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Digital transmission of television signals

**Digital Program Insertion – Advertising Systems
Interfaces:
Part 6 – Subscriber Information Service**

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Recommendation ITU-T J.380.6 (ex J.dpi-asi-6)

Digital Program Insertion – Advertising Systems Interfaces: Part 6 – Subscriber Information Service

Summary

This document, ITU-T J.380.6, describes the Digital Program Insertion Advertising Systems Interfaces Subscriber Information Service (SIS) messaging and data type specification using XML, XML Namespaces, and XML Schema.

Keywords

None

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CONTENTS

1	Scope	10
2	References.....	10
3	Definitions	11
3.1	Terms defined elsewhere:.....	11
3.2	Terms defined in this Recommendation.....	11
4	Abbreviations and acronyms	11
5	Conventions	11
5.1	Notational Conventions	11
5.1.1	Normative XML Schema	11
5.1.2	Document Conventions	12
5.2	Processing Conventions.....	12
5.3	XML Namespaces	12
6	Subscriber Information Service Messages.....	12
6.1	@version Attribute	12
6.2	Request Base Message	12
6.2.1	Request Base Message Attributes (INFORMATIVE).....	13
6.2.2	Request Base Message Elements (INFORMATIVE).....	13
6.3	Response Base Message	13
6.3.1	Base Response Message Attributes (INFORMATIVE)	13
6.3.2	Base Response Message Elements (INFORMATIVE).....	13
6.4	Notification Base Message	14
6.4.1	Notification Base Message Attributes (INFORMATIVE).....	14
6.4.2	Notification Base Message Elements (INFORMATIVE).....	14
6.5	Acknowledgement Base Message	14
6.5.1	Acknowledgement Base Message Attributes (INFORMATIVE).....	14
6.5.2	Acknowledgement Base Message Elements (INFORMATIVE).....	15
6.6	SIS Message Exchange.....	15
6.7	SISListSupportedFeaturesRequest and SISListSupportedFeaturesResponse	16
6.7.1	SISListSupportedFeaturesRequest Message	16
6.7.2	SISListSupportedFeaturesResponse Message	17
6.8	SISListQualifiersRequest and SISListQualifiersResponse	19
6.8.1	SISListQualifiersRequest Message	19
6.8.2	SISListQualifiersResponse Message	20
6.9	SISListNotificationRegistrationRequest and SISListNotificationRegistrationResponse	21
6.9.1	SISListNotificationRegistrationRequest Message	22

6.9.2	SISListNotificationRegistrationResponse Message.....	22
6.10	SISNotificationRegistrationRequest and SISNotificationRegistrationResponse	24
6.10.1	SISNotificationRegistrationRequest Message	24
6.10.2	SISNotificationRegistrationResponse Message.....	26
6.11	SISNotification and SISNotificationAcknowledgement	27
6.11.1	SISNotification Message.....	27
6.11.2	SISNotificationAcknowledgement Message	28
6.12	SISCreateCursorRequest and SISCreateCursorRequest Response	29
6.12.1	SISCreateCursorRequest Message.....	29
6.12.2	SISCreateCursorResponse Message	30
6.13	SISCancelCursorRequest and SISCancelCursorResponse.....	31
6.13.1	SISCancelCursorRequest Message	32
6.13.2	SISCancelCursorResponse Message.....	32
6.14	SISQueryRequest and SISQueryResponse.....	33
6.14.1	SISQueryRequest Message	33
6.14.2	SISQueryResponse Message.....	34
6.15	SISNotificationDeregisterRequest and SISNotificationDeregisterResponse.....	35
6.15.1	SISNotificationDeregisterRequest Message	36
6.15.2	SISNotificationDeregisterResponse Message.....	36
6.16	SISDeregistrationNotification and SISDeregistrationAcknowledgement	37
6.16.1	SISDeregistrationNotification Message.....	38
6.16.2	SISDeregistrationAcknowledgement Message.....	39
6.17	Service Check Support	40
6.18	Service Status Support.....	40
7	SIS Element Details.....	40
8	SIS Attribute Types	40
	Annex A WSDL.....	40
	Appendix I Message Examples.....	41
I.1	SIS List Supported Features Request and Response	41
I.2	SIS List Qualifiers Request and Response	42
I.3	SIS Query Request and Response	45
I.4	SIS Notification Registration Request and Notification	48
	Bibliography.....	49

LIST OF FIGURES

Figure 1 - Potential SIS Data Sources.....	6
Figure 2 - Traditional (Non-Automated) Ad Sales	8

Figure 3 - Automated Ad Sales.....	9
Figure 4 - Automated and Targeted Ad Sales.....	10
Figure 5 - ITU-T J.380.6 Top Level Messages.....	15
Figure 6 - SISListSupportedFeaturesRequest Message XML Schema	17
Figure 7 - SISListSupportedFeaturesResponse Message XML Schema	18
Figure 8 - SISListQualifiersRequest Message XML Schema	20
Figure 9 - SISListQualifiersResponse Message XML Schema.....	21
Figure 10 - SISListNotificationRegistrationRequest Message XML Schema.....	22
Figure 11 - SISListNotificationRegistrationResponse Message XML Schema	23
Figure 12 - SISNotificationRegistrationRequest Message XML Schema.....	25
Figure 13 - SISNotificationRegistrationResponse Message XML Schema	27
Figure 14 - SISNotification Message XML Schema	28
Figure 15 - SISNotificationAcknowledgement Message XML Schema	29
Figure 16 - SISCreateCursorRequest Message XML Schema	30
Figure 17 - SISCreateCursorResponse Message XML Schema.....	31
Figure 18 - SISCancelCursorRequest Message XML Schema.....	32
Figure 19 - SISCancelCursorResponse Message XML Schema	33
Figure 20 - SISQueryRequest Message XML Schema.....	34
Figure 21 - SISQueryResponse Message XML Schema	35
Figure 22 - SISNotificationDeregisterRequest Message XML Schema.....	36
Figure 23 - SISNotificationDeregisterResponse Message XML Schema	37
Figure 24 - SISDeregistrationNotification Message XML Schema	38
Figure 25 - SISDeregistrationAcknowledgement Message XML Schema	39

LIST OF TABLES

Table 1 - XML Namespace Declarations.....	12
Table 2 - ITU-T J.380.6 Top Level Messages	16
Table 3 - core:Callout @message Values	19
Table 4 - NotificationRegistrationRequest core:Callout @message Values	25

LIST OF EXAMPLES

Example 1 - SISListSupportedFeaturesRequest Message	41
Example 2 - SISListSupportedFeaturesResponse Message.....	41
Example 3 - ListSupportedFeaturesResponse Message (multiple endpoints).....	42
Example 4 - SISListQualifiersRequest Message	42
Example 5 - SISListQualifiersResponse Message.....	43
Example 6 - SISListQualifiersRequest Message	44
Example 7 - SISListQualifiersResponse Message.....	44
Example 8 - SISQueryRequest Message	45
Example 9 - SISQueryResponse Message	45
Example 10 - SISQueryRequest Message	46
Example 11 - SISQueryResponse Message	46
Example 12 - SISQueryRequest Message	47
Example 13 - SISQueryResponse Message	47
Example 14 - SISNotificationRequest Message	48
Example 15 - SISNotification Message	49
Example 16 - SISNotification Message	49

Digital Program Insertion – Advertising Systems Interfaces: Part 6 – Subscriber Information Service

Introduction

A Subscriber Information Service (SIS) provides subscriber metadata query and notification services to its consumers. Using the interfaces defined by this Recommendation, logical service consumers may retrieve detailed information about subscribers known to an SIS implementation.

A Subscriber Information Service may provide information about subscribers distilled from a variety of data sources - including, but not limited to

An MSO Subscriber Management System (SMS) - that might contain information about geographical location and service tiers.

A Third Party supplied demographic database - that might contain information about subscriber interests, age group, income levels and family size.

A "Viewing History Database" - that might contain historical information about subscriber activity in viewing both Program content and Advertising content.

These potential data sources are illustrated in Figure 1.

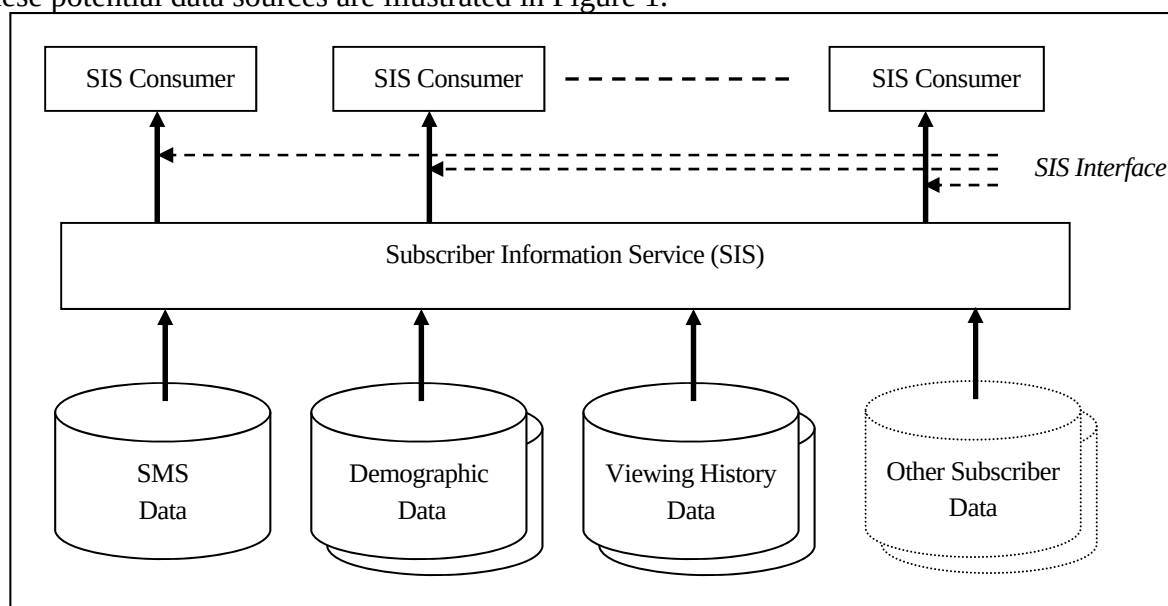


Figure 1 - Potential SIS Data Sources

The interface between an SIS implementation and its subscriber information data source(s) is outside the scope of this Recommendation.

A Subscriber Information Service responds to queries run against the data gathered from its associated subscriber information data source(s), and can issue notification messages when any changes occur that would affect the results of queries previously registered by consumers.

An SIS query can answer three kinds of questions.

1. It can retrieve a list of qualifiers supported by the SIS implementation. Each qualifier in the list has an associated characterization of its value type, and the value's upper bound and lower bound where applicable. This kind of query may be used by any consumer of an SIS implementation.

2. Using the basic query mechanism, it can return a list of unique qualifiers that identify subscribers whose characteristics conform to the basic query selection criteria. This kind of query might be used by a campaign management system when determining population counts to meet campaign requirements, though its use is not restricted to that purpose.
3. Given a unique qualifier, return a qualifier set for that subscriber. This kind of query may be used by an Ad Management System (ADM) or an Ad Decision System (ADS) when delivering targeted advertising, though its use is not restricted to that purpose.

Figure 2 provides one example of several possible subscriber information service implementations with respect to the J.380 logical services.

The SIS in this example is used to automate the publication of audience profile information to advertisers and to expedite rate card calculations. This is illustrated in Figure 2 below.

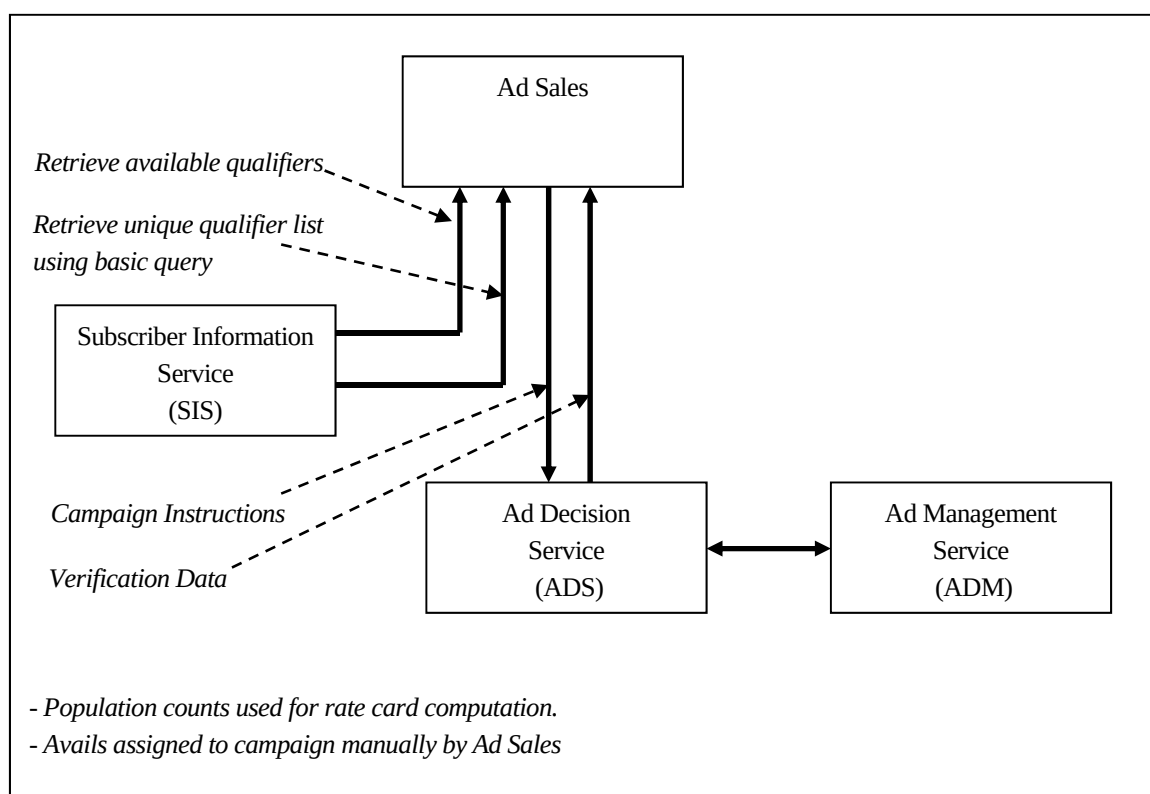


Figure 2 - Traditional (Non-Automated) Ad Sales

Figure 3 provides one example of several possible subscriber information service implementations with respect to the J.380 logical services. In this example the ITU-T J.380.5 "Placement Opportunity Information Service (POIS)" is included in the implementation.

The subscriber information service is employed to automate the publishing of audience profile information to the campaign management system and for rate card calculations. The campaign management system integrates SIS information to attach qualifier lists to placement opportunities and automatically assign placement opportunities to a campaign as needed to satisfy the campaign requirements. This is illustrated in Figure 3 below.

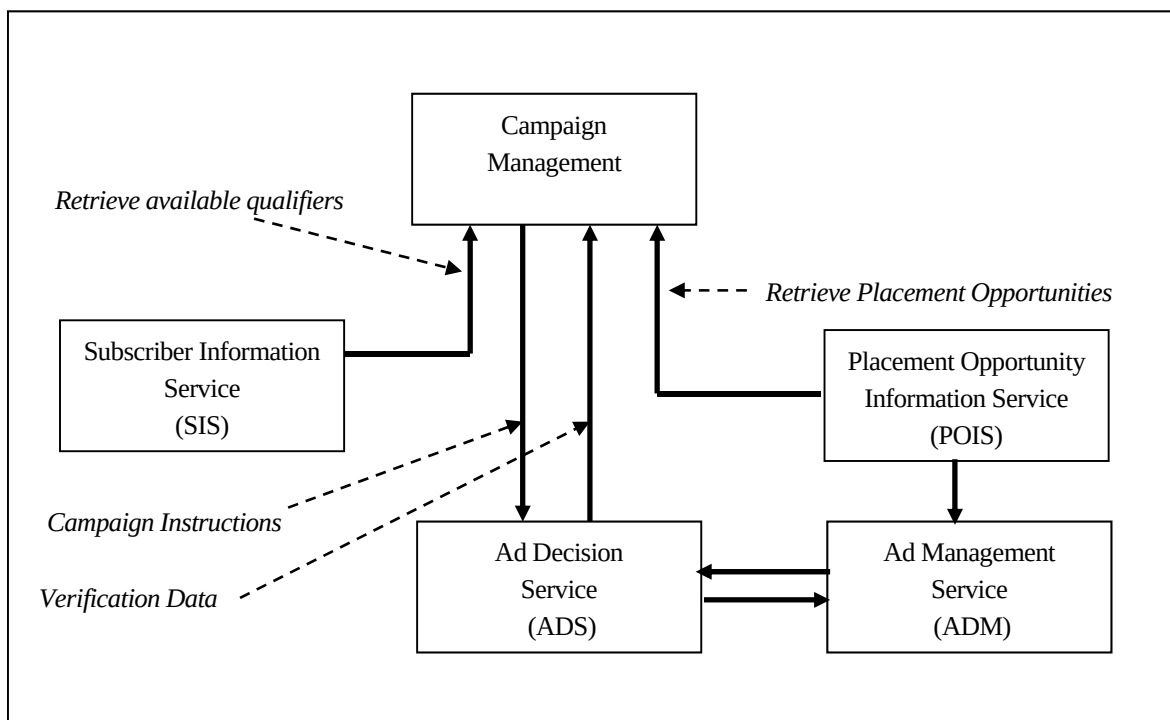


Figure 3 - Automated Ad Sales

In general there may be many SIS services accessed by multiple elements in an overall architecture. In the example shown in Figure 4, the campaign managers and corresponding ADS services access the SIS services to retrieve subscriber information for use in targeted ad placements. In addition the Placement Opportunity Information System accesses SIS services to qualify and allocate placement opportunities to specific campaign managers and the ADM accesses these SIS services when sessions are created to include target code information in placement requests.

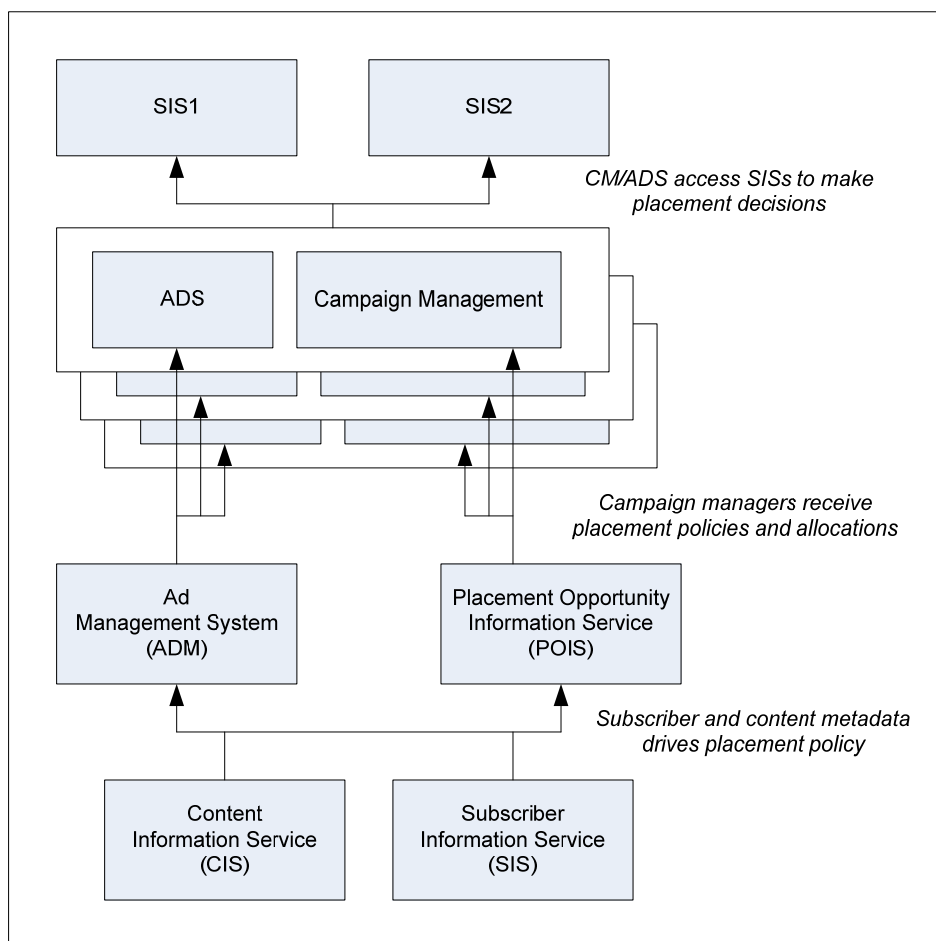


Figure 4 - Automated and Targeted Ad Sales

1 Scope

This document describes the Digital Program Insertion Advertising Systems Interfaces' SIS (Subscriber Information Service) messaging and data type specification using XML, XML Namespaces, and XML Schema.

2 References

The following ITU-T Recommendations and other references contain provisions, which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T J.380.2] ITU-T J.380.2 (2011), *Digital Program Insertion - Advertising Systems Interfaces: Part 2 - Core Data Elements*.
- [ITU-T J.380.7] ITU-T J.380.7 (2011), *Digital Program Insertion - Advertising Systems Interfaces: Part 7 - Message Transport*.
- [ITU-T J.380.8] ITU-T J.380.8 (2011), *Digital Program Insertion - Advertising Systems Interfaces: Part 8 - General Information Service*.

[SCTE 130-6 Schema] SCTE 130-6 schema file

[SCTE 130-6 SIS WSDL] SCTE 130-6 Subscriber Information Service (SIS) Web Services
Description Language file

3 Definitions

Throughout this Recommendation the terms below have specific meanings. Because some of the terms are defined by other ITU-T Recommendations having very specific technical meanings, the reader is referred to the original source for their definition. For terms defined by this Recommendation, brief definitions are given below.

3.1 Terms defined elsewhere:

This Recommendation uses the following terms defined elsewhere:

- All J.380.2 definitions are included herein. See [ITU-T J.380.2] for additional information.
- All J.380.7 definitions are included herein. See [ITU-T J.380.7] for additional information.
- All J.380.8 definitions are included herein. See [ITU-T J.380.8] for additional information.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 audience: the term "audience" is used to refer to a collection of one or more subscribers. A logical service that implements the SIS interface described in this document may often provide profile information about an audience. For example, a logical service may provide information about one or more audiences within a linear advertising zone rather than information about individual subscribers.

3.2.2 subscriber: in ITU-T J.380.6, the term subscriber is used to refer to one or more members of a viewing audience to whom advertising messages may be addressed. Depending on the transmission method and receiver technology employed, it may be possible to address an individual viewer, an entire household, or all households in a broadcast area such as a cable head-end, metropolitan market or some other aggregation.

4 Abbreviations and acronyms

This Recommendation does not use any particular abbreviations and acronyms.

5 Conventions

5.1 Notational Conventions

5.1.1 Normative XML Schema

ITU-T J.380.6 employs the same notational conventions as [ITU-T J.380.2]. Refer to [ITU-T J.380.2] for an explanation of notational conventions.

5.1.2 Document Conventions

ITU-T J.380.6 employs the same document conventions as [ITU-T J.380.2]. Refer to [ITU-T J.380.2] for an explanation of document conventions. For example, the XML schema illustration is explained there.

5.2 Processing Conventions

Unknown/Unrecognized/Unsupported XML Elements and Attributes.

See [ITU-T J.380.2] for information.

5.3 XML Namespaces

This Recommendation uses the 'sis' prefix, as described in Table 4, 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 Recommendation used herein.

Table 1 - XML Namespace Declarations

Prefix	Namespace	Description
core	http://www.scte.org/schemas/130-2/2008a/core	See [ITU-T J.380.2].
gis	http://www.scte.org/schemas/130-8/2010a/gis	See [ITU-T J.380.8].
sis	http://www.scte.org/schemas/130-6/2010/sis	This Recommendation.
wsdl	http://www.scte.org/wsdl/130-6/2010/sis	This Recommendation.
xsd	http://www.w3.org/2001/XMLSchema	See [W3C-XSD].

6 Subscriber Information Service Messages

The following topics are covered by [ITU-T J.380.2] and by [ITU-T J.380.8]. This Recommendation considers all aspects defined therein to be normative and applicable herein. See [ITU-T J.380.2] and [ITU-T J.380.8] for additional information.

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

The ITU-T J.380.6 message interface shall include the messages defined by [ITU-T J.380.2] and messages derived from the message types defined in [ITU-T J.380.8].

6.1 @version Attribute

For all ITU-T J.380.6 messages, the @version attribute shall be set to the value "1.0" for this document's revision.

6.2 Request Base Message

All ITU-T J.380.6 top level **request** messages are derived from the request message types defined in [ITU-T J.380.8] that are derived from the core:Msg_RequestBaseType abstract base message type. See [ITU-T J.380.2] for details on the attributes and elements contained in this base message type.

6.2.1 Request Base Message Attributes (INFORMATIVE)

@messageId [Required, core:messageIdAttrType] - The message identifier. See [ITU-T J.380.2] for additional information.

@version [Required, core:versionAttrType] - The message specification version. See [ITU-T J.380.2] for additional information.

@identity [Required, core:identityAttrType] - The origin logical service identifier. See [ITU-T J.380.2] for additional information.

@system [Optional, core:systemAttrType] - The message source identifier. See [ITU-T J.380.2] for additional information.

@resend [Optional, core:resendAttrType] - Message retransmission identifier. See [ITU-T J.380.2] for additional information.

@##any [Optional] - Any additional attributes from any namespace.

6.2.2 Request Base Message Elements (INFORMATIVE)

core:InitiatorData [Optional] - Private data that shall be in the response message. See [ITU-T J.380.2] for additional details on the core:InitiatorData element.

6.3 Response Base Message

All ITU-T J.380.6 top level **response** messages are derived from the response message types defined in [ITU-T J.380.8] that are derived from the core:Msg_ResponseBaseType abstract base message type. See [ITU-T J.380.2] for details on the attributes and elements contained in this base message type.

6.3.1 Base Response Message Attributes (INFORMATIVE)

@messageId [Required, core:messageIdAttrType] - The message identifier. See [ITU-T J.380.2] for additional information.

@version [Required, core:versionAttrType] - The message specification version. See [ITU-T J.380.2] for additional information.

@identity [Required, core:identityAttrType] - The origin logical service identifier. See [ITU-T J.380.2] for additional information.

@system [Optional, core:systemAttrType] - The message source identifier. See [ITU-T J.380.2] for additional information.

@messageRef [Required, core:messageRefAttrType] - A reference to the Request message element that initiated the message exchange. The value shall be the Request message's @messageId attribute value. See [ITU-T J.380.2] for additional information on the core:messageRefAttrType.

@##any [Optional] - Any additional attributes.

6.3.2 Base Response Message Elements (INFORMATIVE)

core:InitiatorData [Optional] - Private data from the Request message. See [ITU-T J.380.2] for additional details on the core:InitiatorData element.

core:StatusCode [Required] - A core:StatusCode element for communicating status information to the consumer. See [ITU-T J.380.2] for additional information.

6.4 Notification Base Message

All ITU-T J.380.6 top level **notification** messages are derived from the notification message types defined in [ITU-T J.380.8] that are derived from the core:Msg_NotificationBaseType abstract base message type. See [ITU-T J.380.2] for details on the attributes and elements contained in this base message type.

6.4.1 Notification Base Message Attributes (INFORMATIVE)

@messageId [Required, core:messageIdAttrType] - The message identifier. See [ITU-T J.380.2] for additional information.

@version [Required, core:versionAttrType] - The message specification version. See [ITU-T J.380.2] for additional information.

@identity [Required, core:identityAttrType] - The origin logical service identifier. See [ITU-T J.380.2] for additional information.

@system [Optional, core:systemAttrType] - The message source identifier. See [ITU-T J.380.2] for additional information.

@resend [Optional, core:resendAttrType] - Message retransmission identifier. See [ITU-T J.380.2] for additional information.

@type [Required, gis:contentNotificationTypeEnumeration] - The @type attribute is an enumeration that indicates the kind of changes contained in the Notification message. For information on the values allowed for the @type attribute see [ITU-T J.380.8].

@##any [Optional] - Any additional attributes from any namespace.

6.4.2 Notification Base Message Elements (INFORMATIVE)

core:InitiatorData [Optional] - Private data that shall be returned in the Acknowledgement message. See [ITU-T J.380.2] for additional details on the core:InitiatorData element.

6.5 Acknowledgement Base Message

All ITU-T J.380.6 top level *acknowledgement* messages are derived from the acknowledgement message types defined in [ITU-T J.380.8] that are derived from the core:Msg_AcknowledgementBaseType abstract base message type. See [ITU-T J.380.2] for details on the attributes and elements contained in this base message type.

6.5.1 Acknowledgement Base Message Attributes (INFORMATIVE)

@messageId [Required, core:messageIdAttrType] - The message identifier. See [ITU-T J.380.2] for additional information.

@version [Required, core:versionAttrType] - The message specification version. See [ITU-T J.380.2] for additional information.

@identity [Required, core:identityAttrType] - The origin logical service identifier. See [ITU-T J.380.2] for additional information.

@system [Optional, core:systemAttrType] - The message source identifier. See [ITU-T J.380.2] for additional information.

@messageRef [Required, core:messageRefAttrType] - A reference to the Notification message element that initiated the message exchange. The value shall be the Notification message's @messageId attribute value. See [ITU-T J.380.2] for additional information on the core:messageRefAttrType.

@##any [Optional] - Any additional attributes from any namespace.

6.5.2 Acknowledgement Base Message Elements (INFORMATIVE)

core:InitiatorData [Optional] - Private data from the Notification message. See [ITU-T J.380.2] for additional details on the core:InitiatorData element.

core:StatusCode [Required] - A core:StatusCode element for communicating status information to the consumer. See [ITU-T J.380.2] for additional information.

6.6 SIS Message Exchange

Figure 5 illustrates a typical message exchange between an SIS consumer and an SIS implementation and Table 2 provides a brief description of each SIS message.