

OpenCable™ Specifications

Stewardship and Fulfillment Interfaces

Service Measurement Summary Interface Specification

OC-SP-SaFI-SMSv3.0-120307

ISSUED

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Document Status Sheet

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Key to Document Status Codes:

| | |
|-------------------------|--|
| Work in Progress | An incomplete document, designed to guide discussion and generate feedback that may include several alternative requirements for consideration. |
| Draft | A document in specification format considered largely complete, but lacking review by Members and vendors. Drafts are susceptible to substantial change during the review process. |
| Issued | A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing. |
| Closed | A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs. |

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Contents

| | | |
|---------------------|--|-----------|
| 1 | SCOPE..... | 1 |
| 1.1 | Introduction and Purpose..... | 1 |
| 1.2 | Requirements..... | 1 |
| 2 | REFERENCES | 2 |
| 2.1 | Normative References..... | 2 |
| 2.2 | Informative References..... | 2 |
| 2.3 | Reference Acquisition..... | 3 |
| 3 | TERMS AND DEFINITIONS | 4 |
| 4 | ABBREVIATIONS AND ACRONYMS..... | 5 |
| 5 | OVERVIEW..... | 6 |
| 5.1 | General Context..... | 6 |
| 5.1.1 | <i>Reference Architecture</i> | 6 |
| 5.1.2 | <i>Interface Descriptions</i> | 6 |
| 6 | SERVICE MEASUREMENT INTERFACE REQUIREMENTS..... | 8 |
| 6.1 | Data Model..... | 8 |
| 6.1.1 | <i>InteractivePackage</i> | 8 |
| 6.1.2 | <i>InteractiveResponse</i> | 8 |
| 6.1.3 | <i>Measurement</i> | 8 |
| 6.1.4 | <i>ServiceMeasurement</i> | 9 |
| 6.1.5 | <i>ServiceMeasurementMessage</i> | 9 |
| 6.1.6 | <i>ServiceMeasurementMessageHeaderGroup</i> | 9 |
| 7 | SERVICE MEASUREMENT DATA MODEL SCHEMA (NORMATIVE) | 10 |
| 8 | SERVICE MEASUREMENT WEB SERVICES DESCRIPTION LANGUAGE (NORMATIVE) | 11 |
| APPENDIX I | XML EXAMPLE (INFORMATIVE) | 12 |
| APPENDIX II | HTML DATA MODEL REPRESENTATION (INFORMATIVE) | 13 |
| APPENDIX III | REVISION HISTORY | 14 |

Figures

| | |
|---|---|
| Figure 5–1 - Service Measurement platform | 6 |
|---|---|

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1 SCOPE

1.1 Introduction and Purpose

This document specifies a data model and transmission protocol for delivery of service measurement summary information from an MSO system to an external entity.

1.2 Requirements

Throughout this document, the words that are used to define the significance of particular requirements are capitalized. These words are:

| | |
|--------------|---|
| "SHALL" | This word 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 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 weighed 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 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. |

2 REFERENCES

2.1 Normative References

In order to claim compliance with this specification, it is necessary to conform to the following standards and other works as indicated, in addition to the other requirements of this specification. Notwithstanding, intellectual property rights may be required to use or implement such normative references.

- | | |
|----------------|--|
| [COM] | Common Data Types Specification, OC-SP-SaFI-COMv3.0-120307, March 7, 2012, Cable Television Laboratories, Inc. |
| [SaFI COM XSD] | OC-SP-SaFI-COMv3.0.0.xsd, March 7, 2012, Cable Television Laboratories, Inc. |
| [SMS WSDL] | OC-SP-SaFI-SMSv3.0.0.wsdl, March 7, 2012, Cable Television Laboratories, Inc. |
| [SMS XSD] | OC-SP-SaFI-SMSv3.0.0.xsd, March 7, 2012, Cable Television Laboratories, Inc., |
| [CONTENT 3.0] | CableLabs Content v3.0 Specification, MD-SP-CONTENTv3.0-I01-100812, August 12, 2010, Cable Television Laboratories, Inc. |

2.2 Informative References

This document uses the following informative references.

- | | |
|--------------|--|
| [CIP] | Campaign Information Package Specification, OC-SP-SaFI-CIPv3.0-120307, March 7, 2012, Cable Television Laboratories, Inc. |
| [IAF] | Interactive Application Fulfillment Summary Interface Specification, OC-SP-SaFI-IAFv3.0-120307, March 7, 2012, Cable Television Laboratories, Inc. |
| [IAM] | Interactive Application Messaging Specification, OC-SP-SaFI-IAMv3.0-120307, March 7, 2012, Cable Television Laboratories, Inc. |
| [SMSI EXMPL] | OC-SP-SaFI-SMSv3.0.0-example1.xml, March 7, 2012, Cable Television Laboratories, Inc. |
| [SMSI HTML] | OC-SP-SaFI-SMSv3.0.0.html, March 7, 2012, Cable Television Laboratories, Inc. |

2.3 Reference Acquisition

- Cable Television Laboratories, Inc., 858 Coal Creek Circle, Louisville, CO 80027;
Phone +1-303-661-9100; Fax +1-303-661-9199; <http://www.cablelabs.com/>
- CableLabs SaFI 3.0 schemas and WSDLs are available at the following URLs:
 - OC-SaFI-COM-3.0.0.xsd <http://www.cablelabs.com/namespaces/safi/xsd/com/v3.0/>
 - OC-SaFI-CIP-3.0.0.xsd <http://www.cablelabs.com/namespaces/safi/xsd/cip/v3.0/>
 - OC-SaFI-CIP-3.0.0.wsdl
 - OC-SaFI-IAM-3.0.0.xsd <http://www.cablelabs.com/namespaces/safi/xsd/iam/v3.0/>
 - OC-SaFI-IAF-3.0.0.xsd <http://www.cablelabs.com/namespaces/safi/xsd/ias/v3.0/>
 - OC-SaFI-IAF-3.0.0.wsdl
 - OC-SaFI-SMS-3.0.0.xsd <http://www.cablelabs.com/namespaces/safi/xsd/sms/v3.0/>
 - OC-SaFI-SMS-3.0.0.wsdl

3 TERMS AND DEFINITIONS

This specification uses the following terms:

| | |
|---|---|
| Affiliate | An operational entity that performs SaFI operations with one or more MSOs. |
| Bundle | A set of placements in a specific campaign, at an indicated MSO and syscode. The relationship between the placements that forms the basis of a bundle is beyond the scope of this specification. |
| Campaign | Provides a set of delivery plans and/or placement directions for one or more MSOs, specific systems within an MSO's footprint, as well as a set of Programmed Events within a system. A Campaign is negotiated, purchased, and managed as a single entity via campaign planning and management tools that are not in scope for the MSO interfaces. Within a Programmed Event, one or more products from predefined product families can be defined for placement by MSO delivery and/or processing. |
| Enhanced Program Sequence ID | An integer identifying a unique Package or Package Element within a specific Programmed Event. |
| GeoCode | Geographic Code: the geographic region that this service measurement message represents. The value in this element may indicate a ZIP Code, MSO syscode, or other encoded regional identifier. |
| MSO Order | The part of a Campaign Information Package (CIP) that falls within a specific MSO's advertising footprint. |
| Placement | A specific presentation of one or more advanced advertising assets at some advertising placement opportunity. In CIP, a data structure that supplies the definition of the conditions under which a placement may be executed. |
| Programmed Event ID | A globally-unique identifier for a Programmed Event. |
| Service Measurement | Information about the reach and usage of a campaign. |
| Stewardship and Fulfillment Interfaces | A collection of interfaces defined by CableLabs to support advanced services on multiple cable systems. |
| Syscode | A four-character, predefined code that represents a specific zone-level cable plant. |
| System Order | The part of an MSO Order that falls within a single zone-specific syscode. In simple cases, all the Programmed Events, Packages, and Package Elements of the Campaign will appear within each System Order; however, this may not be true due to site capabilities, or when targeting is applied. |

4 ABBREVIATIONS AND ACRONYMS

This specification uses the following abbreviations:

| | |
|---------------|---|
| AMB | Application Message Block |
| ARB | Application Report Block |
| CAAS | Common Advanced Advertising Systems |
| CIP | Campaign Information Package |
| EPSID | Enhanced Program Sequence ID |
| EpType | Enhancement Package Type |
| ETV | Enhanced Television |
| HTTP | Hypertext Transfer Protocol |
| HTTPS | Hypertext Transfer Protocol over Secure Sockets Layer (SSL) |
| PEID | Programmed Event ID |
| RFI | Request For Information |
| SaFI | Stewardship and Fulfillment Interfaces |
| SOAP | Simple Object Access Protocol; as of SOAP 1.2, this no longer represents an acronym |
| STB | Set-Top Box |
| WSDL | Web Services Description Language |

5 OVERVIEW

5.1 General Context

The service measurement summary interface provides a means for MSOs to export information about the execution of a campaign. This is typically an advertising campaign, and may include interactive components. Service measurement refers to information about the reach and usage of a campaign, such as how many viewers interacted with a particular interactive application.

5.1.1 Reference Architecture

The following diagram illustrates a systems view of the Service Measurement platform. This diagram represents an advertising-centric view of the platform; however, the Service Measurement platform is generalized such that applications unrelated to advertising can use the same platform.

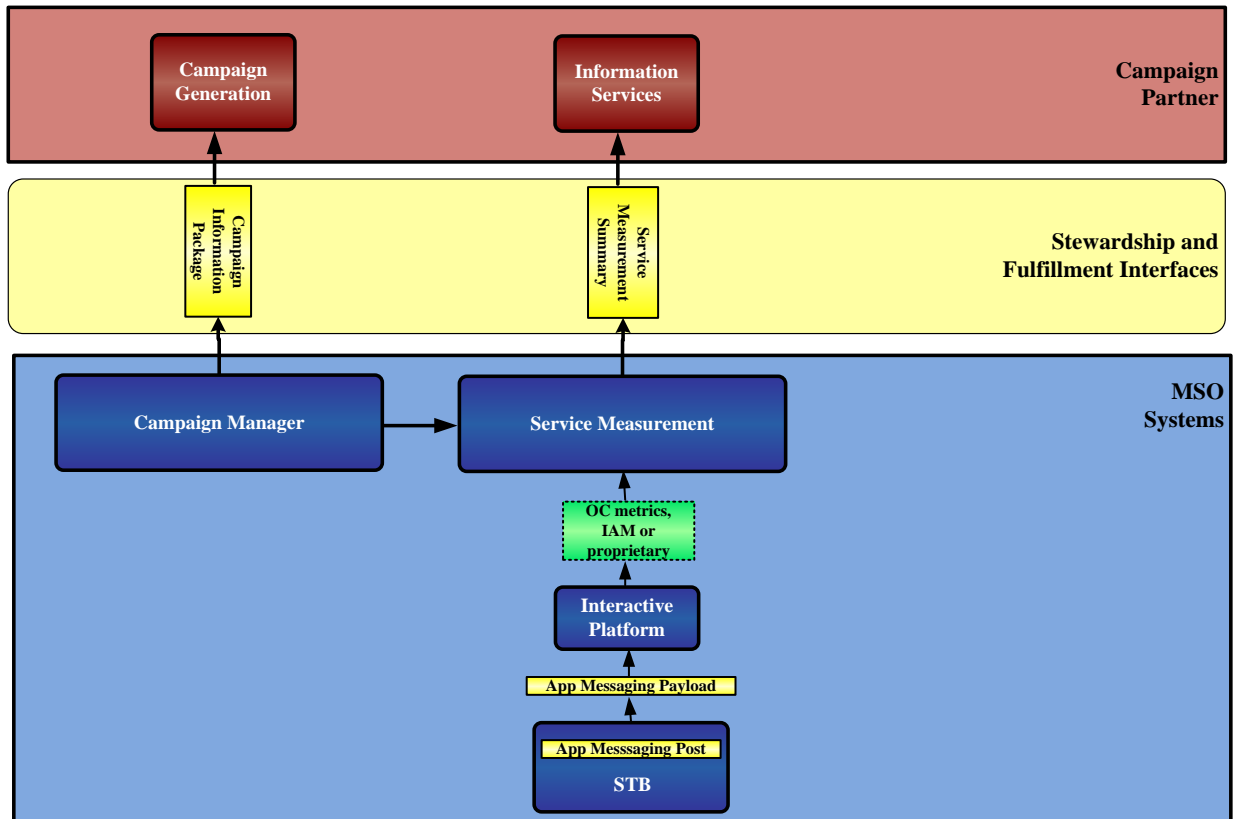


Figure 5-1 - Service Measurement platform

5.1.2 Interface Descriptions

As illustrated above, the Service Measurement architecture is composed of several components:

- Service Measurement Summary Interface. This document fully defines this interface; including the data model, content format, and transmission protocol supported by both MSO systems and partners.
- Interactive platform systems feed an MSO's Service Measurement capability, primarily by generating CableLabs Interactive Application Messages (IAM). Proprietary messaging systems can also be used.

- The Interactive Application Messaging interface defines how an application instantiates a message that includes a vote/poll or RFI response and application instrumentation messages that support Service Metrics. This interface is defined in [IAM].

Note also that the Campaign Information Package Interface [CIP] provides information to MSOs for resolution and routing of Service Measurement data.

6 SERVICE MEASUREMENT INTERFACE REQUIREMENTS

This section defines requirements for metrics and the interface between a metrics engine and a cable headend.

6.1 Data Model

The data model for service measurement messages is defined by the normative XML schema referenced in Section 7. This section supplies additional semantic definitions for components of that data model.

XML files conformant to this data model SHALL be generated by MSO systems and properly received by the web service at the primary URL supplied in the [CIP].

6.1.1 InteractivePackage

An element included in an InteractiveResponse object.

InteractivePackage contains the following data units:

- PEID (common:PeidType) is a required attribute associating this element with a campaign.
- EPSID (common:EpsidType) is a required attribute associating this element with a 'line item' within a campaign.
- EventID (common:EventIDType) is an optional attribute associating this element with a specific event generated by the application.
- ApplicationDefinitionAttributeGroup is optional, and carries application identification information and application data reference information (see [COM]).
- Result contains a Parameters attribute that represents the sum of responses of a given value. For instance, a vote application may present three choices: A, B, and C. the Parameters conveys the number of A, B, and C responses. Result also contains the TotalInterval attribute, which indicates the sum of intervals reported by all interactive application instances for this User Interface element. To calculate an average dwell time for the interactive element, divide TotalInterval by the number of interactive applications that were presented.

6.1.2 InteractiveResponse

A Measurement element within a ServiceMeasurementMessage may be of type InteractiveResponseType.

InteractiveResponseType contains the following data unit:

- InteractivePackage is zero or more objects that contain the sum of responses for a given interactive element. This is aggregated results and associated identifiers.

6.1.3 Measurement

An abstract element extended by all Service Measurement report types, currently InteractiveResponse, and includes two attributes:

- Process indicates processing rules. Messages with this attribute set to "additive" are to be added to previously-received messages for the same time period, geocode, and campaign identifiers (PEID and EPSID). Messages with this attribute set to "overwrite" are to replace previously received messages.
- Reporting indicates whether a message is a partial or incremental data set, or is final or completes a set. If this attribute is set to "final", partner processes can assume that no more messages will be received for the same time period, geocode, and campaign identifiers (PEID and EPSID). If this attribute is set to "partial", subsequent messages may be received.

6.1.4 ServiceMeasurement

Provides a container for a number of specific measurement items.

ServiceMeasurement contains the following data units:

- GeoCode represents the geographic region that this service measurement message represents. The value in this element may indicate a ZIP Code, MSO syscode, or other encoded regional identifier.
- Measurement contains zero or more measurement objects.

6.1.5 ServiceMeasurementMessage

This is the highest-level container for all Service Measurement communications, and contains the following data units:

- ServiceMeasurementMessageHeaderGroup contains data common to the entire message, including the schema version number and the time at which the message was sent.
- ServiceMeasurement Element contains the geocode for the region represented by this summary, and some number of Measurement Elements.

6.1.6 ServiceMeasurementMessageHeaderGroup

Contains data common to all Measurement reports, in the following data units:

- MinSchemaVersion is the lowest version of the SMS schema that will validate this message.
- MessageTime is the reference time used in each message.
- DerivativeID is a unique identifier that MAY be included to uniquely identify a service-measurement document.

7 SERVICE MEASUREMENT DATA MODEL SCHEMA (NORMATIVE)

The formal schema is found in [SMS XSD].

8 SERVICE MEASUREMENT WEB SERVICES DESCRIPTION LANGUAGE (NORMATIVE)

The formal WSDL definition is found in [SMS WSDL].

Appendix I XML Example (Informative)

Examples of SMSI data expressions can be found in [SMSI EXMPL].

Appendix II HTML Data Model Representation (Informative)

A browse-able, graphical representation of the SMSI data model can be found in [SMSI HTML].

Appendix III Revision History

SMS Version 3.0 is a major version, and as such does not require a deterministic EC history from the prior release. The following identifies the substantive changes from the last release, v2.0, January 31, 2011:

| Revision | Content |
|----------|---|
| 1. | Update release version number from 2.0 to 3.0 in documents, schemas, namespaces, and examples. |
| 2. | Update references to current revisions. |
| 3. | Editorial changes throughout. |
| 4. | Removed AdPlacementSummary, AdPlacementSessionData, and elements referenced solely by these messages. |
