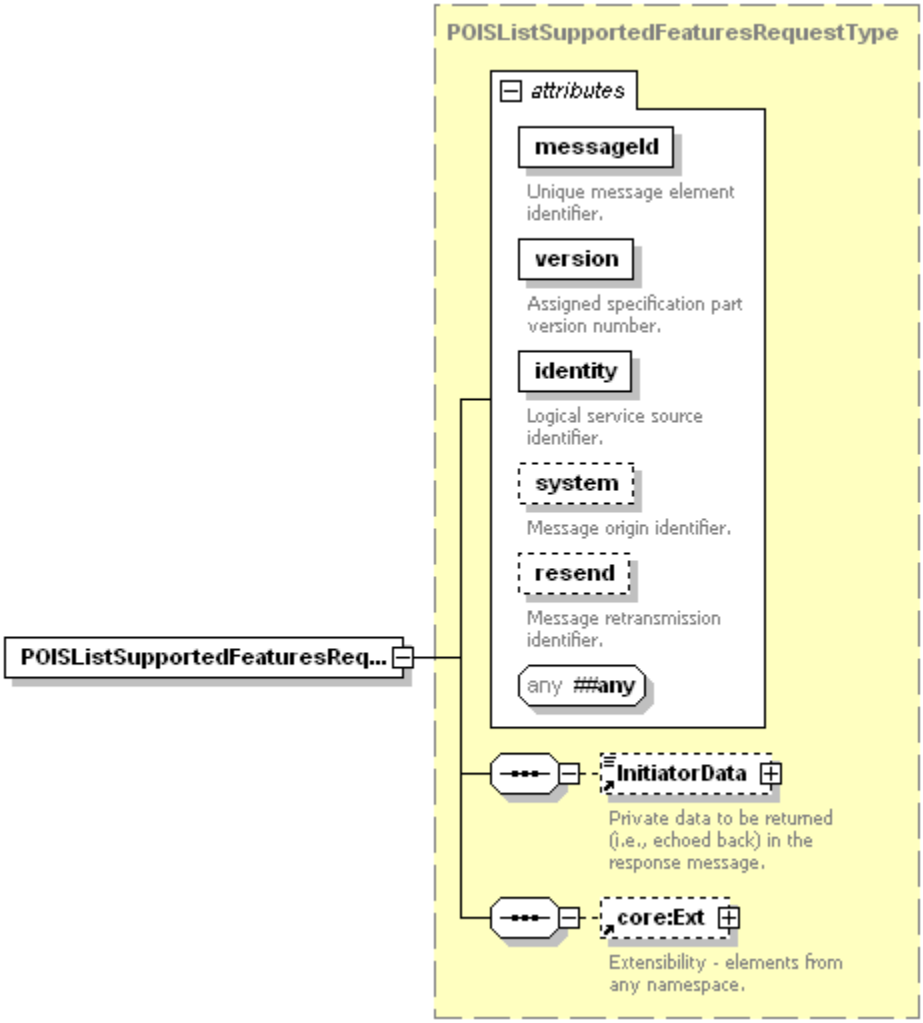

Figure 3 - POISListSupportedFeaturesRequest Message

This POIS interface adds only a single core:Ext to the gis:ListSupportedFeaturesRequestType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.7.2. POISListSupportedFeaturesResponse Message

A successful return status in the POISListSupportedFeaturesResponse message indicates the message ***shall*** contain at a minimum the following elements:

- A single core:Callout element containing one or more core:Address element(s) supplying an endpoint for additional services as specified by Table 3. See [SCTE 130-2] and [SCTE 130-8] for additional information.
- One ServiceDataModelProfile element describing a data model supported by a POIS. Additional ServiceDataModelProfile elements *may* appear for supplementary POIS supported data models and all data models are outside the scope of this specification.

Figure 4 illustrates the POISListSupportedFeaturesResponse message's schema.

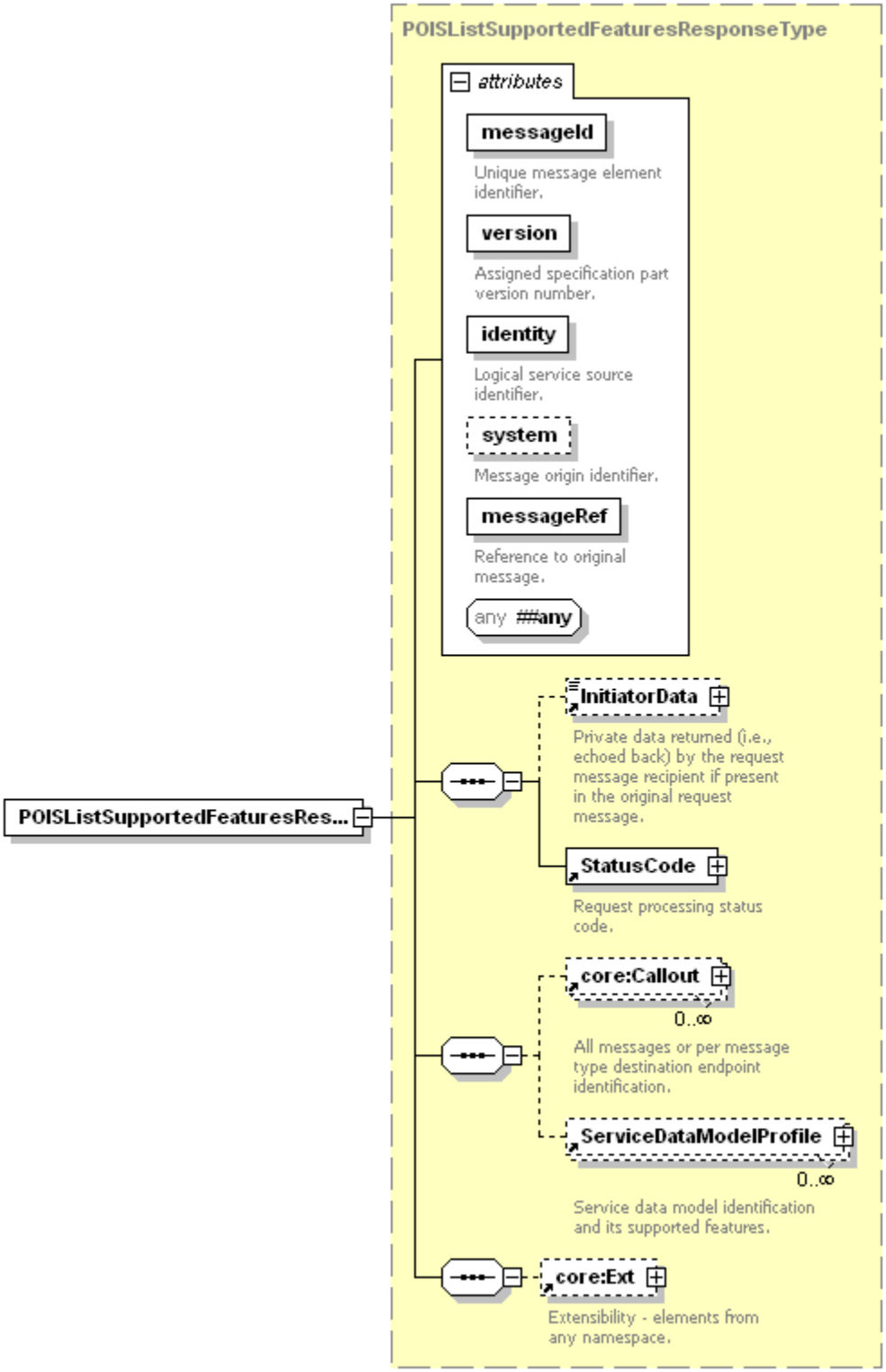

Figure 4 - POISListSupportedFeaturesResponse Message

This POIS interface adds only a single core:Ext to the gis:ListSupportedFeaturesResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

Table 3 contains the values for the @message attribute of the core:Callout element. Values for the @message attribute ***shall*** appear exactly as defined by this table.

Table 3 - POISListSupportedFeaturesResponse/core:Callout @message Values

Value	Description
POISListQualifiersRequest	Value associated with the address endpoint where POISListQualifiersRequest messages shall be sent.
POISNotificationRegistrationRequest	Value associated with the address endpoint where POISNotificationRegistrationRequest messages shall be sent.
POISNotificationDeregisterRequest	Value associated with the address endpoint where POISNotificationDeregisterRequest messages shall be sent.
POISListNotificationRegistrationRequest	Value associated with the address endpoint where POISListNotificationRegistrationRequest messages shall be sent.
POISCreateCursorRequest	Value associated with the address endpoint where POISCreateCursorRequest messages shall be sent.
POISCancelCursorRequest	Value associated with the address endpoint where POISCancelCursorRequest messages shall be sent.
POISQueryRequest	Value associated with the address endpoint where POISQueryRequest messages shall be sent.
ServiceStatusNotification	Value associated with the address endpoint where core:ServiceStatusNotification messages shall be sent.
…	User defined address endpoint outside of the scope of this specification. The string shall be prefixed with the text “private:”.

All message values listed in - and not present in the POISListSupportedFeaturesRequest message’s core:Callout XML element sequence ***shall*** be available through the default endpoint if present. The default endpoint is identified by a core:Callout element not having the @message attribute. See [SCTE 130-2] for additional information.

10.8. POISListQualifiersRequest and Response Messages

The POISListQualifiersRequest and POISListQualifiersResponse messages allow clients to discover the Placement Opportunity information qualifiers associated with a POIS implementation's service data models which *may* be queried with the basic query interface.

10.8.1. POISListQualifiersRequest Message

The POISListQualifiersRequest message allows a POIS consumer to inquire about the qualifier names used by a service data model available for query using the basic query interface.

Figure 5 illustrates the POISListQualifiersRequest message's schema.

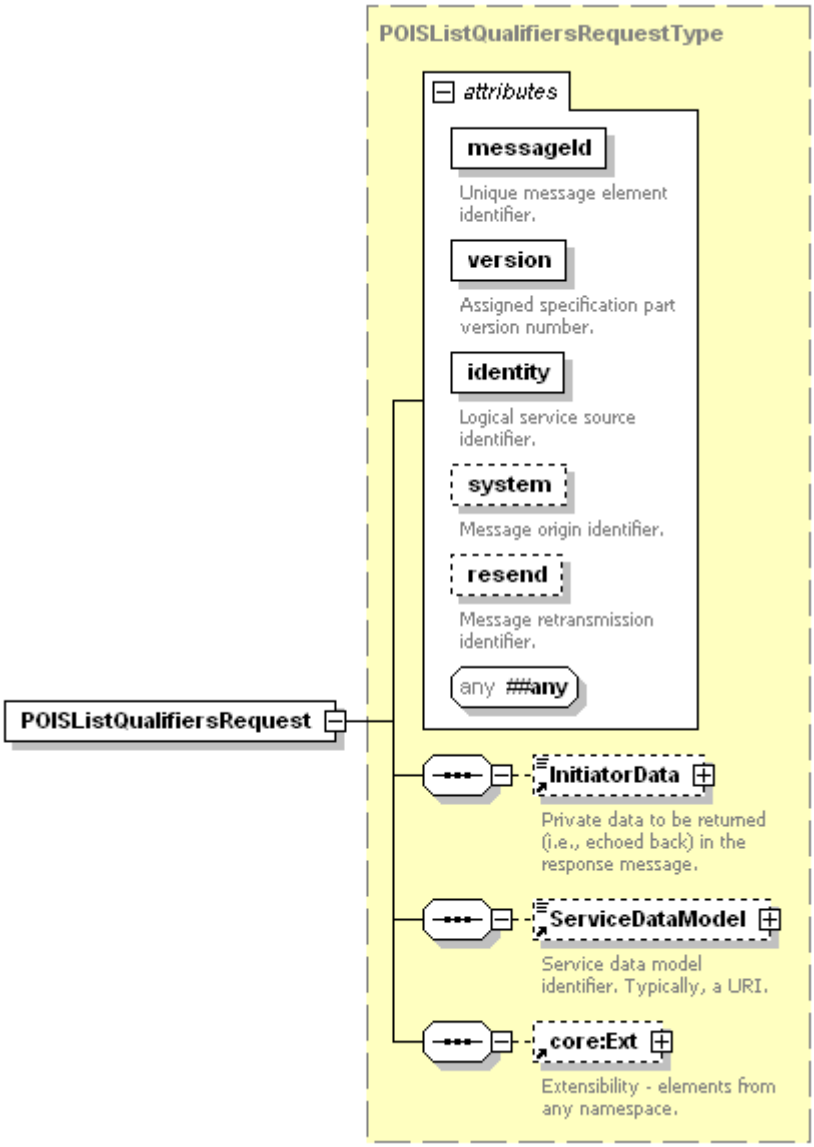

Figure 5 - POISListQualifiersRequest Message

This POIS interface adds only a single core:Ext to the gis:ListQualifiersRequestType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.8.2. POISListQualifiersResponse Message

If the POIS implementation supports the service data model specified in the POISListQualifiersRequest message's ServiceDataModel element, the POISListQualifiersResponse message ***shall*** contain, at a

minimum, a single BasicQueryDataModelDescription element. See [SCTE 130-8] for additional information on the BasicQueryDataModelDescription element.

If the POIS implementation does not support the service data model contained in the POISListQualifiersRequest/ServiceDataModel element, no BasicQueryDataModelDescription element ***shall*** be returned and the StatusCode element's @detailCode ***shall*** be set to core:ResourceNotFound.

The XML schema definition for the POISListQualifiersResponse message is illustrated in Figure 6.

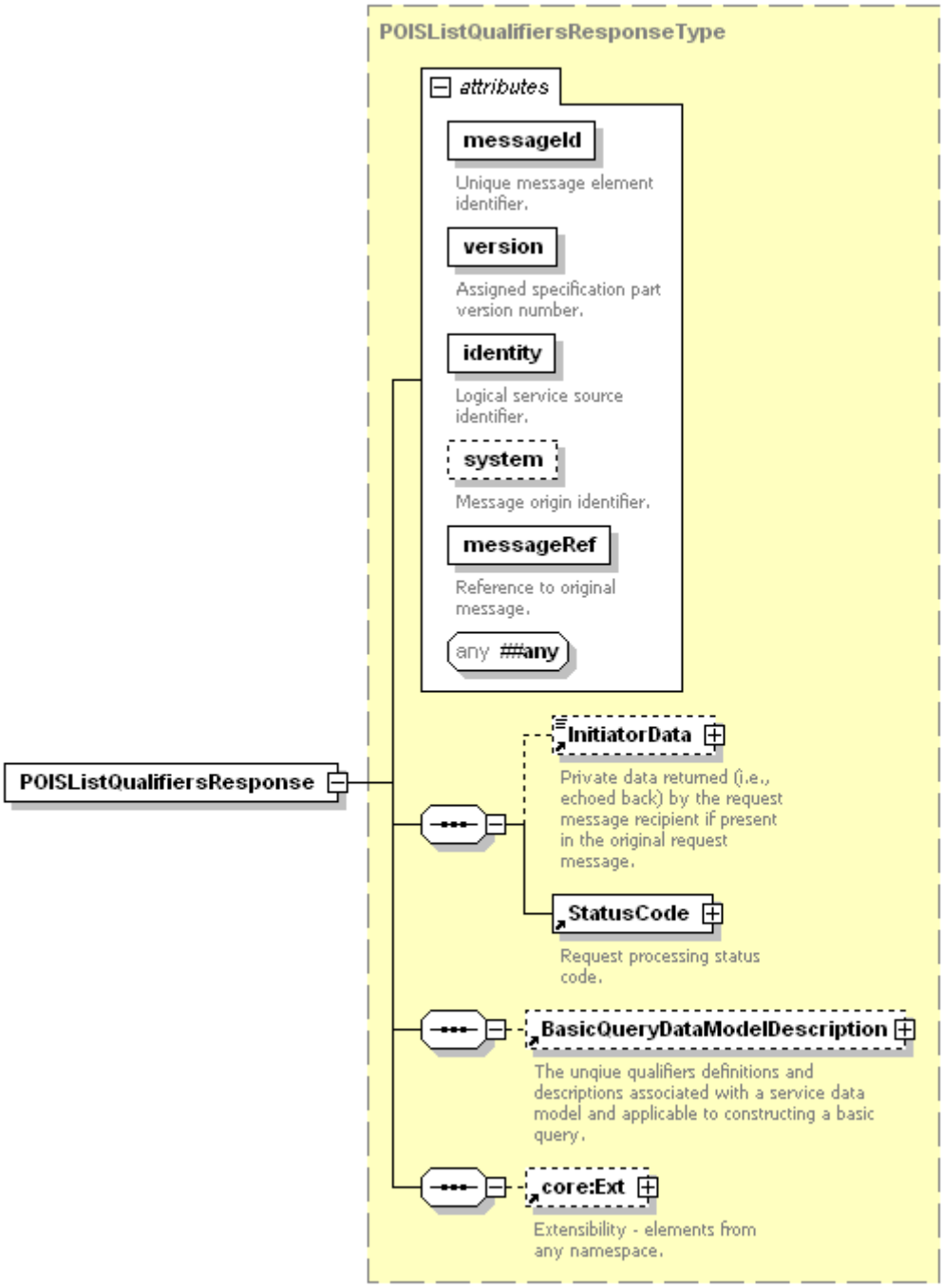

Figure 6 - POISListQualifiersResponse Message

This POIS interface adds only a single core:Ext to the gis:ListQualifiersResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.9. POISListNotificationRegistrationRequest and Response Messages

A POIS client *may* inquire about current registrations by using the POISListNotificationRegistrationRequest message. A POIS implementation ***shall*** respond to the POISListNotificationRegistrationRequest message with a POISListNotificationRegistrationResponse message. This allows the client to discover the active notification queries previously installed by one or more POISNotificationRegistrationRequest messages.

10.9.1. POISListNotificationRegistrationRequest Message

The POISListNotificationRegistrationRequest message *may* be issued to retrieve information about active notification registrations using the support inquiry control attributes. See [SCTE 130-8] for additional information.

Figure 7 illustrates the POISListNotificationRegistrationRequest message's schema.

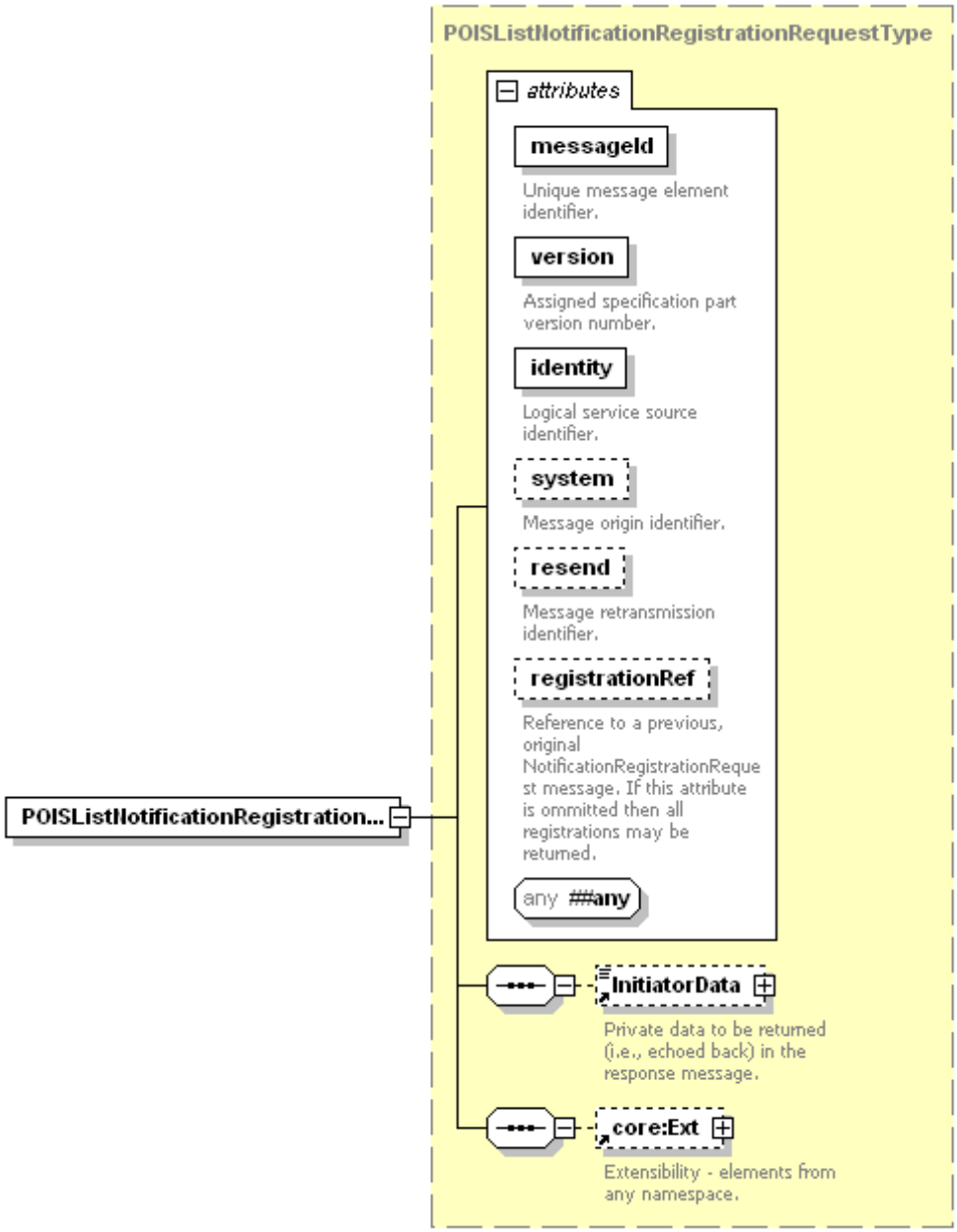

Figure 7 - POISListNotificationRegistrationRequest Message

This POIS interface adds only a single core:Ext to the gis:ListNotificationRegistrationRequestType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.9.2. POISListNotificationRegistrationResponse Message

The POISListNotificationRegistrationResponse message is the return message to a POISListNotificationRegistrationRequest message. The response message contains the active POISNotificationRegistrationRequest messages as appropriate for the inquiry.

Figure 8 illustrates the POISListNotificationRegistrationResponse message's schema.

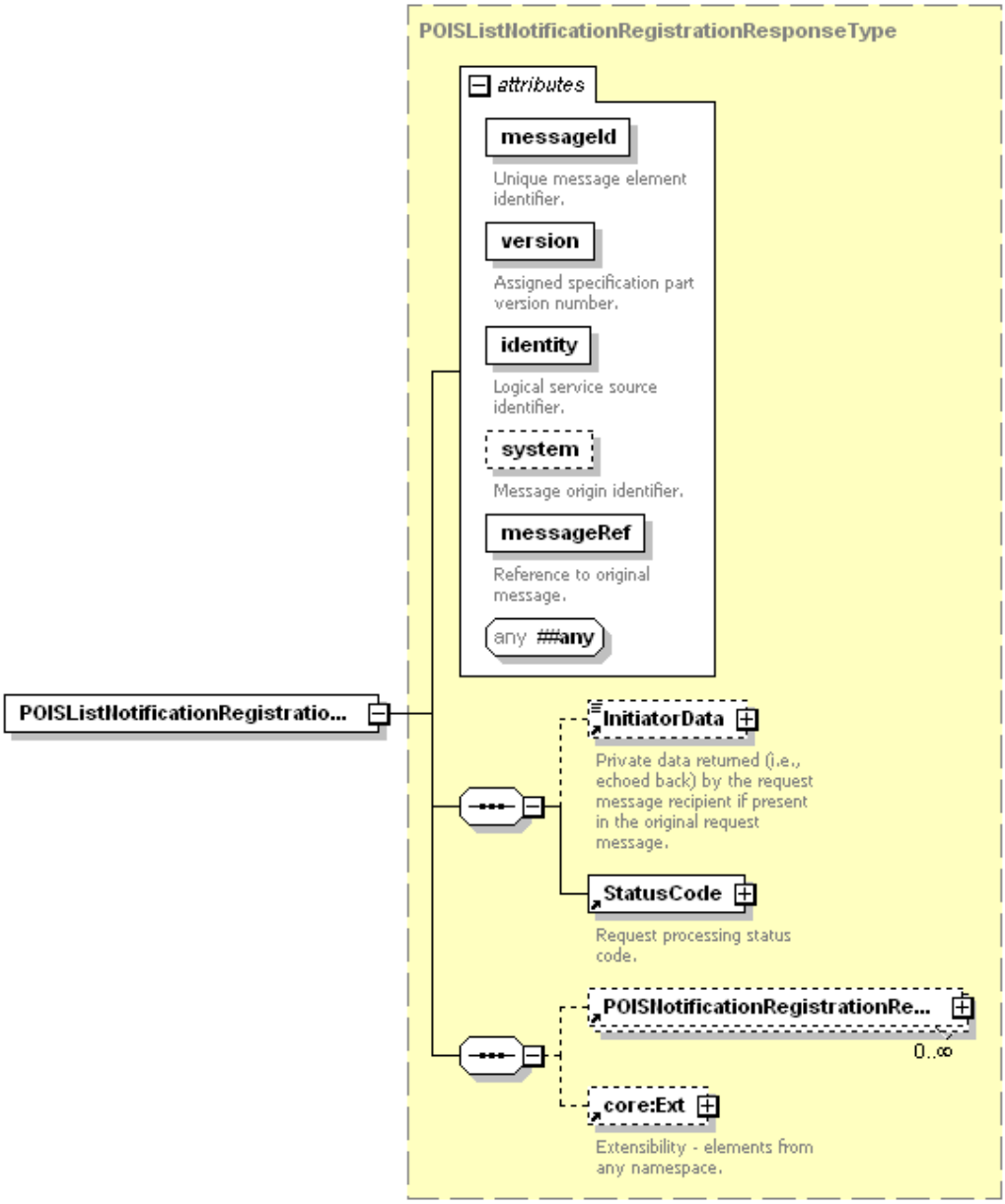

Figure 8 - POISListNotificationRegistrationResponse Message

This POIS interface adds zero or more POISNotificationRegistrationRequest elements and a single core:Ext to the gis: NotificationRegistrationResponseType defined by [SCTE 130-8]. See [SCTE 130-8] and below for additional information.

POISNotificationRegistrationRequest [Optional] — The POISNotificationRegistrationRequest element ***shall*** be a recoded copy of the accepted registration. The message element order does not convey any information (e.g., element order does not reflect registration order). For more information on the POISNotificationRegistrationRequest element see Section 10.10.1 and the discussion of the gis:NotificationRegistrationRequest type in [SCTE 130-8].

10.10. POISNotificationRegistrationRequest and Response Messages

A POIS implementation ***shall*** support registration for notification message delivery as defined by [SCTE 130-8]. The POISNotificationRegistrationRequest message allows a POIS client to specify notification interests using a basic or an advanced query.

On receipt of an update, addition or deletion event from its underlying data store, a POIS implementation ***shall*** send a notification message to each matching registered POIS consumer.

10.10.1. POISNotificationRegistrationRequest Message

The POISNotificationRegistrationRequest message allows a client to specify a set of notification interests by registering a query against a POIS implementation's data model. These registered queries ***shall*** be examined by the POIS implementation relative to changes in any data relevant to the query. If any change to the data causes a change to the query result for a previously registered query, a notification containing the new result ***shall*** be sent to the client in the form of a POISNotification message.

Figure 9 illustrates the POISNotificationRegistrationRequest message's schema.

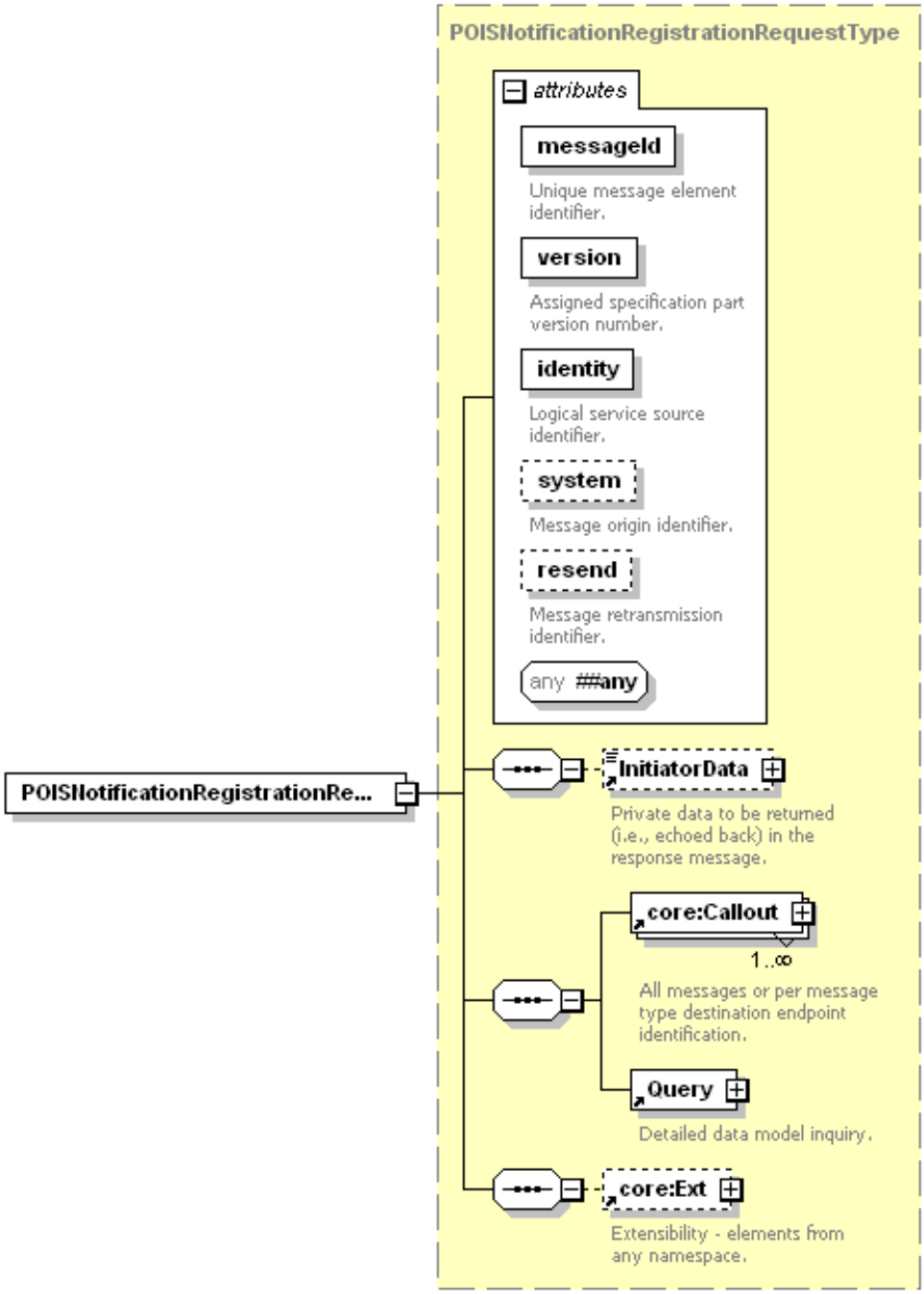

Figure 9 - POISNotificationRegistrationRequest Message

This POIS interface adds a single core:Ext to the [SCTE 130-8] gis:NotificationRegistrationRequestType. See [SCTE 130-8] for additional information.

Additionally, a POIS implementation ***shall*** recognize the values listed in Table 4 as values for the core:Callout @message attribute. Values for the @message attribute ***shall*** appear exactly as defined in this table.

Table 4 - NotificationRegistrationRequest/core:Callout @message values

@message Attribute Value	Description
POISNotification	Value associated with the address endpoint where POISNotification messages shall be sent.
ServiceStatusNotification	Value associated with the address endpoint where core:ServiceStatusNotification messages shall be sent.
POISDeregistrationNotification	Value associated with the address endpoint where POISDeregistrationNotification messages shall be sent.
…	User defined address endpoint outside of the scope of this specification. The string shall be prefixed with the text “private:”.

All message values listed in Table 4 and not present in the POISNotificationRegistrationRequest message’s core:Callout XML element sequence ***shall*** be available through the default endpoint if present. The default endpoint is identified by a core:Callout element not having the @message attribute. See [SCTE 130-2] for additional information.

10.10.2. POISNotificationRegistrationResponse Message

Upon completion of processing a POISNotificationRegistrationRequest message, the POIS service ***shall*** respond with a POISNotificationRegistrationResponse message.

Figure 10 illustrates the POISNotificationRegistrationResponse message’s schema.

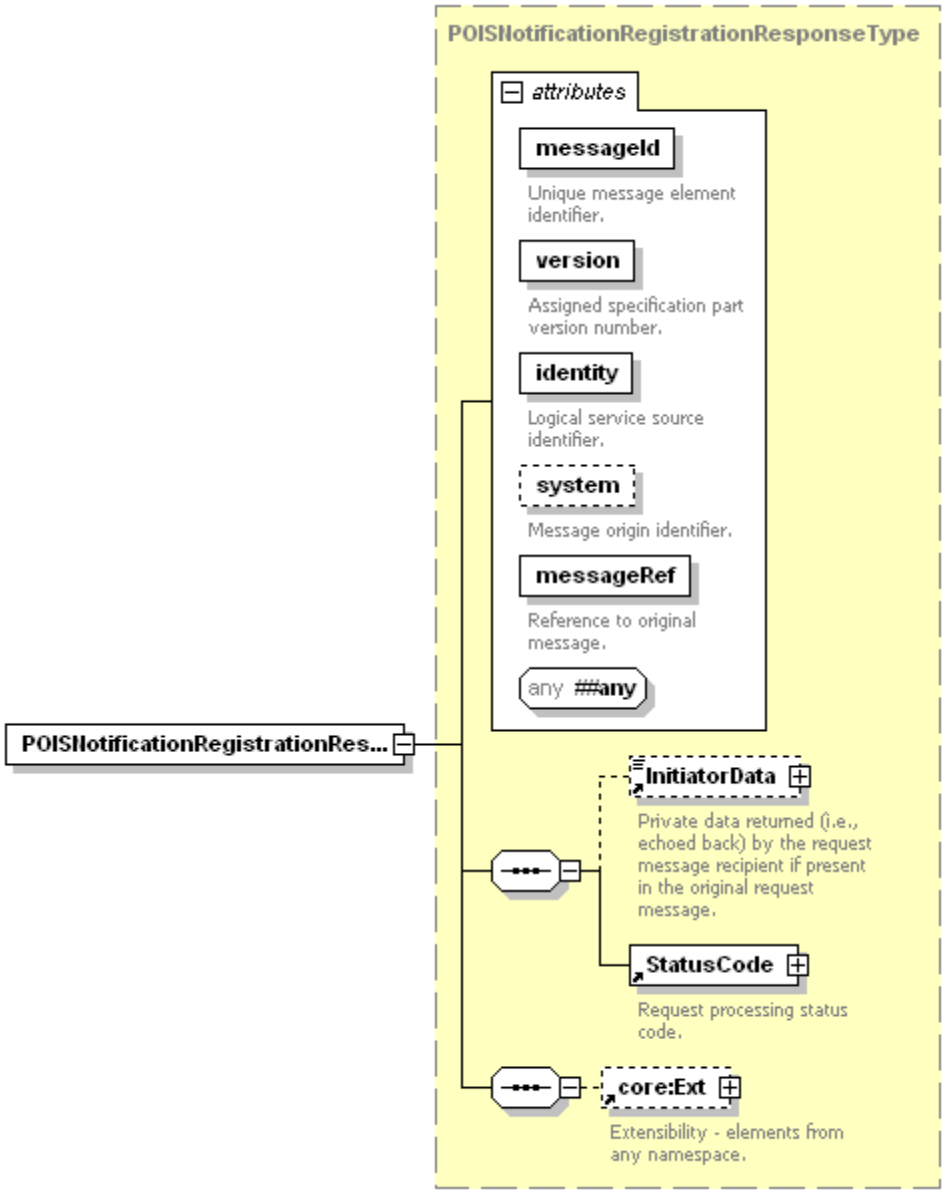

Figure 10 - POISNotificationRegistrationResponse Message

This POIS interface adds only a single core:Ext to the gis:NotificationRegistrationResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.11. POISNotification and Acknowledgement Messages

A POIS implementation ***shall*** support the exchange of POISNotification and POISNotificationAcknowledgement messages with registered consumers for the purpose of notifying the consumer of changes in data relevant to the consumer's registered queries as defined by [SCTE 130-8].

10.11.1. POISNotification Message

Upon detection of a change in the result set of one or more queries registered with a POIS implementation, the POIS ***shall*** send a POISNotification message to qualified, registered clients.

The XML schema for the POISNotification message is illustrated in Figure 11.

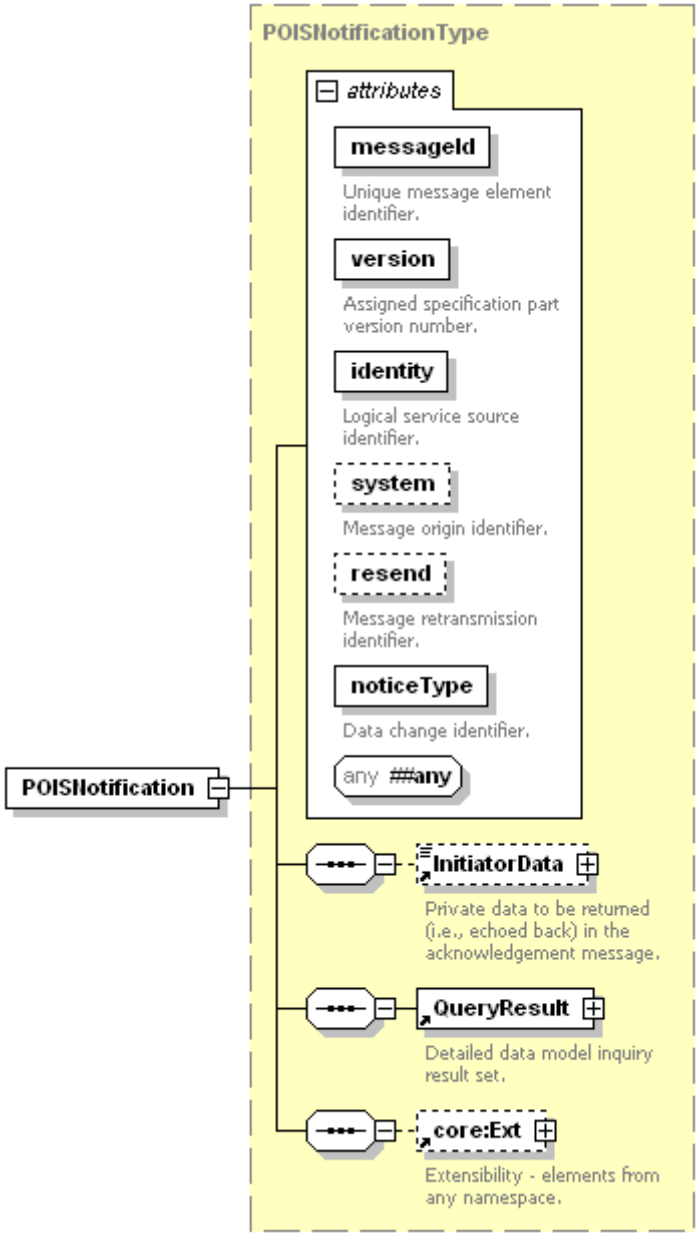

Figure 11 - POISNotification Message

This POIS interface adds only a single core:Ext to the gis:NotificationType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

Note: The gis:BasicQueryResultAbstract element located within the QueryResult element ***shall*** be substituted for by a data model specific results element which extends from the gis:BasicQueryResultAbstract element. The element present is dependent upon the data model being queried and the query parameters.

10.11.2. POISNotificationAcknowledgement Message

Upon receipt of a POISNotification message, a POIS client ***shall*** respond with a POISNotificationAcknowledgement message.

Figure 12 illustrates the POISNotificationAcknowledgement message's schema.

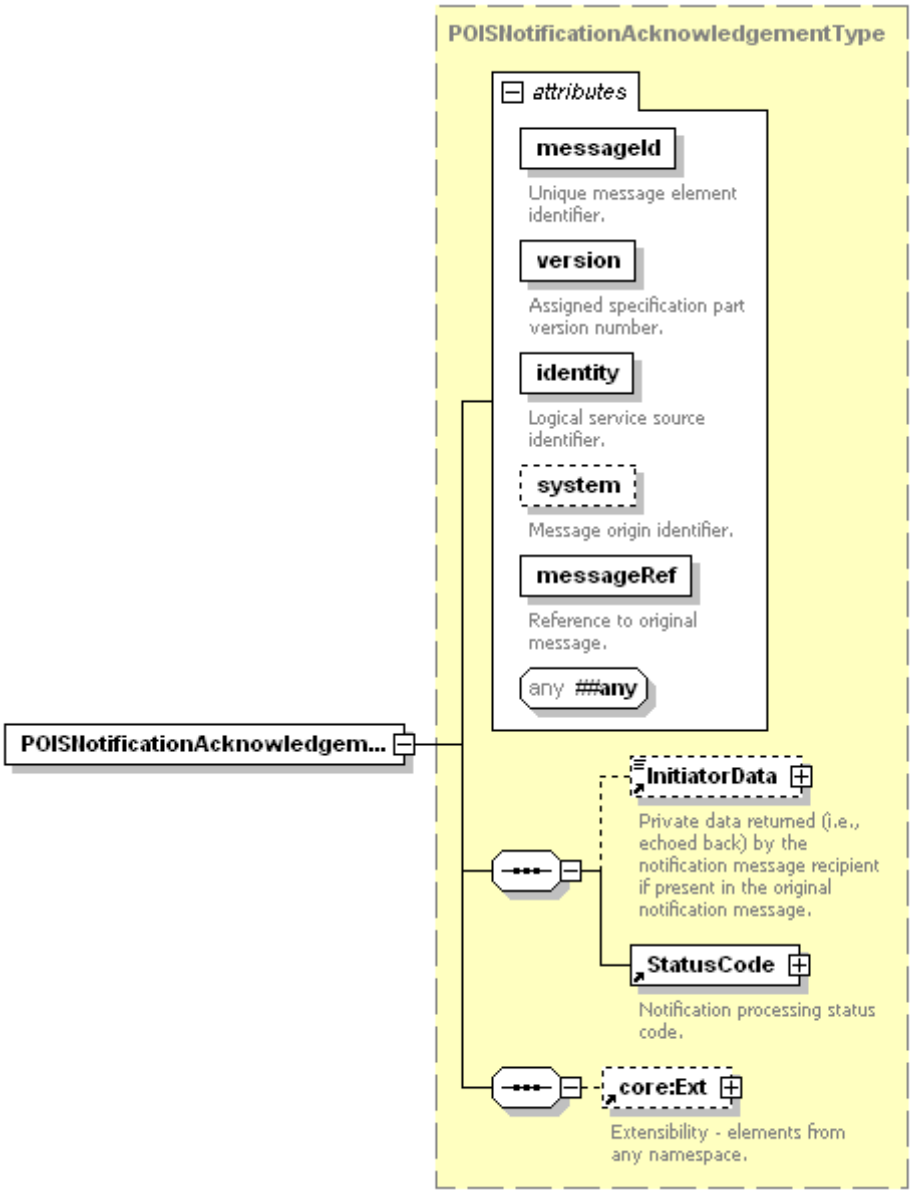

Figure 12 - POISNotificationAcknowledgement Message

This POIS interface adds only a single core:Ext to the gis:NotificationAcknowledgementType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.12. POISCreateCursorRequest and Response Messages

A POIS implementation ***shall*** support cursors of static Placement Opportunity information for both basic and advanced queries, which ***shall*** exist for a specified duration. Upon creation of a cursor using the POIS interface, the data information in the cursor ***shall*** remain static relative to the referenced data store.

Cursors have a limited life span, which is first requested by the client, but *may* be overridden by the POIS. As part of the cursor request message, the client ***shall*** specify a @cursorExpires core:dateTimeTimezoneType attribute. This date and time is a request to a POIS for a specific end date and time for the cursor identified by the @cursorId attribute. In order to maintain overall system health, a POIS implementation *may* choose to override a requested cursor expires end date and time and substitute a different, implementation specific, cursor expires end date and time.

10.12.1. POISCreateCursorRequest Message

The POISCreateCursorRequest message is used to create an instance of a static cursor on a POIS implementation.

Figure 13 illustrates the POISCreateCursorRequest message's schema.

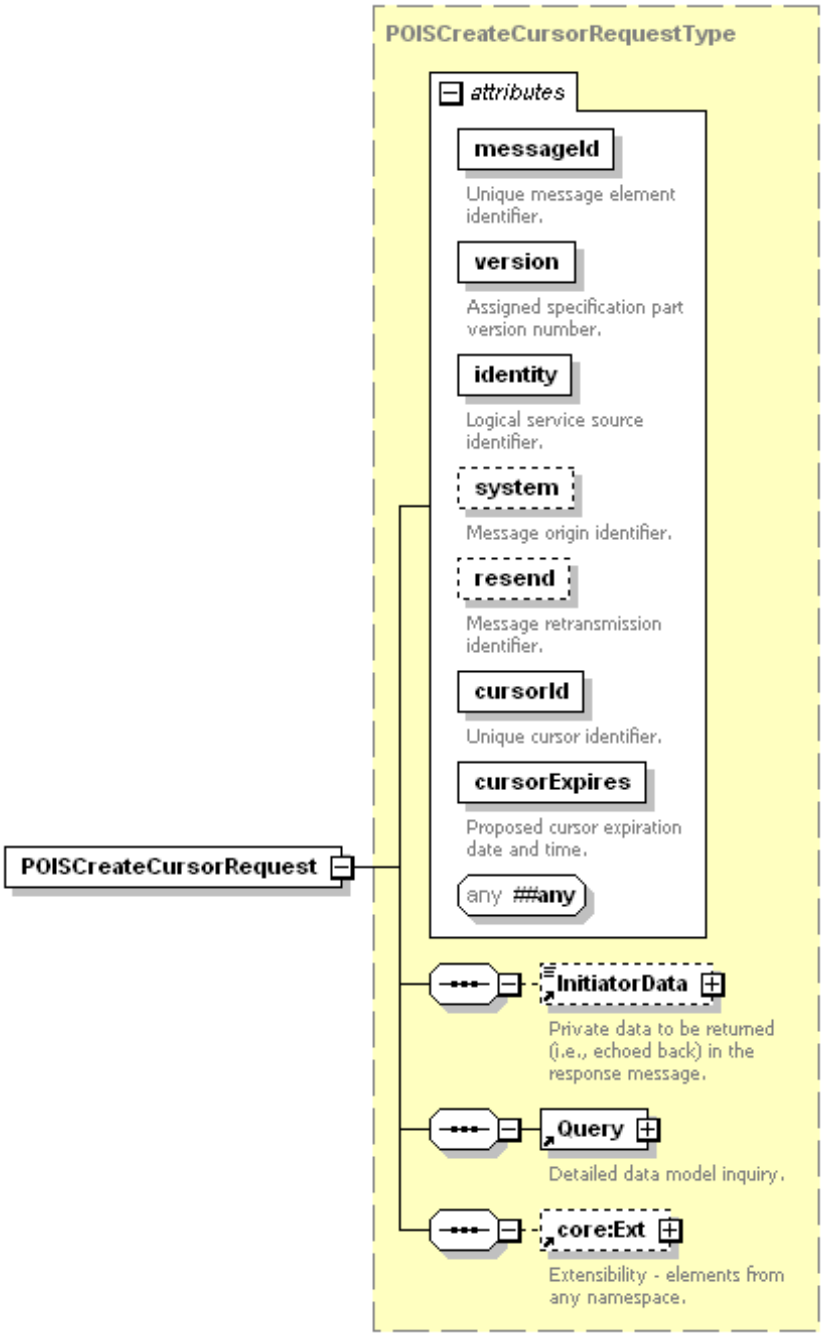

Figure 13 - POISCreateCursorRequest Message

This POIS interface adds only a single core:Ext to the [SCTE 130-8] gis:CreateCursorRequestType. See [SCTE 130-8] for additional information.

10.12.2. POISCreateCursorResponse Message

Upon receipt of a POISCreateCursorRequest message, a POIS implementation ***shall*** attempt to create the required cursor and ***shall*** respond to the client with a POISCreateCursorResponse message. If the query is not successful (i.e., the POISCreateCursorReponse message's core:StatusCode value does not equate to success) then the cursor ***shall not*** be established.

Figure 14 illustrates the POISCreateCursorResponse message's schema.

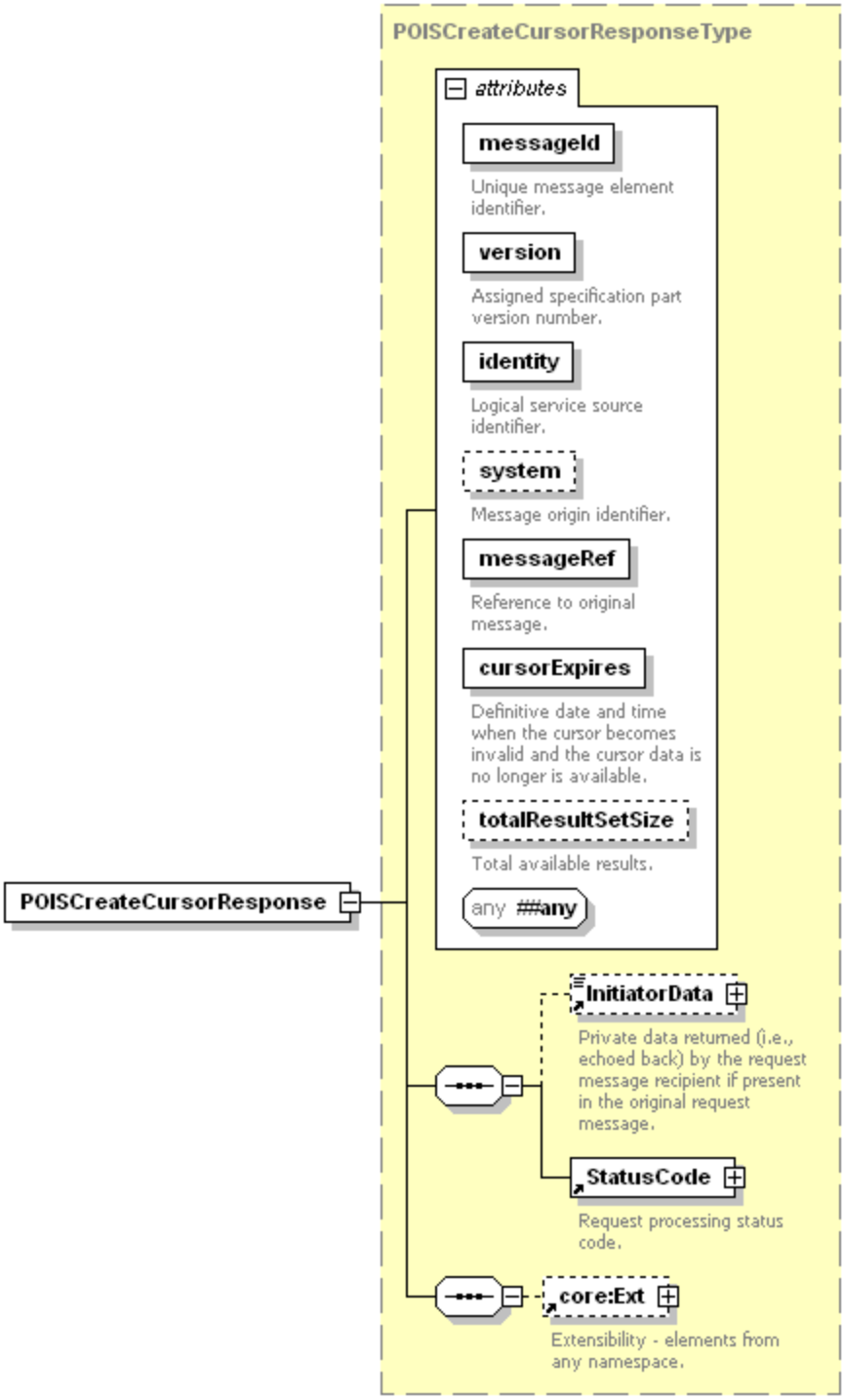

Figure 14 - POISCreateCursorResponse Message

This POIS interface adds only a single core:Ext to the gis:CreateCursorResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.13. POISCancelCursorRequest and Response Messages

A POIS implementation ***shall*** allow a client to cancel an existing cursor before the expiration time has passed.

A POIS client *may* complete interacting with a cursor before the cursor actually expires, and *may* choose to terminate the cursor. Once a cursor has been terminated or has expired, the POIS *may* release resources associated with the cursor.

10.13.1. POISCancelCursorRequest Message

This message allows a client of a POIS implementation to terminate a cursor before the cursor's expiration time.

Figure 15 illustrates the POISCancelCursorRequest message's schema.

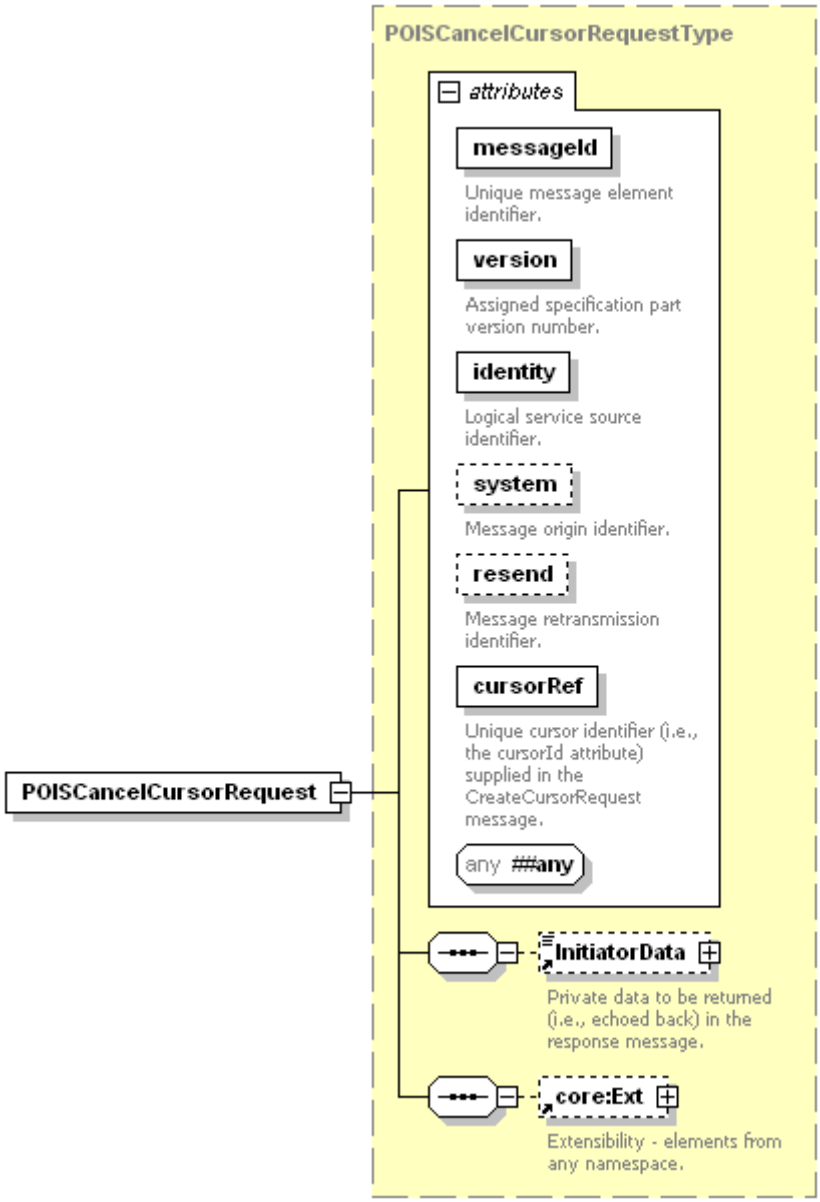

Figure 15 - POISCancelCursorRequest Message

This POIS interface adds only a single core:Ext to the gis:CancelCursorRequestType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.13.2. POISCancelCursorResponse Message

Upon receipt of a POISCancelCursorRequest message, a POIS implementation ***shall*** terminate the cursor identified by the @cursorRef attribute and ***shall*** return a POISCancelCursorResponse message.

Figure 16 illustrates the POISCancelCursorResponse message's schema.

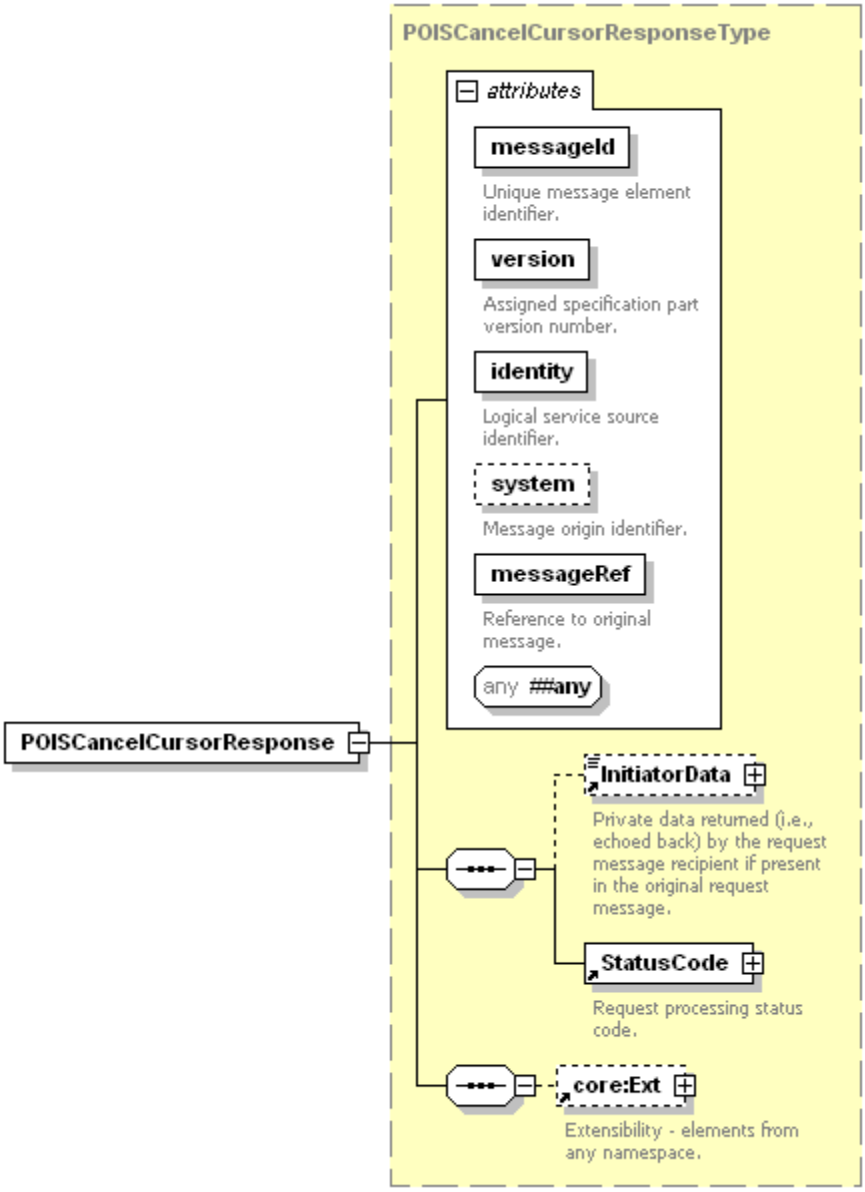

Figure 16 - POISCancelCursorResponse Message

This POIS interface adds only a single core:Ext to the gis:CancelCursorResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.14. POISQueryRequest and Response Messages

The POISQueryRequest and POISQueryResponse messages are used to initiate a query and receive results against the queried data model. The POISQueryRequest message supports both basic and advanced query mechanisms and references to existing static cursor information.

Basic queries leverage a limited key/value regular expression grammar. Advanced query support *should* be supported by all POIS implementations. Advanced queries allow for customized queries, using specific query languages, to be executed directly against the POIS data model representation. Results from advanced queries ***shall*** be returned to the service consumer without intermediate formatting by a POIS.

10.14.1. POISQueryRequest Message

The POISQueryRequest message is the primary mechanism for a client to execute a query against a POIS implementation's data model. This message contains either a Query Element or a reference to a previously established cursor.

Figure 17 illustrates the POISQueryRequest message's schema.

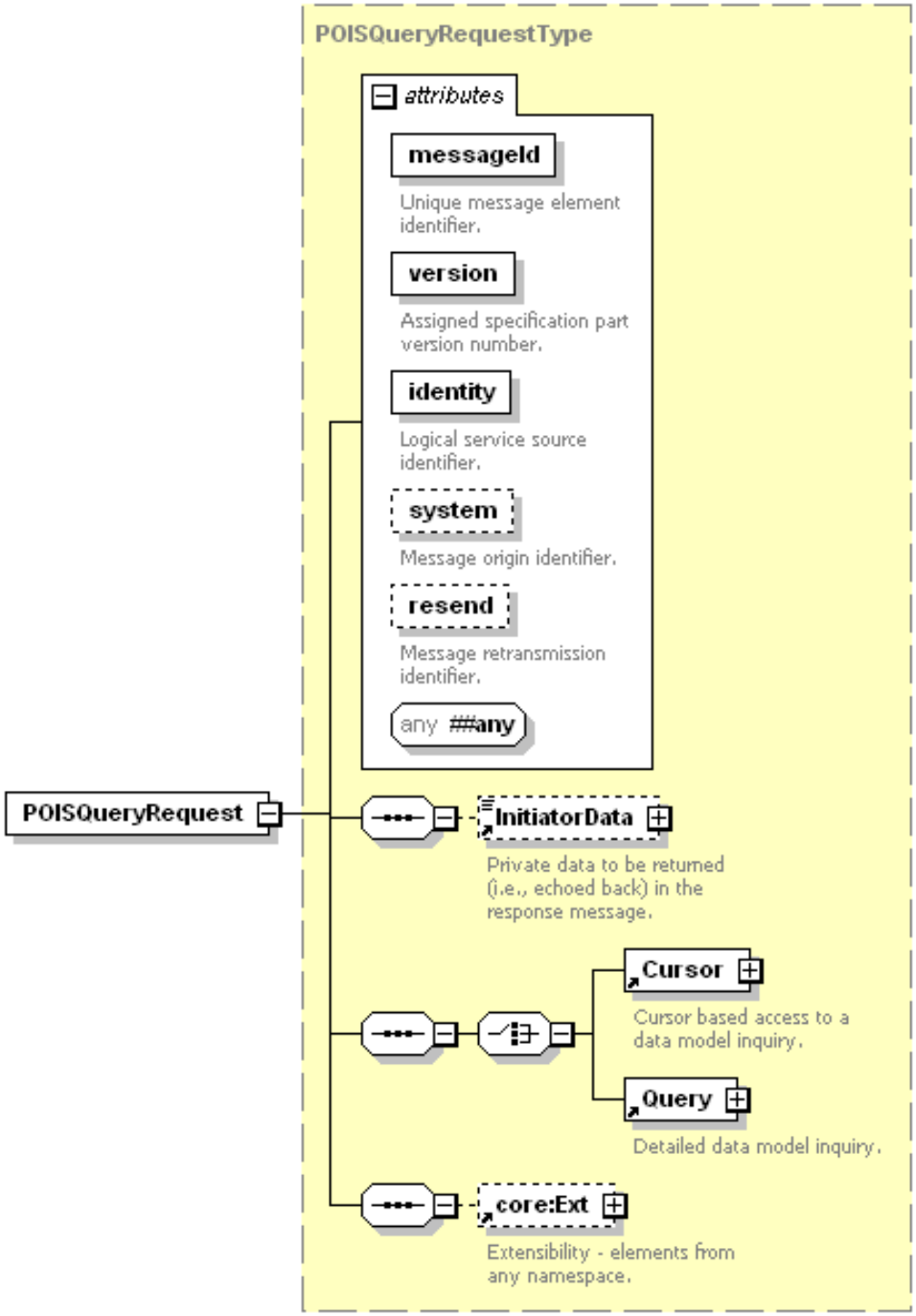

Figure 17 - POISQueryRequest Message

This POIS interface adds only a single core:Ext to the [SCTE 130-8] gis:QueryRequestType. See [SCTE 130-8] for additional information.

10.14.2. POISQueryResponse Message

Upon receipt of a POISQueryRequest message, a POIS implementation ***shall*** respond with a POISQueryResponse message. The response message contains the query results (basic, cursor, or advanced) in the QueryResult element.

The XML schema definition for this message is illustrated in Figure 18.

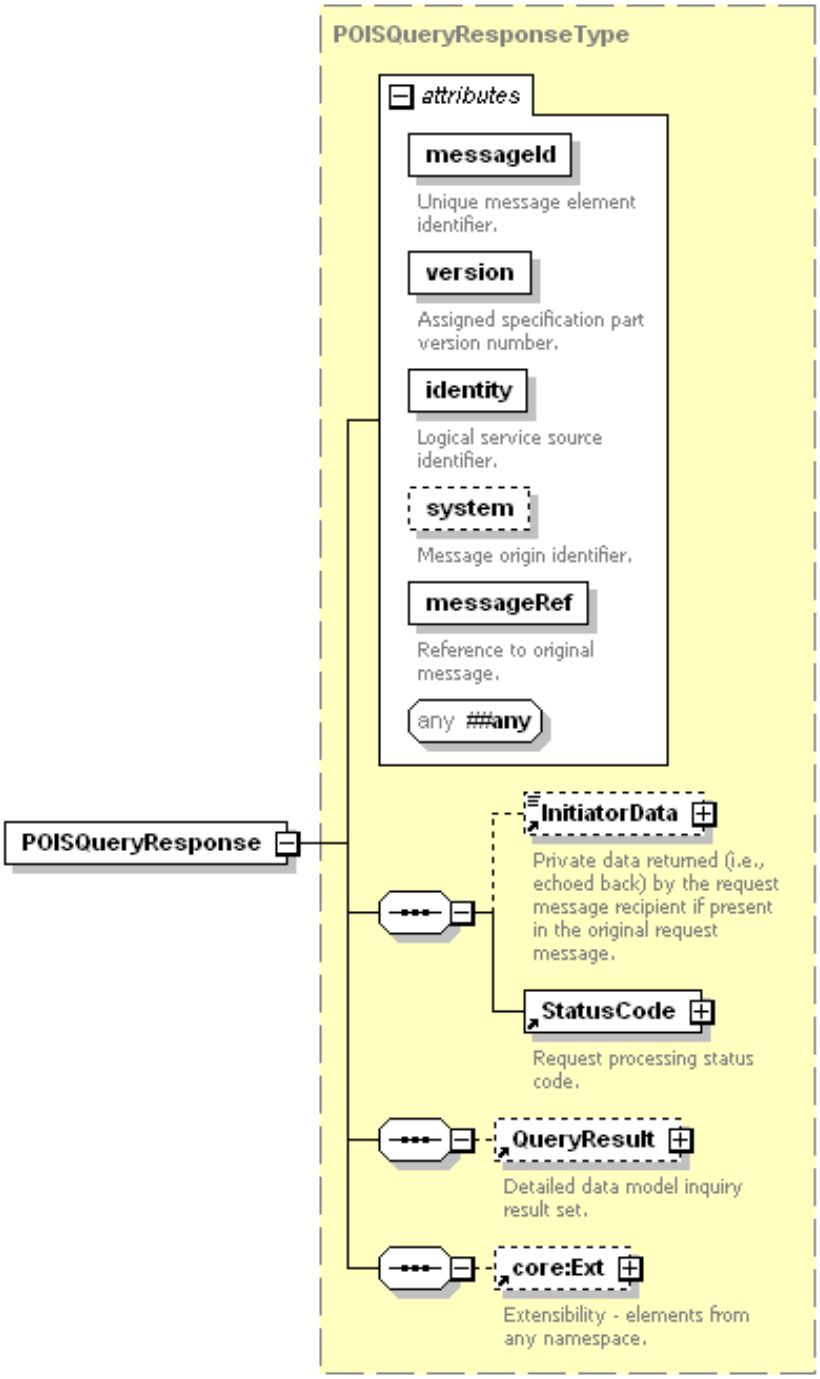

Figure 18 - POISQueryResponse Message

This POIS interface adds only a single core:Ext to the [SCTE 130-8] gis:QueryResponseType. See [SCTE 130-8] for additional information.

Note: The gis:BasicQueryResultAbstract element located within the QueryResult element ***shall*** be substituted for by a data model specific results element which extends from the gis:BasicQueryResultAbstract element. The element present is dependent upon the data model being queried and the query parameters.

10.15. POISNotificationDeregisterRequest and Response Messages

A POIS implementation ***shall*** allow a client to de-register a previously registered POISNotificationRegistrationRequest message. This message exchange allows a POIS client to dynamically modify registration notifications using individual register and deregister commands.

10.15.1. POISNotificationDeregisterRequest Message

The POISNotificationDeregisterRequest message removes an existing POISNotificationRegistrationRequest from a POIS.

Figure 19 illustrates the POISNotificationDeregisterRequest message's schema.

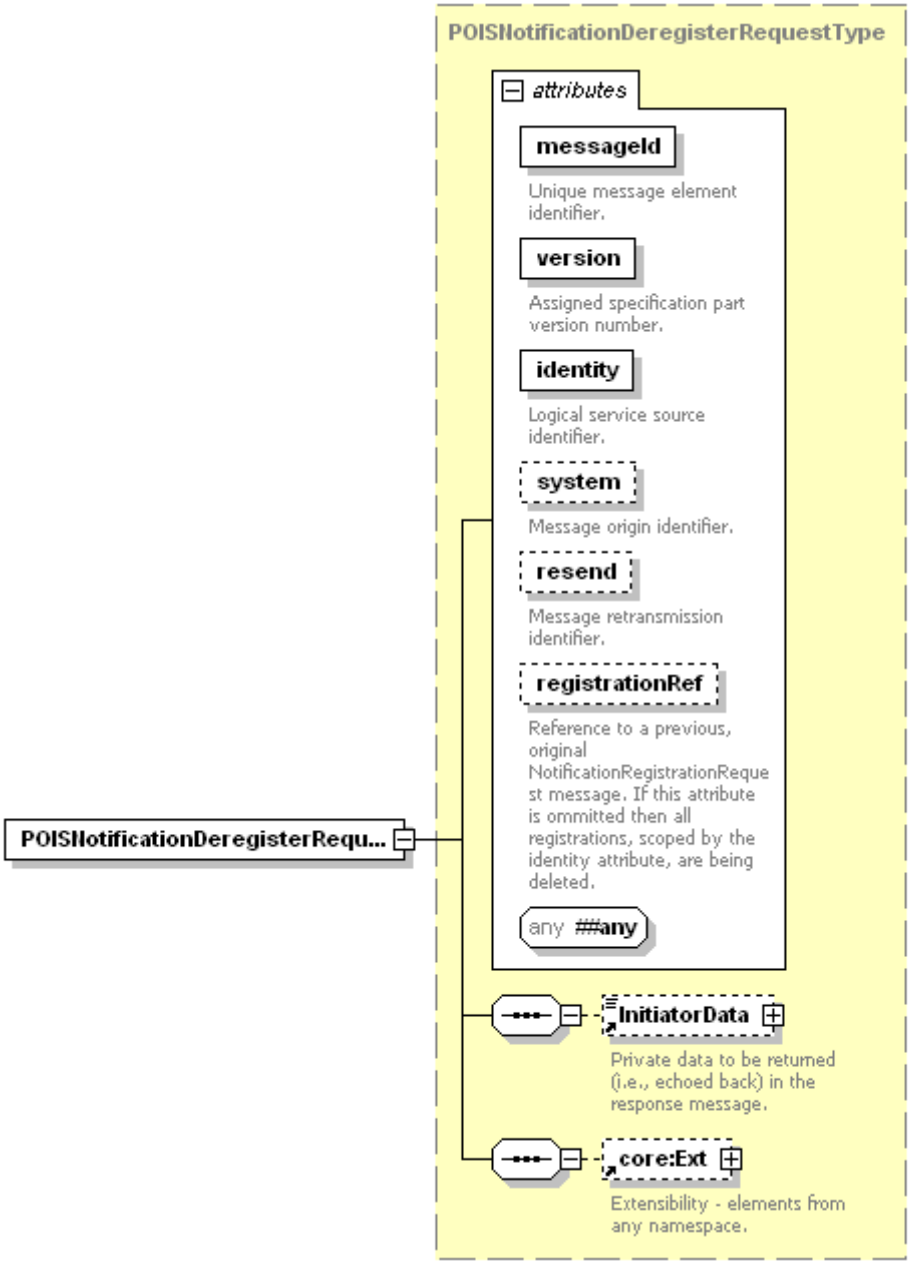

Figure 19 - POISNotificationDeregisterRequest Message

This POIS interface adds only a single core:Ext to the gis:NotificationDeregisterRequestType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.15.2. POISNotificationDeregisterResponse Message.

Upon receipt of a POISNotificationDeregisterRequest message from a client, a POIS implementation ***shall*** respond with a POISNotificationDeregisterResponse message.

Figure 20 illustrates the POISNotificationDeregisterResponse message's schema.

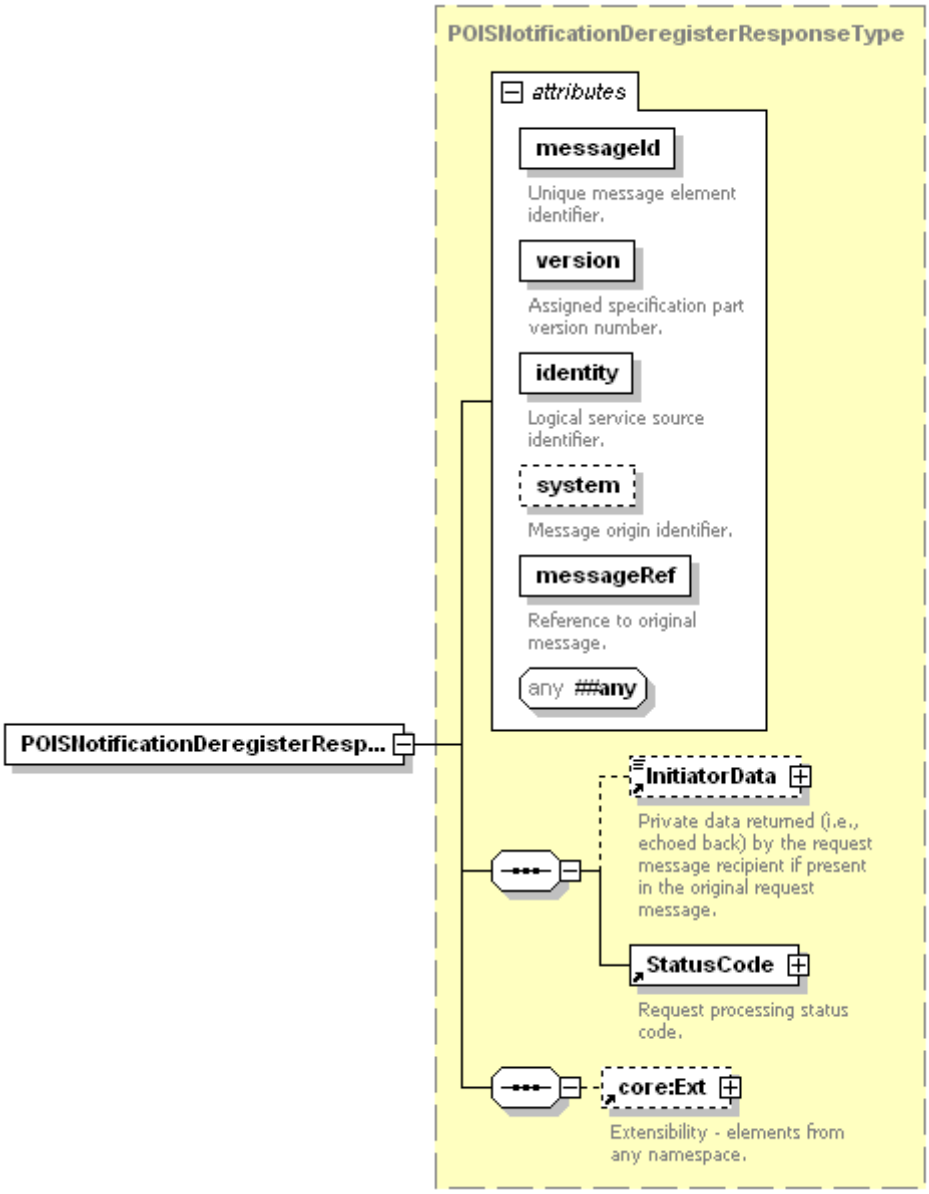

Figure 20 - POISNotificationDeregisterResponse Message

This POIS interface adds only a single core:Ext to the gis:NotificationDeregisterResponseType defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.16. POISDeregistrationNotification and Acknowledgement Messages

A POIS implementation ***shall*** have the ability to deregister clients. Deregistration removes client registrations from the system and stops any Placement Opportunity notification traffic from being sent to the deregistered client.

Upon receipt of a POISDeregistrationMotification message, a POIS client ***shall*** reply with a POISDeregistrationAcknowledgement message.

10.16.1. POISDeregistrationNotification Message

At any time, a POIS implementation *may* issue one or more POISDeregistrationNotification messages to registered POIS clients. This informs the client that one or all of their active registrations (i.e., POISNotificationRegistrationRequest messages) have been terminated and no further notifications ***shall*** be expected related to those registrations.

Figure 21 illustrates the POISDeregistrationNotification message's schema.

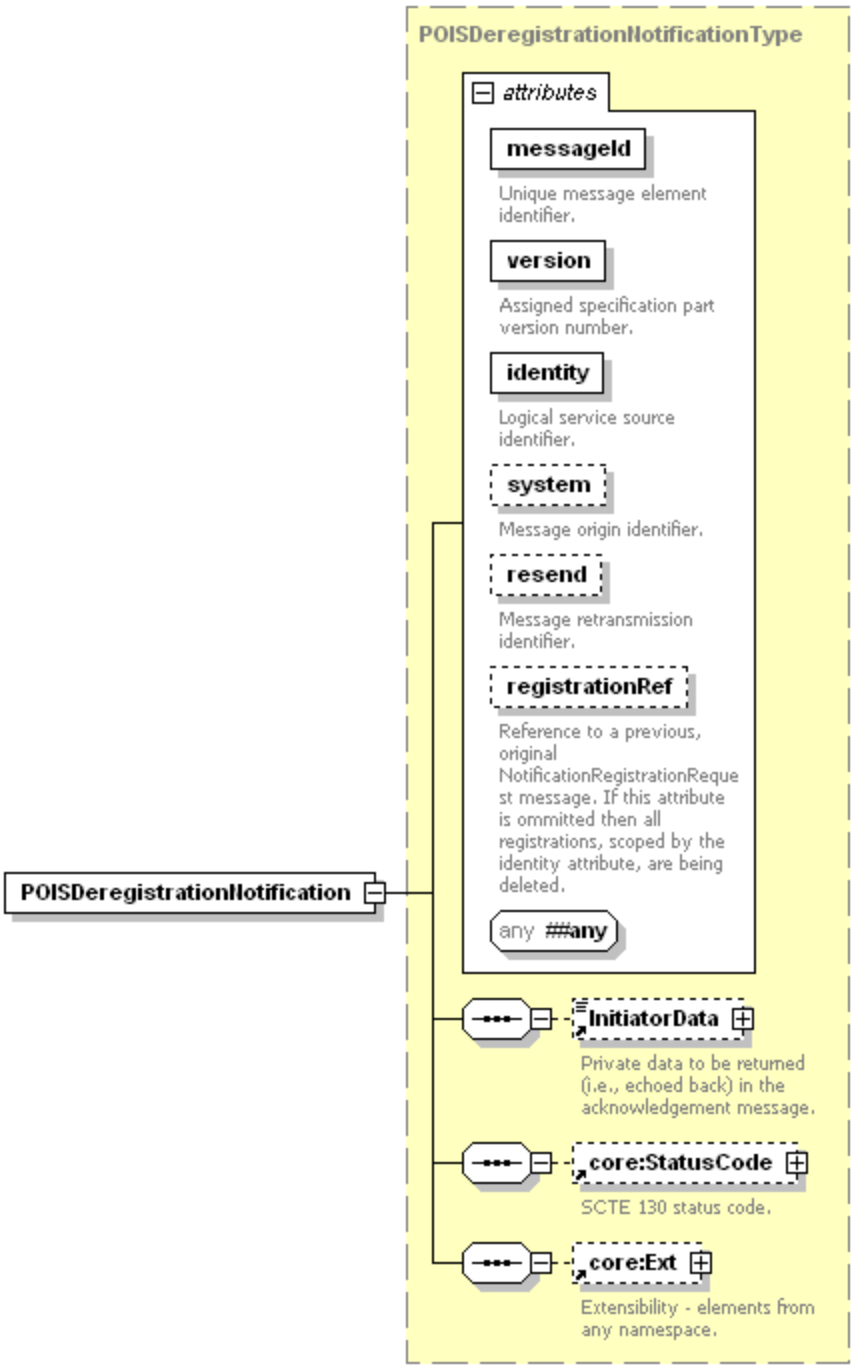

Figure 21 - POISDeregistrationNotification Message

This POIS interface adds only a single core:Ext to the gis:DeregistrationNotification defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.16.2. POISDeregistrationAcknowledgement Message

Upon receipt of a POISDeregistrationNotification message, a POIS client ***shall*** respond with a POISDeregistrationAcknowledgement message. This message informs a POIS that the notification message was received by the intended client and processed.

Figure 22 illustrates the POISDeregistrationAcknowledgement message's schema.

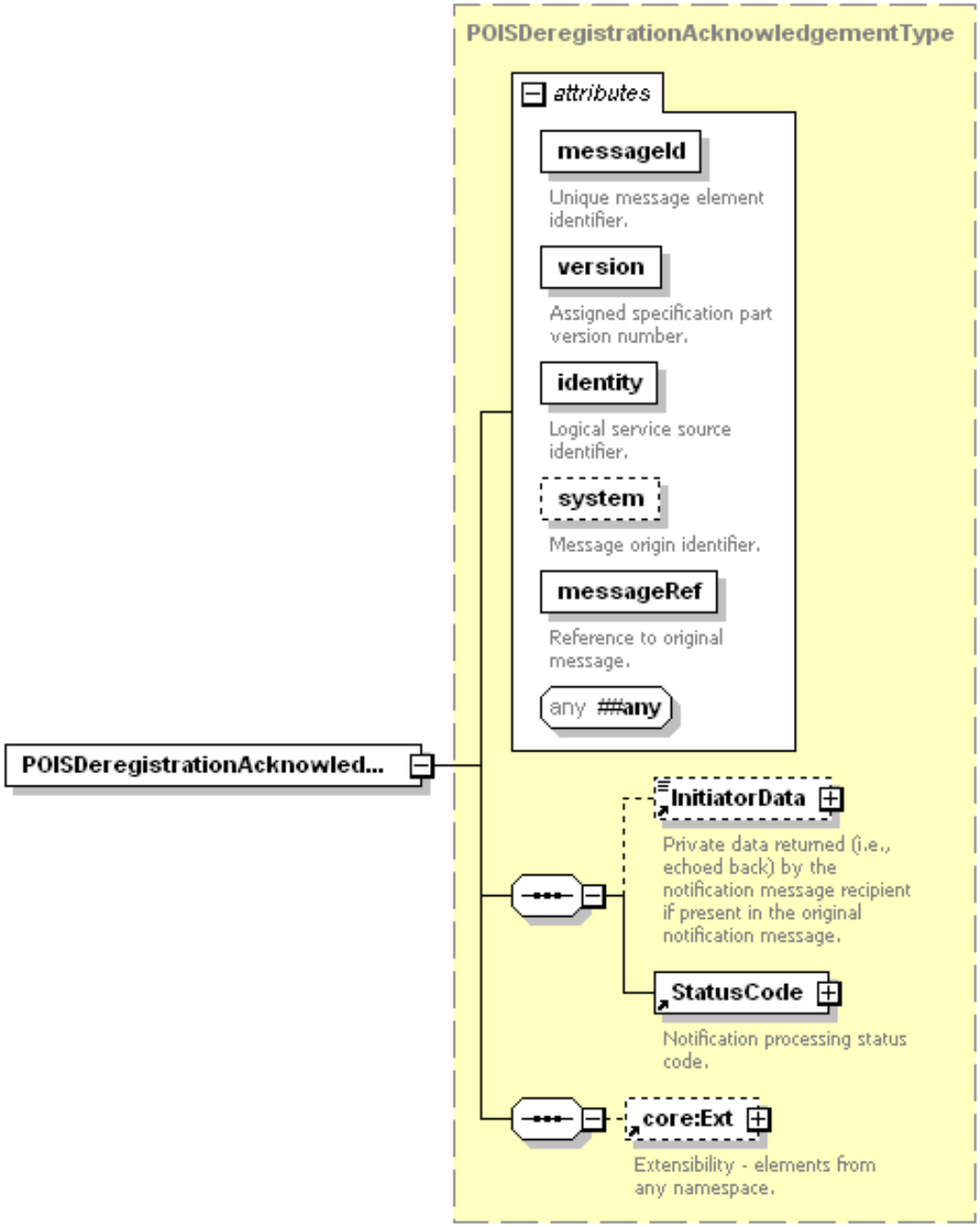

Figure 22 - POISDeregistrationAcknowledgement Message

This POIS interface adds only a single core:Ext to the gis:DeregistrationAcknowledgement defined by [SCTE 130-8]. See [SCTE 130-8] for additional information.

10.17. Service Check Support

A POIS implementation ***shall*** support the core:ServiceCheck message exchange, which includes the core:ServiceCheckRequest and core:ServiceCheckResponse messages as defined by [SCTE 130-2].

10.18. Service Status Support

A POIS implementation ***shall*** support the core:ServiceStatus message exchange, which includes the core:ServiceStatusNotification and core:ServiceStatusAcknowledgement messages as defined by [SCTE 130-2].

11. POIS Attribute Types

A POIS implementation ***shall*** be built using the General Information Service (GIS) interface defined by [SCTE 130-8]. The POIS defines no attributes in addition to those already defined by the General Information Service [SCTE 130-8].

12. POIS Elements

A POIS implementation ***shall*** be built using the General Information Service (GIS) interface defined by [SCTE 130-8]. The POIS defines no elements in addition to those already defined by the General Information Service [SCTE 130-8].

Appendix A - Examples (Informative)

The following examples use the SCTE 130 Part 3 Placement Opportunity Data Model (i.e., P3-PODM) as their example data model. These examples are for illustrative purposes only and *may* not accurately reflect the normative P3-PODM specification.

A.1 POISListSupportedFeaturesRequest and Response Message Examples

XML Example 1 illustrates a POIS client's request for the Placement Opportunity service's supported features.

```
<POISListSupportedFeaturesRequest messageId="consumer-342" system="POISClient" version="1.0"
identity="40DA910E-01AF-5050-C7EA-5D7B4A475311"/>
```

XML Example 1

XML Example 2 illustrates a POIS implementation's response to XML Example 1 query containing a data model and a single default endpoint handling all messaging.

```
<POISListSupportedFeaturesResponse messageId="pois-101" system="POISServer" version="1.0"
identity="40DA910E-01AF-5050-C7EA-5D7B4A475312" messageRef="consumer-342">
  <core:StatusCode class="0"/>
  <core:Callout>
    <core:Address type="SOAP1.1">http://10.250.30.22/POISServer</core:Address>
  </core:Callout>
  <gis:ServiceDataModelProfile>
    <gis:ServiceDataModel>http://www.scte.org/schemas/130-3/2013/adm/podm</gis:ServiceDataModel>
  </gis:ServiceDataModelProfile>
</POISListSupportedFeaturesResponse>
```

XML Example 2

A.2 POISListUniqueQualifiersRequest and Response Message Examples

XML Example 3 illustrates a POIS client's request for the unique qualifiers for a data model.

```
<POISListQualifiersRequest messageId="consumer-344" system="POISClient" version ="1.0"
identity="40DA910E-01AF-5050-C7EA-5D7B4A475311">
  <gis:ServiceDataModel>http://www.scte.org/schemas/130-3/2013/adm/podm</gis:ServiceDataModel>
</POISListQualifiersRequest>
```

XML Example 3

XML Example 4 illustrates a POIS implementation's response when it supports a basic query data model for the specified service data model.

```
<POISListQualifiersResponse messageId="pois-103" system="POISServer" version="1.0"
identity="40DA910E-01AF-5050-C7EA-5D7B4A475312" messageRef="consumer-344">
  <core:StatusCode class="0"/>
  <gis:BasicQueryDataModelDescription>
    <gis:ServiceDataModel>http://www.scte.org/schemas/130-3/2013/adm/podm</gis:ServiceDataModel>
    <gis:UniqueQualifierDeclaration uniqueQualifierName="P3-PODM">
      <gis:QualifierDeclaration name="poid"/>
    </gis:UniqueQualifierDeclaration>
    <gis:QualifierDescription name="poid" valueType="string"/>
  </gis:BasicQueryDataModelDescription>
</POISListQualifiersResponse>
```

XML Example 4

A.3 POISQueryRequest and Response Message Examples

XML Example 5 is a query for all Placement Opportunities in the position of preRoll or postRoll in a Video on Demand example.

```
<POISQueryRequest messageId="consumer-123" system="POISClient" identity="40DA910E-01AF-5050-C7EA-
5D7B4A475757" version="1.0">
    <gis:Query queryId="pois-98765" expandOutput="true" uniqueQualifierNameRef="P3-PODM">
    <gis:ServiceDataModel>"http://www.scte.org/schemas/130-
3/2013/adm/podm"</gis:ServiceDataModel>
    <gis:BasicQueryFilter>
      <gis:BasicFilterElement value="preRoll" name="position"/>
    </gis:BasicQueryFilter>
    <gis:BasicQueryFilter>
      <gis:BasicFilterElement value="postRoll" name="position"/>
    </gis:BasicQueryFilter>
  </gis:Query>
</POISQueryRequest>
```

XML Example 5

XML Example 6 is an example POIS implementation's response to the query.

```
<POISQueryResponse version="1." messageId="server-124" messageRef="consumer-123"
system="POISServer" identity="50DA910E-01AF-5050-C7EA-5D7B4A475759">
  <core:StatusCode class="0"/>
  <gis:QueryResult resultSetSize="2568" queryRef="pois-98765">
    <podm:PODMBasicQueryResult>
      <podm:PlacementOpportunityV2 serviceRegistrationRef="-" id="THS00000000000000009">
        <adm:Entertainment>
          <core:Content>
            <core:AssetRef providerID="tbs.com" assetID="TVN00000000000000009"/>
          </core:Content>
        </adm:Entertainment>
        <adm:OpportunityBinding opportunityType="preRoll" opportunitiesExpected="2"
opportunityNumber="1"/>
        <podm:OpportunityConstraintsV2>
          <core:AdType>30-Second-Spot</core:AdType>
          <core:Duration>PT30S</core:Duration>
        </podm:OpportunityConstraintsV2>
      </podm:PlacementOpportunityV2>
      <!-- -->
      <!-- 2566 more results not shown. -->
      <!-- -->
      <podm:PlacementOpportunityV2  serviceRegistrationRef="-" id="THS00000000000000010">
        <adm:Entertainment>
          <core:Content>
            <core:AssetRef providerID="tbs.com" assetID="TVN00000000000000009"/>
          </core:Content>
        </adm:Entertainment>
        <adm:OpportunityBinding opportunityType="postRoll" opportunitiesExpected="2"
opportunityNumber="2"/>
        <podm:OpportunityConstraintsV2>
          <core:AdType>60-Second-Spot</core:AdType>
          <core:Duration>PT60S</core:Duration>
        </podm:OpportunityConstraintsV2>
      </podm:PlacementOpportunityV2>
    </podm:PODMBasicQueryResult>
  </gis:QueryResult>
</POISQueryResponse>
```


XML Example 6

Appendix B - WSDL (Normative)

SCTE 130 Part 5 includes a separate WSDL document for the POIS and POIS client interfaces. See the WSDL document for details regarding the wsdl:portType definitions for the service endpoints along with the service definitions, binding types, and input/output parameter mappings. Table 1 specifies the normative WSDL XML namespace using the prefix 'wsdl'. SCTE 130 Part 7 provides additional WSDL specification details. See [SCTE 130-7] for more information. See the normative Part 5 WSDL document for all other details.