comSCORE.

Implementation Scheme comScore StreamSense
MMS
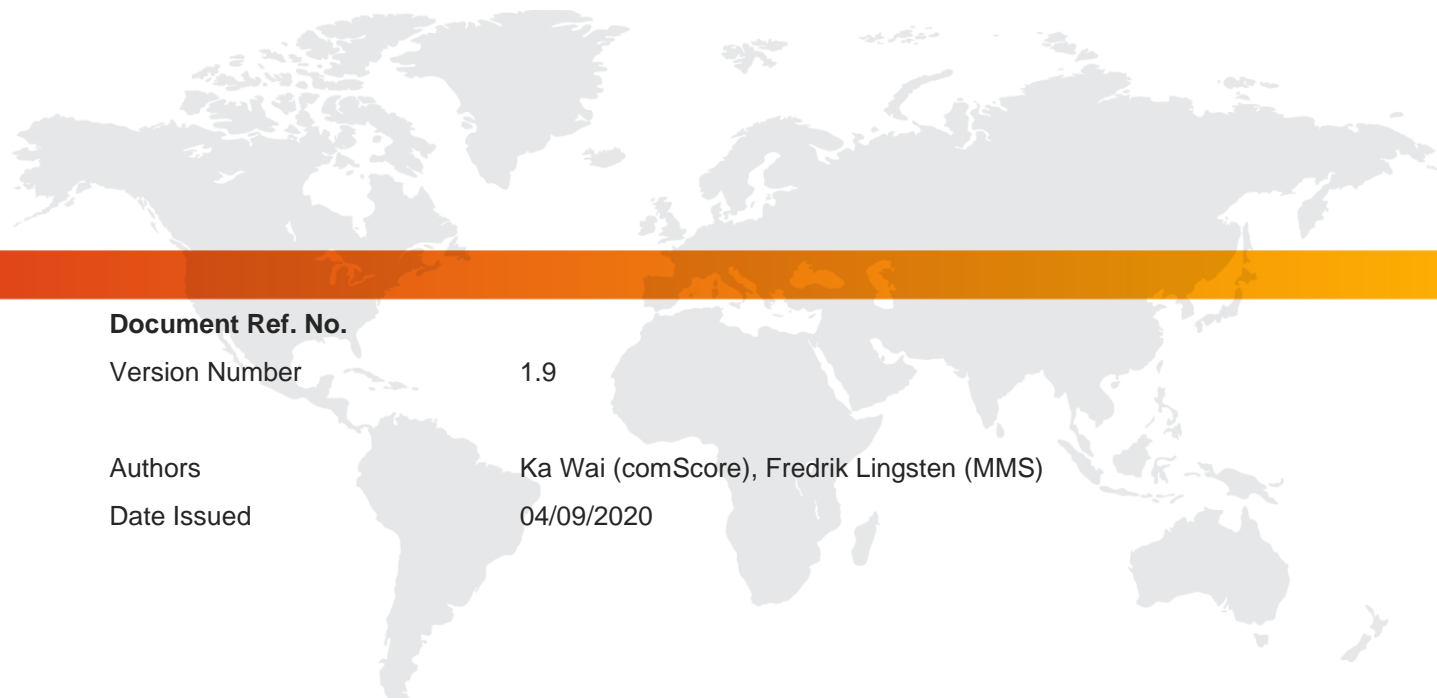
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1 Introduction

This is the comScore Implementation Scheme for StreamSense Digital Analytix. It supports you with the implementation of the StreamSense measuring codes in video players and mobile applications. With the statistics Digital Analytix supplies, you are able to analyze and improve your website and web application to achieve maximum results.

If you have questions about this document or need a change on this scheme, you can contact your Digital Analytix consultant / Technical consultant. You can reach him by phone or email, using the number or address mentioned in the next chapter.

Please be aware that the examples within this document are not meant as a copy paste solution. This document has been written from the perspective that the reader has knowledge of the implementation guide and therefor understands the terminology used in both documents.

Before you proceed please make sure that you have read and understood the general implementation guide for your intended platform.

2 Subscription details and contact information

2.1 Author(s) and Document version

Date	Version	changes	Author
18-02-2016	1.0	First version	Daniël Hindle
04-03-2016	1.1	Added MMS labels	Daniël Hindle
16-03-2016	1.2	Added test scenarios	Daniël Hindle
17-03-2016	1.3	Changes to test scenarios	Daniël Hindle
23-03-2016	1.4	Add device ID changes	Daniël Hindle
12-04-2016	1.5	Added detailed measurements to test scenarios	Daniël Hindle
23-12-2016	1.6	Added test scenarios and minor changes and corrections throughout	Jakob Saros
14-11-2017	1.7	Added ads for mms_auto	Fredrik Lingsten
06-03-2018	1.8	Added mms_values, ns_st_vo, validation process	Fredrik Lingsten
09-04-2020	1.9	Added mms_programmatic, mms_windowsize, mms_rand, mms_premium, mms_thirdparty, ns_st_an, test scenarios are available separately, mms_origin	Fredrik Lingsten

2.2 Contact Information

Name	Company	Role
Ka Wai kngo@comscore.com	Comscore	Senior Production Engineer

3 Implementation Scheme

This implementation scheme contains functional and technical specifications, which provide information to the developer on how to deploy the Digital Analytix tags.

3.1 Unsupported characters in StreamSense

Please refer to the Content Tagging Guidelines for information on unsupported characters which cannot be used. Labels values should be properly encoded or escaped during transmission. For instance, there have been issues noted when citation marks are used in label values.

3.2 Required generic labels

All generic labels should be added as "persistent labels" to the measurements. How to add persistent labels is described in the implementation guides specific for each platform. Platform specific SDK packages contain the implementation guides and are provided separately by a comScore Technical Consultant.

3.2.1 name (Page Name / countername)

Digital Analytix reporting uses page names to put events into a hierarchical structure that matches the structure of a website or application. An example of a page name is "news.sports.overview". The period character (.) in page names is used in Digital Analytix as a 'directory' separator that groups events. In the above example "news" is the topmost directory, "sports" is a subdirectory and "overview" describes the content. For StreamSense the "name" label is a required label and can be populated with the name of the current page/view the player is on.

```
name=overzicht.programma.detail
```

3.2.2 ns_site (dataset/site parent)

comScore's definition for datasets is "sites", sites are referred to by name and must be populated in every measurement also concerning StreamSense. The label that is used for the parent site is "ns_site" and this is the site where all data is stored from all entities. This entitles the client to report on traffic across entities. Values should always be lowercase, spaces should be replaced by a minus ("-") and no special characters should be used.

```
ns_site=parent
```

3.3 Notify Events

Advertisements are measured as separate clips but use the same StreamSense notify events as the main content.

Events that should be used for main content and advertisements are (please find more details in the implementation guide):

```
// [optional] when the media player starts buffering:
CSStreamSenseBuffer or StreamSenseEventType.BUFFER
// when playback is paused or user starts seeking during playback (i.e., the
player is at the old position):
CSStreamSensePlay or StreamSenseEventType.PLAY
// when playback starts or resumes or seeking is completed (i.e., the player
is at the new position):
CSStreamSensePause or StreamSenseEventType.PAUSE
// when playback ends:
CSStreamSenseEnd or StreamSenseEventType.END
```

Please be aware that streamsense has an internal state machine and it is only possible to set new playlists and clips while the player is in a stopped state, i.e., after notifying of an end and before notifying of a play. Please refer to the implementation guide for more information!

3.4 Advertisements

3.4.1 Titles

For advertisements please populate playlist (ns_st_pl), program title (ns_st_pr) and episode title (ns_st_ep) with the same value as you would for main content.

These labels should be populated as a clip label to the current advertisement setClip method:

```
ns_st_pr=program title
ns_st_ep=episode title
```

3.4.2 MMS advertisement labels

In addition to the main content MMS labels (more details appendix A) there are some specific MMS labels that are required. For MMS the following labels are mandatory and need to be added to all advertisement measurements:

Label name	Description	SDK method
mms_customadid	The unique id of the Ad (Film code). Begins with [S]1-9 or [5]1-9 use the sample value S1MYME202B, 51TRER1001, H1KYLE3032, E1UMBR1001	customLabels
ns_st_cl	The duration of the advertisement in milliseconds	customLabels
mms_campaignid	Set to the Campaign ID provided by the Ad Server	customLabels
mms_goalid	Set to the gid-parameter provided by the Ad Server	customLabels
mms_adid	Set to the internal Ad ID provided by the Ad Server	customLabels
mms_deviceid	Set a MD5 Hashed device ID (only mandatory for mobile apps)	customLabels
mms_programmatic	Is the ad bought programmatic? yes/no	customLabels
mms_thirdparty	Is the ad third party bought ? yes/no	customLabels
mms_values	send info of tv-channel for DAI, example origcode=29	customLabels
mms_origin	From where do the filmcode originate ? smartclip, YuMe, PlayAd, Google	customLabels

These labels need to be set for each advertisement as values can differ from ad to ad.

Regarding mms_origin above, MMS request you to send what vast customer was used i.e. "mms_origin=smartclip, yume, playad, google…" when a filmcode is either programmatic or thirdparty saled.

*depending on the platform JavaScript, iOS or Andrid, the Comscore method names may need to be prefixed with "set", "add" or "get" prefix.

3.4.2.1 Advertising Identifier

Please find below the requirements regarding the mms_deviceid. Please note that mms_deviceid is only mandatory for mobile apps. The label value is expected to contain a hashed version of the advertising identifier for iOS, IDFA (https://developer.apple.com/library/ios/documentation/LanguagesUtilities/Conceptual/iTunesConnect_Guide/Chapters/SubmittingTheApp.html#//apple_ref/doc/uid/TP40011225-CH33-SW8) or advertising ID for Android (https://support.google.com/googleplay/android-developer/answer/6048248?hl=en). MMS expects this value to be included in every measurement send for MMS. Please find below an example:

```
String DEVICE_ID = 'ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789';
//This is an example of identifier. This applies to any Identifier that can
be read through the API of the measurement libraries.
id = MD5(DEVICE_ID) = 92164b9325fd6f147cdb3778f2f09c31;
```

4 Validation process

Before any player is released a validation from comScore is needed in order to check that measurements are fired and received correctly. However, you are required to internally test the application before submitting the player to comScore. At minimum, all tests given in a separate document from MMS/Comscore are to be performed and you are encouraged to do more tests as needed. **It is the responsibility of the publisher to ensure that no faulty players are released!**

comScore validations are requested through Jira. Contact your Technical Consultant to get access to your Jira account.
Open a ticket for a « StreamSense Review« and please include the following information in your request. Make sure that the ticket is assigned to your Technical consultant.

- Player version number

- Instructions on where to find/download the player

- Which ad types are available pre/mid/postrolls?

- Changes made in the player since last validation

- Include any other information you believe is relevant

You are encouraged to provide testlogs corresponding to predefined testscenarios that can be given from your technnical consultant at Comscore.

Appendix A: MMS Labels

Content or Ad	Variables	Description	Example	SDK method	Requirement
Both	mms_clnr	Client number	mms_clnr=1001001	customLabel	mandatory
Both	mms_tid	unique titlecode of video	mms_tid=12345678	customLabel	mandatory
Both	mms_subsite	The player used to playback video	mms_subsite=tv4play.ios	customLabel	mandatory
Both	mms_auto	autostarted content	mms_auto=yes mms_auto=no	customLabel	mandatory
Both	ns_st_mp	Media player name	ns_st_mp=tv4_ios_ver123	setMediaPlayerName	mandatory
Both	ns_st_mv	Media player versio	Ns_st_mv=1.0.9	mediaPlayerVersion	mandatory
Both	ns_st_pr	Program title	ns_st_pr= fuskbyggarna	programTitle	mandatory
Both	ns_st_ep	Episode title	ns_st_ep= fuskbyggarna del 8_20140424	episodeTitle	mandatory
Ad	mms_customadid	The unique id of the Ad (Film code). Begins with [S]1-9, or [5]1-9, [E]1-9 or [H]1-9.	customadid=S1MYME202B customadid=51TRER1001 customadid=H1KYLE3032 customadid=E1UMBR1001	customLabels	mandatory
Ad	ns_st_ct	Predifined Comscore media type values	LIVE SHORT_FORM_ON_DEMAND LONG_FORM_ON_DEMAND Call classifyAsAudioStream(true) for audio-only streams	mediaType	mandatory
Both	ns_st_cl	Clip length	14000	length	mandatory
Both	ns_st_vo	Volume	0-1 percentage 1 being 100% volume	extended Analytics. notify	optional

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Ad	mms_campaignid	Set to the Campaign ID provided by the Ad Server. Only applicable for Ooyala.	N/A	customLables	optional
Ad	mms_goalid	Set to the Campaign Goal ID provided by the Ad Server. Only applicable for Ooyala.	N/A	customLabels	optional
Ad	mms_adid	Set to the internal Ad ID provided by the Ad Server	N/A	customLabels	optional
Both	mms_deviceid	Set to Apple IDFA or Google Advertising ID	N/A	customLabels	mandatory (mobile apps)
Both	mms_values	Possibility to send metadata	N/A	customLabels	mandatory for operators
Both	mms_windowsize	Size of player window	1920x1080	customLabels	optional
Content	mms_premium	Premium content	yes/ no	customLabels	optional
Ad	mms_thirdparty	Third party traffic	yes/no	customLabels	optional
Ad	mms_origin	Origin of filmcode	smartclip, playad, yume	customLabel	optional
Both	mms_rand	Census integration	00a8f1a33efda3831b1a40c91926fbd2a109bcfc0a	customLabels	optional
Ad	ns_st_an	Placement in break	1/5	customLabels	mandatory
Ad	mms_programmatic	Programmatic ad	yes/ no	customLabels	optional

*depending on the platform JavaScript, iOS or Andrid, the Comscore method names may need to be prefixed with "set", "add" or "get" prefix.