



***Society of Cable
Telecommunications
Engineers***

**ENGINEERING COMMITTEE
Digital Video Subcommittee**

AMERICAN NATIONAL STANDARD

ANSI/SCTE 130-10 2013

**Digital Program Insertion – Advertising Systems Interfaces
Part 10
Stream Restriction Data Model (SRDM)**

NOTICE

The Society of Cable Telecommunications Engineers (SCTE) Standards are intended to serve the public interest by providing specifications, test methods and procedures that promote uniformity of product, interchangeability and ultimately the long term reliability of broadband communications facilities. These documents shall not in any way preclude any member or non-member of SCTE from manufacturing or selling products not conforming to such documents, nor shall the existence of such standards preclude their voluntary use by those other than SCTE members, whether used domestically or internationally.

SCTE assumes no obligations or liability whatsoever to any party who may adopt the Standards. Such adopting party assumes all risks associated with adoption of these Standards, and accepts full responsibility for any damage and/or claims arising from the adoption of such Standards.

Attention is called to the possibility that implementation of this standard may require the use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. SCTE shall not be responsible for identifying patents for which a license may be required or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Patent holders who believe that they hold patents which are essential to the implementation of this standard have been requested to provide information about those patents and any related licensing terms and conditions. Any such declarations made before or after publication of this document are available on the SCTE web site at <http://www.scte.org>.

All Rights Reserved

© Society of Cable Telecommunications Engineers, Inc. 2013
140 Philips Road
Exton, PA 19341

TABLE OF CONTENTS

1.0	SCOPE	2
2.0	REFERENCES	2
2.1	Normative References	2
3.0	COMPLIANCE NOTATION.....	2
4.0	ABBREVIATIONS	3
5.0	INTRODUCTION	3
6.0	NOTATIONAL CONVENTIONS	5
6.1	Normative XML Schema.....	5
6.2	Document Conventions	6
7.0	PROCESSING CONVENTIONS	6
7.1	Unknown/Unrecognized/Unsupported XML Elements and Attributes	6
8.0	XML NAMESPACES	6
9.0	XML NAMESPACE DECLARATIONS	7
10.0	MESSAGES CONTAINING THE STREAM RESTRICTION DATA MODEL	7
10.1	@version Attribute	7
11.0	SRDM ELEMENT DETAILS.....	7
11.1	StreamRestrictionList	8
11.2	StreamRestriction	8
11.3	NPTRange	10
11.4	ScaleRange	11
APPENDIX 1. SRDM EXAMPLES (INFORMATIVE)		13
Disallow fast forward example		13
Disallow fast forward example with no NPT range example		13
Multiple NPT range example.....		13
Multiple stream restriction example		14

1.0 SCOPE

This document in conjunction with the SCTE 130 Part 10 Extensible Markup Language (XML) schema document (i.e. the XSD document) defines the XML data model expressing stream restrictions.

The Stream Restriction Data Model (SRDM) expresses the features, the attributes and the restrictions for a given context. That context may refer to a piece of entertainment content, an advertising asset, a VOD session or some other quantity of media. The application of the SRDM to a given context is out of scope for this document.

This revision of the SRDM is used to specify restrictions applied against play scale (i.e. the speed and direction of a particular asset). Any other form of stream restriction is out of scope for this revision of the SRDM.

2.0 REFERENCES

2.1 Normative References

None

3.0 COMPLIANCE NOTATION

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

	enhances the product, for example; another vendor may omit the same item.
--	---

4.0 ABBREVIATIONS

ADS – Ad Decision Service

CIS – Content Information Service

MSO – Multi Service Operator

NPT – Normal Play Time

POIS – Placement Opportunity Information Service

SCTE – Society of Cable and Telecommunications Engineers

SRDM – Stream Restriction Data Model

URI – Universal Resource Identifier

VOD – Video On Demand

XML – Extensible Markup Language

XSD – XML Schema Definition

5.0 INTRODUCTION

There are business use cases requiring media being consumed by a viewer to be controlled. A requirement to prevent a viewer from fast forwarding through an advertisement would be an example of such a use case. If such a requirement was made either as an MSO, a content provider or an advertiser business policy, there needs to be a way to describe the restriction such that it may be understood by the involved systems. For example, the restriction may be expressed as Placement Opportunity metadata from a Placement Opportunity Information Service (POIS/SCTE 130-5), or as part of PlacementResponse from an Ad Decision Service (ADS/SCTE 130-3), or as metadata served from a Content Information Service (CIS/SCTE 130-4). This appendix provides the definition of a stream restriction data model. Instances of these stream restrictions are intended to be used as part of an extension to existing schema definitions where the schemata employ an ‘Ext’ style extension mechanism. (See the Ext element herein for additional information.) This schema definition model allows for this document and

associated schema to be revised without having to revise any additional schemas that may carry this data model.

Throughout this document the following concepts are used and are useful for the reader to understand. Specific XML elements that embody these concepts are discussed later on in this document.

NPT range : The inclusive minimum and maximum permitted positions within a stream as denoted via normal play time (NPT) values.

Scale range : The inclusive minimum and maximum permitted scale values used for media play out. Scale values can be a discrete value or unbounded.

Stream restriction : An instruction which governs the permissible conditions by which media may be presented.

While there are many different ways in which a stream may be restricted, this particular version of the data model concerns itself with play scale restriction (the speed and direction of play) as it applies to periods of time within a piece of media. Play scale restrictions are expressed as ranges using an upper and lower bound rather than single scale values because of the difficulties arising when trying to map the values to semantic definitions such as fast forward, slow play, etc. For example, there may be a need to express a way to restrict all fast-forward play (any play that is in the forward direction faster than regular play speed). There are an infinite number of values that could be expressed (from 1.0 to infinity). Using an artificially high ceiling has the problem of imposing implementation limitations and using discrete values is not sufficient. If the only cases needing consideration were to restrict fast-forward, rewind, etc., then using enumerations could be one option. However, scenarios whereby a restriction is needed to disallow all fast-forward greater than twice the normal speed would mean creating additional enumerations. If the example is extrapolated to other restrictions, it becomes apparent that enumerations become inflexible and all parties using such enumerations would need to agree on the semantic definition of each value. Suffice to say, it becomes easier to express a play scale restriction as a range, so the syntax of the restriction may express a wide range of restrictions and the semantics don't impose as rigid a definition.

Scale ranges state what scale values are permitted. Each bound that makes up the range has a condition associated with it. The scale value may be tested to see if it is greater, or greater or equal to (using the values defined in the schema 'gt' and 'gteq' respectively) the lower bound, and less than, or less than or equal to (using the values defined in the schema 'lt' and 'lteq' respectively) the upper bound. Both bound tests may be set to "unbounded" indicating the boundary condition does not exist. The rationale behind this approach is to allow ranges to be specified as precise values rather than approximations.

Example scale ranges may include

Restriction	Condition
No fast forward	lowerbound=-INF, lowertest=unbounded,