

VideoGuard Headend Core

Stream Server XML Transport Interface: XTI - VGH Core

All VGH deployments

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1 Preface

1.1 Purpose of This Document

This document provides technical information for developers of the Stream Server and Traffic system who are developing components to realise a traffic system interface. The document may also be useful for system engineers for integration and support.

1.2 References

The following manuals/documents/specifications are referenced within this document. The latest issues of all the listed items apply unless a particular issue is specified:

Table 1 lists documents and other reference sources containing information that may be essential to understanding topics in this document.

Table 1 References

No.	Designation	Title
1.	W3C REC-xml-20001006	Extensible Markup Language (XML) 1.0 (Second Edition)
2.	REC-xpath-19991116	XML Path Language (XPath) Version 1.0
3.	IETF RFC 2616	HyperText Transfer Protocol - HTTP/1.1
4.	ETSI EN 300 486	Digital Video broadcasting(DVB): Specification for Service Information(SI) in DVB Systems
5.	ES.IC.SSRXML.MB001	Stream Server XML Traffic Interface

1.3 Terminology

The following table covers the terminology used in this document.

Table 2 Terminology

Term	Definition
CA	Conditional Access
DVB	Digital Video Broadcasting
EIT	Event Information Table
EPG	Electronic Program Guide

Term	Definition
IETF	Internet Engineering Task Force.
HTTP	Hypertext Transfer Protocol
MPEG	Moving Picture Experts Group
NVOD	Near Video On Demand
REC	Recommendation
RFC	Request For Comments
SI	Service Information
SSR	StreamServer
STB	Set Top Box
TCS	Traffic Control System
UCS	Universal Multiple-Octet Coded Character Set
UML	Universal Modelling Language
UTC	Universal Co-ordinated Time
UTF-8	UCS Transformation Format, 8-bit form
W3C	World Wide Web Consortium
XML	eXtensible Markup Language

2 Overview

This document defines a StreamServer (SSR) interface for Generic traffic systems. The purpose of this interface is to enable the traffic system to control the content of the SSR. This content needs continuous management to ensure that a full schedule is available to the downstream head-end components to enable EPG schedule generation, multiplex configuration and condition access (CA) control. The schedule must be provided sufficiently ahead of the time that it is needed at to ensure correct system functionality. For example, the traffic system might download schedules on a daily basis two weeks prior to the actual event air time, and might reload a part of the schedule closer to airtime to correct errors or adjust the schedule.

Document [5] describes the generic functionality, definitions and configuration of the XTI and should be read prior to and in conjunction with this document. Unless explicitly noted in this document, the functionality of all instructions will conform to that described in [5].

This ICD may be updated to provide minor additional functionality. Any new functionality will be optional to provide backwards compatibility to earlier systems based on this ICD.

3 Traffic Interface Definition

3.1 XML Namespace

The XML namespace that should be used to scope the XML definitions given in this ICD is:

```
xmlns = "http://www.uk.nds.com/SSR/XTI/Traffic/0010 "
xsi:schemaLocation=
    "http://www.uk.nds.com/SSR/XTI/Traffic/0010 0010.xsd"
```

NOTE

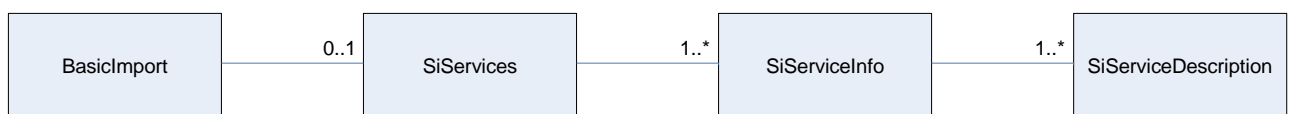
The traffic system should ensure that the XML namespace is configurable, as it may change with future releases of this ICD if functionality of the interface changes.

3.2 Import Document Tree Structure

This section describes the document structure to which the request documents should adhere. It is not strictly necessary to follow the data model given in this section – it is allowed to insert, update or delete any object at any point in the import document that the traffic system sees fit. It is recommended that the data model presented here is used, but there may be cases (e.g. when updating the value of a parameter) where operation on the objects, outside of this data model is useful.

Each of the following sections describes one of the highest level container elements and the elements which they contain. Figure 1 in section Appendix A shows the information as a full UML diagram.

3.2.1 SiServices



The **SiServices** instruction performs no operation on the SSR persistent store.

The **SiServiceInfo** instruction is used to:

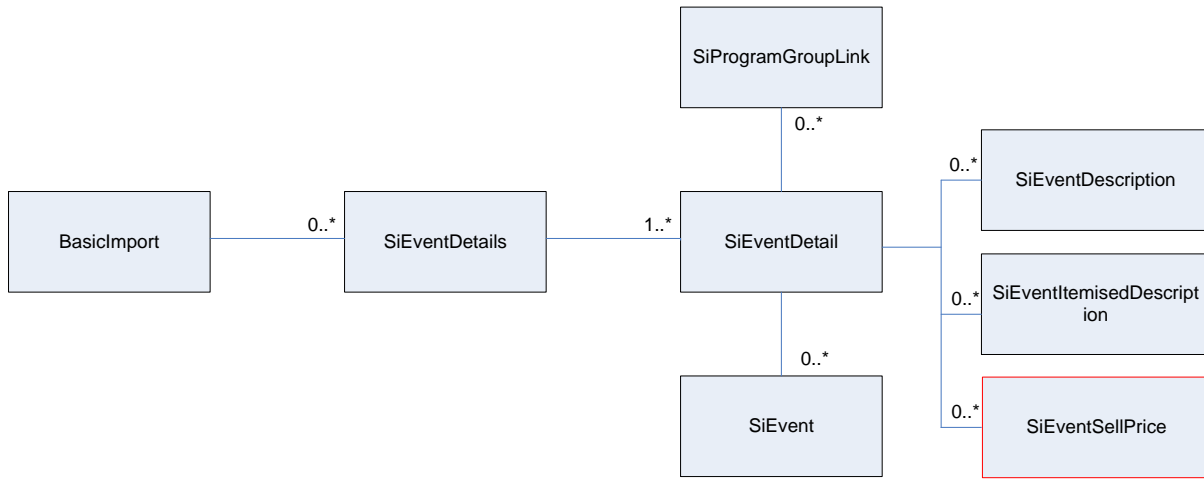
- update the service level viewerChannelNum

SiServiceInfo objects in the SSR represent a single SI Service.

SiServiceDescription instruction is used to:

- delete a service's description
- update a service's description
- insert a service's description

3.2.2 SiEventDetails



SiEventDetails instruction performs no operation on the SSR persistent store. It can also be provided as a child of a **SiEvent** instruction. The user would use **SiEventDetails** if for example they wanted to provide **SiEventDetail** objects before a referencing **SiEvent** object was provided which could be a case for NVOD events.

The **SiEventDetail** instruction is used to:

- delete an EPG event's details
- update an EPG event's details
- insert an EPG event's details

EPG event details are shared by one or more **SiEvent** objects. These define the characteristics of the EPG event common to all showings of the event.

The **SiEventDescription** instruction is used to:

- delete an EPG event's description
- update an EPG event's description
- insert an EPG event's description

EPG event descriptions are shared by one or more **SiEvent** objects. The descriptions of the EPG event are common to all showings of the event that share the same detailKey value. Descriptions can be provided in more than one language.

The **SiEventItemisedDescription** instruction is used to provide itemized description for an SiEvent. The label and description are common to all events that share the same detailKey value. Description can be provided in more than one language.

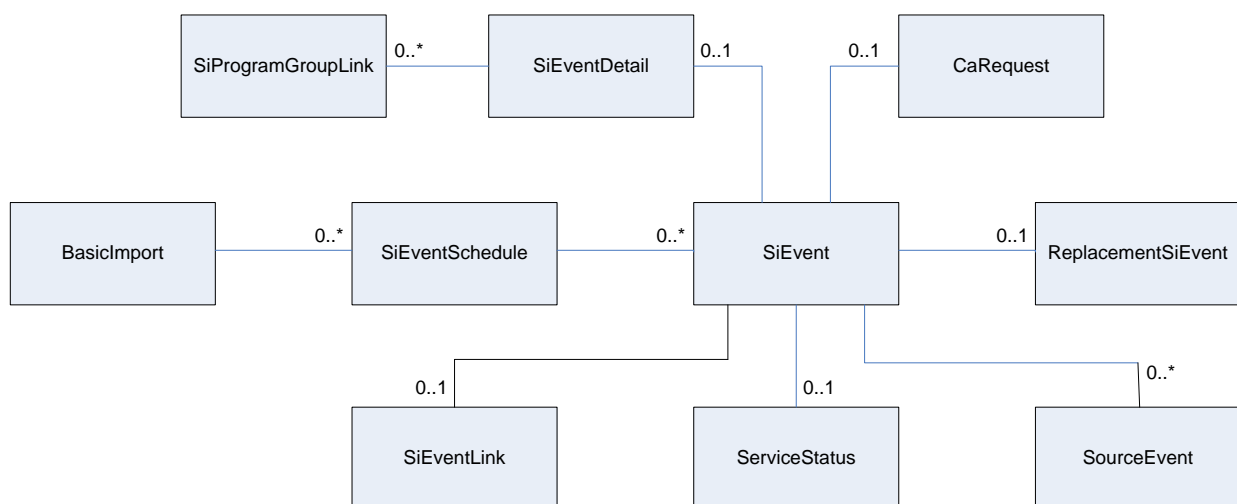
The **SiProgramGroupLink** object in the SSR represents the Series, Push and Pull groups to which an event belongs. Each program in a Group is given the same groupKey, and the events associated with the program need not be on the same service.

The **SiProgramGroupLink** is used to:

- delete a program from a Group.
- update a link in a Group.
- insert a program in a Group.

The **SiEventSellPrice** instruction is used to provide the default display price for a single event or for the reference event of a set of time-shifted services. A price may be provided in multiple currencies.

3.2.3 SiEventSchedule



The **SiEventSchedule** container instruction provides the ability to delete a range of EPG schedule events.

The **SiEvent** instruction is used to perform one (and only one) of the following:

- insert a single EPG schedule event
- update a single EPG schedule event
- delete a single EPG schedule event

The **SiEvent** objects in the SSR represent a single EPG event on a given service for a specific nominal start date and time.

The **CaRequest** instruction is used to change the service scrambling for this event. See also **CaSchedule**.

The **ReplacementSiEvent** instruction is used to perform one of the following:

- add a replacement event to an SiEvent
- update a replacement event.
- delete a replacement event.

The **ReplacementSiEvent** object in the SSR represents a replacement service associated with this EPG event. This replacement service is offered to the viewer when CA prevents viewing this event.

IMPORTANT!

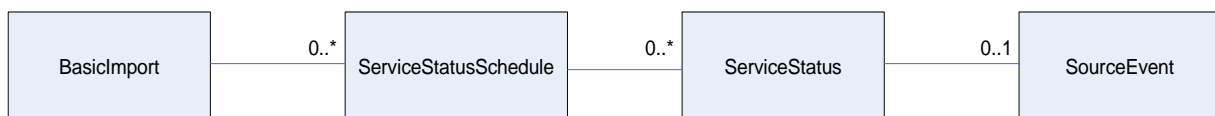
SiEventLink is deprecated and should be replaced with **SiProgramGroupLink** in new projects. See also **SiEventDetails**.

The **SiEventLink** object in the SSR represents the single EPG event series to which an event belongs. When recording an event, if the event is part of a series the viewer is offered the ability to record all events belonging to the same series. Each event in a series will be given the same **seriesKey**, and those events need not be on the same service.

The **SiEventLink** instruction is used to:

- delete an event from an EPG event series
- update a link in an EPG event series
- insert an event in an EPG event series

3.2.4 ServiceStatusSchedule



The **ServiceStatusSchedule** container instruction provide the ability to delete a range of **serviceStatus** objects.

The **ServiceStatus** instruction is used to:

- insert a **serviceStatus**
- update a **serviceStatus**

- delete a serviceStatus

A **ServiceStatus** instruction allows the definition of the service 'running status'. A 'runningStatus' of 'Running' means that the service is currently broadcasting and can be accessed by the consumer. The service definition in this case will exist in both SI (SDT) and PSI (PAT, PMT). A 'runningStatus' of 'Not running' will however remove the service definition from PSI, hence stopping the service from broadcasting. The service definition will still appear in SI indicating that the service may broadcast again.

As with other schedulable events, a serviceStatus database object requires activation. The sourceEvent used for this purpose may be defined as a child of the serviceStatus object or may already be defined e.g. a sourceEvent may already be defined if synchronisation across schedules is required.

A **ServiceStatus** instruction can exist as a child of **ServiceStatusSchedule** or of a **SiEvent** instruction.

3.2.5 SourceEventSchedule



The **SourceEventSchedule** container instruction provides the ability to delete a range of source events.

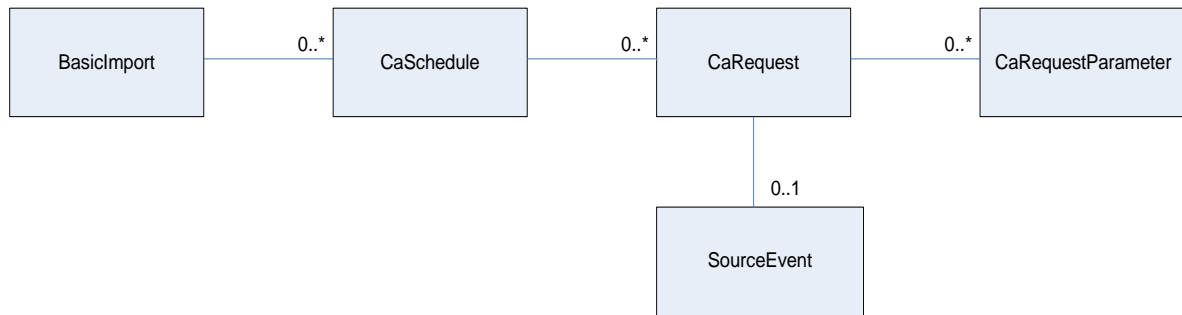
The **SourceEvent** instruction is used to:

- delete a source event
- update a source event
- insert a source event

A playout source event is representative of an automation event, or a chronological event. The source event is used to activate, and synchronise, other types of event e.g. EPG, CA.

The **SourceEvent** instruction can be a child of the **SourceEventSchedule** instruction, or of any other instruction that requires activation. A **SourceEvent** instruction need only be created if event triggering is required i.e. if it is not adequate to allow a schedule to run to it's own clock.

3.2.6 CaSchedule



The **CaSchedule** container instruction provide the ability to delete a range of CA Requests.

The **CaRequest** container instruction is used to:

- delete/clear a CA Request
- update a CA Request
- insert a CA Request

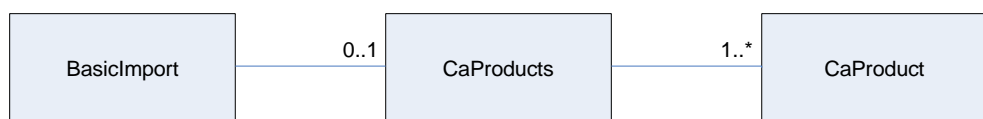
A CA Request is an instruction to SSR to create or instantiate a CA Event using a CA Template on a channel and activated at a specified time. A CA Template provides a predefined CA solution for a specific scenario but can allow for specific parts of the solution to parameterised.

The **CaRequestParameter** instruction is used to:

- delete a CA Request parameter
- update a CA Request parameter
- insert a CA request parameter

A **CaRequestParameter** instruction is used to provide a value for a CA Template parameter.

3.2.7 CaProducts



The **CaProducts** instruction performs no operation on the SSR persistent store.

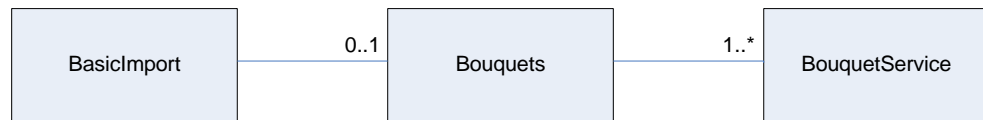
The **CaProduct** instruction is used to:

- delete a CA Product
- update a CA Product

- insert a CA Product

A CA Product is used by a traffic system to identify a CA Service that will eventually be conveyed to the STB in order for the subscriber to access content.

3.2.8 Bouquets

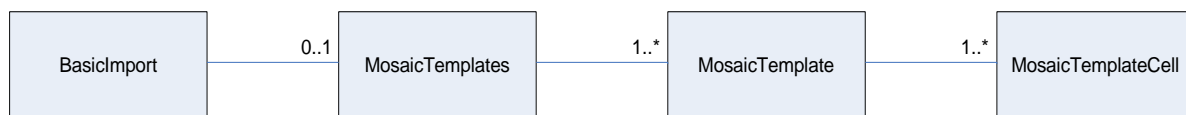


The **Bouquets** instruction performs no operation on the SSR persistent store.

The **BouquetService** instruction is used to:

- delete a service from a bouquet
- update the viewer channel number and surf order of a service within a bouquet
- add a service to a bouquet and set viewer channel number and surf order.

3.2.9 MosaicTemplates



The **MosaicTemplates** instruction performs no operation on the SSR persistent store.

The **MosaicTemplate** instruction is used to:

- delete a mosaic template
- update a mosaic template
- insert a mosaic template

A mosaic template describes the shape and link structure of a mosaic.

The **MosaicTemplateCell** instruction is used to:

- delete a mosaic template cell
- update a mosaic template cell
- insert a mosaic template cell

3.2.10 MosaicLinks



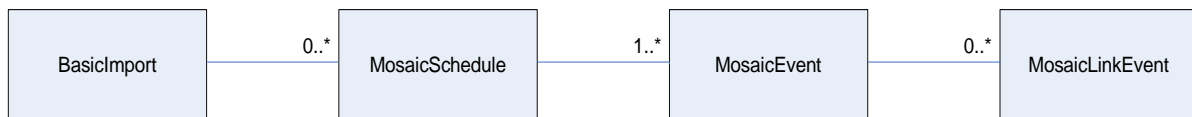
The **MosaicLinks** instruction performs no operation on the SSR persistent store.

The **MosaicLink** instruction is used to:

- delete a mosaic link
- update a mosaic link
- insert a mosaic link

A mosaic link describes a link pointer for a cell of a mosaic.

3.2.11 MosaicSchedule



The **MosaicSchedule** container instruction provides the ability to delete a range of mosaic events.

The **MosaicEvent** instruction is used to:

- delete a mosaic event
- update a mosaic event
- insert a mosaic event

A mosaic event applies a mosaic template to a mosaic service at a particular point in time.

3.2.12 MosaicLinkSchedule



The **MosaicSchedule** container instruction provides the ability to delete a range of mosaic links.

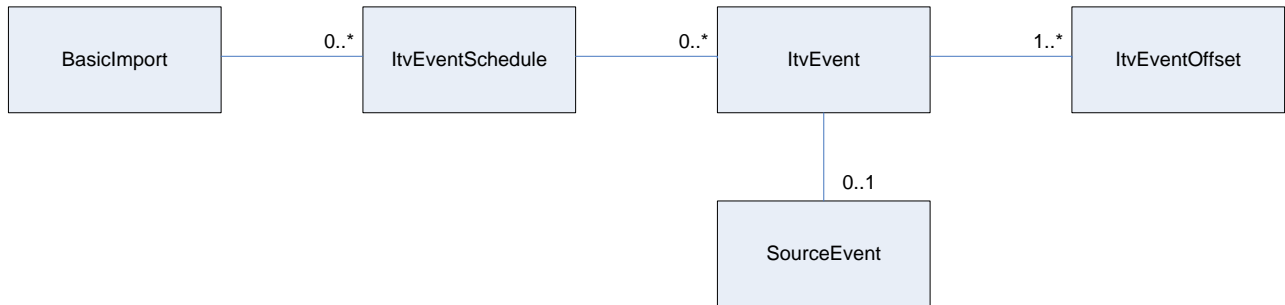
The **MosaicLinkEvent** instruction is used to:

- delete a mosaic link
- update a mosaic link

- insert a mosaic link

A mosaic link event applies a particular link to a mosaic cell at a particular point in time.

3.2.13 ItvEventSchedule



The **ItvEventSchedule** container instruction provide the ability to delete a range of ITV events.

The ItvEvent container instruction performs no operation on the SSR persistent store. Typically this element is used to set parameters that are common to a number of ItvEventOffset Instructions.

The ItvEventOffset instruction is used to:

- delete an ITV event
- update an ITV event
- insert an ITV event

Each **ItvEventOffset** instruction provides a configuration specification for an interactive episode at a trigger point. An itvId encapsulates the objects (files) required for an application. The parameter activationState determines the state of the invite. If the ItvId encapsulates both, the activationState will indicate the state of the invite at the STB. If no activationState is specified then no application invite will be broadcast.

3.3 Import Alternate Parameters

Table 3 Alternate Parameter List lists the parameters that can be replaced and their replacement

Table 3 Alternate Parameter List

descriptive identifier	SSR object key identifier
siService	siServiceId

descriptive identifier	SSR object key identifier
playoutSource	playoutSourceId
activationSource	activationSourceId
parentalRating	parentalRatingId
dataSource	dataSourceId
replacementSiService	replacementSiServiceId
caTemplate	caTemplateId
bouquet	bouquetId
refSiService	refSiServiceId
linkSiService	linkSiServiceId
aliasSiService	aliasSiServiceId
<u>currency</u>	<u>currencyId</u>

3.4 Export Request Document Tree Structure

The UML diagram describing the XML export request document structure can be found in section Appendix B, Figure 2 Export Document Structure.

3.4.1 SiServiceList Instruction

The **SiServiceList** instruction is used to:

- request an export of all siServices
- request a filtered export of siServices.

3.4.2 SourceChannelList Instruction

The **SourceChannelList** instruction is used to:

- request an export all SourceChannels
- request a filtered export of SourceChannels.

3.4.3 TransportConfigurationList Instruction

The **TransportConfigurationList** instruction is used to:

- request an export all transport stream configurations
- request a filtered export of transport stream configurations.

3.4.4 ServiceConfigurationList Instruction

The **ServiceConfigurationList** instruction is used to:

- request an export all ServiceConfigurations
- request a filtered export of ServiceConfigurations.

3.4.5 BouquetList Instruction

The **BouquetList** instruction is used to:

- request an export all bouquets.
- request a filtered export of bouquets.

3.4.6 CaTemplateList Instruction

The **CaTemplateList** instruction is used to:

- request an export all CaTemplates
- request a filtered export of CaTemplates.

3.4.7 CaTCategoryList Instruction

The **CaTCategoryList** instruction is used to:

- request an export all CA Template categories and their sub-categories
- request a filtered export of CA Template categories and their sub-categories

3.4.8 CaProductList Instruction

The **CaProductList** instruction is used to:

- request an export all CA Products
- request a filtered export of CA Products.

3.4.9 CaCriterionList Instruction

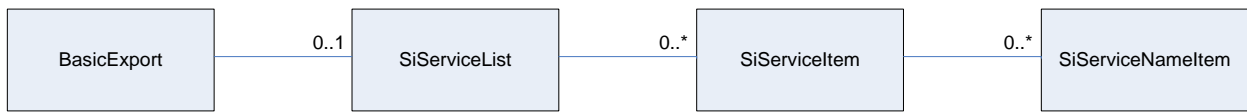
The **CaCriterionList** instruction is used to:

- request an export of CA Criterion definitions.

3.5 Export Response Document Tree Structure

The UML diagram describing the XML export document structure can be found in section Appendix B, Figure 2 Export Document Structure.

3.5.1 SiServiceList Elements



The export will be a **SiServiceList** element containing a number of **SiServiceItem** elements.

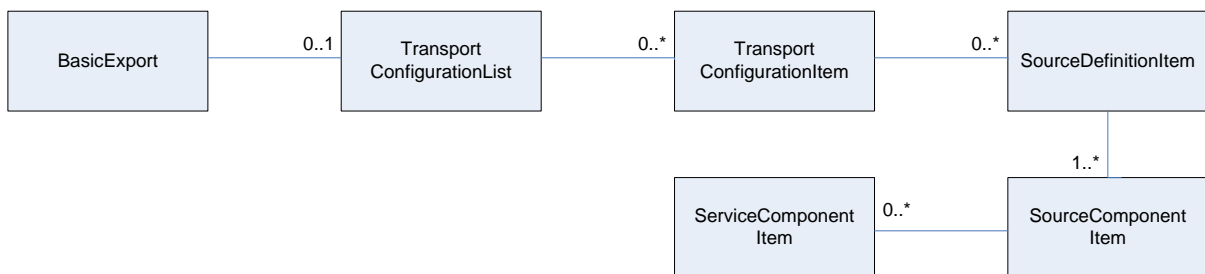
The **SiServiceItem** can have many **SiServiceNameItem** instructions.

3.5.2 SourceChannelList Elements



The export will be a **SourceChannelList** element containing a number of **SourceChannelItem** elements.

3.5.3 TransportConfigurationList Elements



The export will be a **TransportConfigurationList** element containing a number of **TransportConfigurationItem** elements.

Each **TransportConfigurationItem** element will include information as to the components that can be included on the transport stream.

The **TransportConfigurationItem** element can have many **SourceDefinitionItems**.

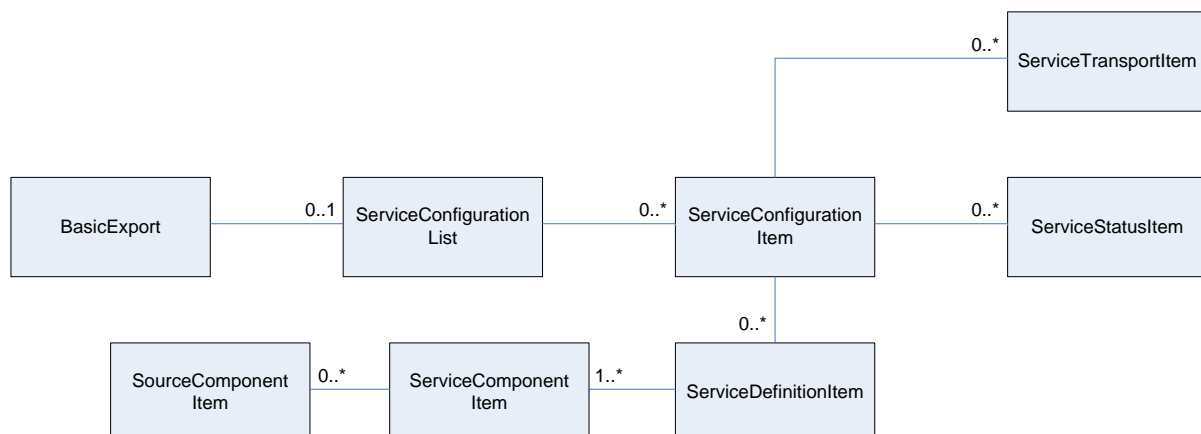
A **SourceDefinitionItem** element can have many **SourceComponentItems**. A **SourceComponentItem** identifies the component type e.g. Audio and an enumeration value (componentNumber) within the componentType

Note Both **SourceComponentItem** and **ServiceComponentItem** can be a child of each other depending on the type of export. **ServiceComponentItem** can be a child of **SourceComponentItem** when the parent is **SourceDefinitionItem**, and vice-versa when the parent is **ServiceDefinitionItem**. All parameters that could be exported are listed in table 6.3.3 for **SourceComponentItem**, and table 6.3.4 for **ServiceComponentItem**. In each case, some parameters are suppressed (the parameters to be ignored are indicated in the Item column) and can be inferred from an ancestor element.

It is useful to have the two different types of export, as it is easy to see which source components are not mapped to any service, and service components that are not mapped by any source component.

A **SourceComponentItem** element can have many **ServiceComponentItems**. A **ServiceComponentItem** indicates to which services the component is mapped to at the **activationStartDateTime** of the parent **SourceConfigurationItem**, and the times at which the mappings are scheduled to happen.

3.5.4 ServiceConfigurationList Elements



The export will be a **ServiceConfigurationList** element containing a number of **ServiceConfigurationItem** elements.

Each **ServiceConfigurationItem** element will include information as to which transport stream this service is mapped to, the running status of the service, and what components are scheduled to define this service.

The **ServiceConfigurationItem** element can have **ServiceTransportItems**, **ServiceStatusItems**, and **ServiceDefinitionItems** as children.

A **ServiceTransportItem** element indicates which on which transport(s) a service is mapped and at what time.

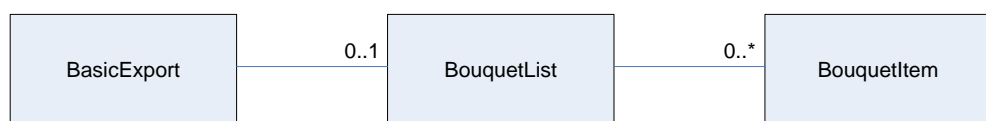
A **ServiceStatusItem** element indicates a scheduled change to the running status of the service.

A **ServiceDefinitionItem** element indicates a scheduled change to the component definition of the service.

A **ServiceDefinitionItem** element can have many **ServiceComponentItem** elements, each one describing a component of the service.

A **ServiceComponentItem** element can have many **SourceComponentItems**, each one describing a transport stream source component that is mapped to this service component. It is possible that no **SourceComponentItems** are present indicating that action is needed on the transport stream in order that the correct service definition goes to air.

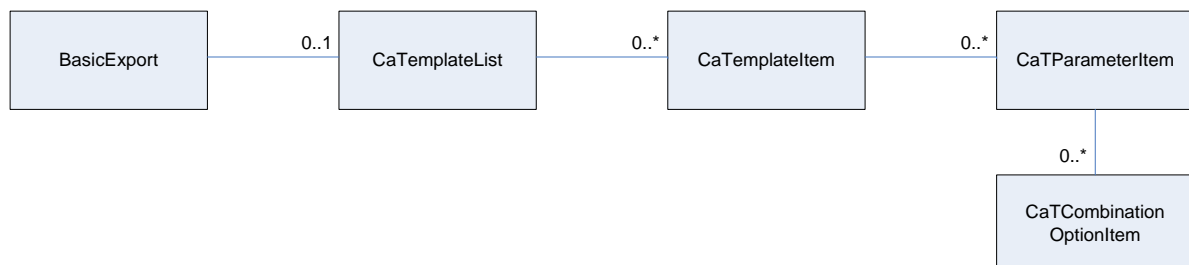
3.5.5 BouquetList Elements



The export will be a **BouquetList** element containing a number of **BouquetItem** elements.

A filter can be specified by including a filter parameter and value in the **BouquetList** request.

3.5.6 CaTemplateList Elements

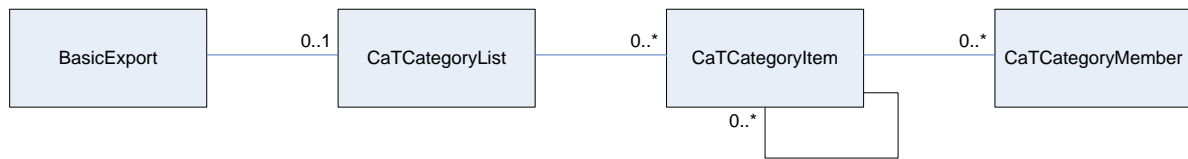


The export will be a **CaTemplateList** element containing a number of **CaTemplateItem** elements.

The **CaTemplateItem** element can have many child **CaTParameterItem** elements.

The **CaTParameterItem** element can have a number of **CaTCombinationOptionItem** elements if the parameter type is a combination parameter. A combination parameter will group a number of parameters whose values tend to impact on the others. The combination OptionId will identify a group of values that together are deemed to be valid or 'make sense'

3.5.7 CaTCategoryList Elements



The export will be a **CaTCategoryList** element containing a number of **CaTCategoryItem** elements. Each category will appear as a **CaTCategoryItem** as a child of **CaTCategoryList**, and each **CaTCategoryItem** may have either **CaTCategoryItem** or **CaTCategoryMember** children describing its relationship to other categories and CA templates. Only a single level of the hierarchy is exported as this minimises the data to be exported, whilst maintaining enough of the structure for the traffic system to build the entire hierarchy. See example in Appendix **Error! Reference source not found.**

The **CaTCategoryItem** element can have zero or more child **CaTCategoryItem** elements and zero or more **CaTCategoryMember** elements.

3.5.8 CaProductList Elements



The export will be a **CaProductList** element containing a number of **CaProductItem** elements.

A filter can be specified by including a filter parameter and value in the **CaProductList** request.

3.5.9 CaCriterionList Elements



The export will be a **CaCriterionList** element containing a number of **CaCriterionItem** elements.

4 Import Definitions

This section describes the import instructions, their operation and parameters. See document [5] for a full description of how this section is organised.

Refer to Figure 1 in appendix Appendix A to see how the instructions are related to each other.

4.1 SiServices Instruction

Table 4: SiServices parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.2 SiServiceInfo Instruction

Table 5: SiServiceInfo parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	-	M	-	1	N	Service Identification
viewerChannelNum	-	-	0	-			STB remote selection number for this service. If omitted no numeric selection will be allowed.
refSiService	-	-	0	-			Only valid if SiService is of type NVOD time-shifted service, ignored for other service types. refSiService must be a siService of type NVOD reference service, and is used to link this NVOD time-shifted service to it's parent NVOD reference service.

4.3 SiServiceDescription Instruction

Table 6: SiServiceDescription parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	M	M	M	1	Y	Service Identification
displayLanguage	-	M	M	M	1	Y	The EPG display Language for the following data
siServiceName	-	O	O	I			The Service name
siServiceProvider	-	O	O	I			The Service provider name
siServiceDescription		O	O	I			The Service description

Only one object for a given **SiService**, **displayLanguage** pair may exist in the SSR at a time.

4.4 Bouquets Instruction

Table 7 Bouquets parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.5 BouquetService Instruction

Only one object for a given bouquet, siService pair may exist in the SSR at a time.

Table 8: BouquetService parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
bouquet	-	M	M	M	1	Y	Identifier for a bouquet
siService	-	M	M	M	1	Y	Service Identifier

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
orderNum	-	0	0	1			Arrangement order for this service within the bouquet. If omitted then the service will not appear in the EPG grid. This number must be unique for each service assigned to a bouquet. If it is not then this instruction will result in an error and the entire transaction will be rolled back.
viewerChannelNum	-	0	0	1			STB remote selection number for this service within the bouquet. If omitted no numeric selection will be allowed. This number must be unique for each service assigned to a bouquet. If it is not then this instruction will result in an error and the entire transaction will be rolled back.

4.6 SiEventSchedule Instruction (container)

Table 9 SiEventSchedule parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
siService	M	-	-	-	-	-			Key used by SiEvent Schedule to reference this description entry

4.6.1 Delete Range Action

It is recommended that if other objects have been included as children of SiEvents in an SiEventSchedule import, then on a subsequent SiEventSchedule delete(range), the same delete(range) should be applied to the child objects. This is to ensure that if the SiEventSchedule is applied as before (with children) that no errors will occur due to child objects existing in the database.

If ServiceStatusSchedules are applied independently of SiEventSchedule, it is recommended that the SourceEventSchedule is also applied and treated independently. This is to avoid any clashes when deleting SourceEventSchedule and the same activationSource is used by more than one type of schedule.

The delete range action will also delete associated SiEventDetail objects (if no other SiEvent object references that object).

Note Deletion of an SiEventDetail object will also cause deletion of child objects associated with that object. See 4.10.1 also.

4.7 SiEvent Instruction

Only one SiEvent object for a given service, start date and time may exist in the SSR at a time. It may be possible for more than one SiEvent object to be given the same siTrafficKey, but it is recommended that only one SiEvent object within a service exists with a given siTrafficKey.

It is important to sustain the referential integrity of the SSR object model. As such when the SiEvent instruction is executed the traffic system must ensure that the appropriate SiEventDetail object already exists in the SSR otherwise the instruction will fail and the entire transaction will be rejected by the SSR.

Table 10 SiEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
siService	-	M	M	M	-	M	1 2	Y	Service Identification
displayDateTime	-	M	O	O	-	O	1	Y	EPG Date and Time
activationDateTime	-	D	O	I	-	I			Activation date and time for this schedule entry. This signals that the nominal date and time for the automation event that triggers the activation of the EPG event differs from the displayDateTime parameter. The activation of the EPG event causes it to become the current event in the EIT Present / Following table.
displayDuration	-	M	O	I	-	I			EPG Duration
activationSource	-	O	O	I	-	I			The activation source (playout source channel) for this schedule entry. If this parameter is omitted then the chronological source channel is used as default.

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
siTrafficKey	-	0	0	0	-	0	2	Y	<p>Traffic system handle for event. It is the responsibility of the traffic system as to how this key is managed. However, if provided, it must be unique within the scope of the Service.</p> <p>As a key this can be provided instead of displayDateTime and used with siService.</p>
detailKey	-	M	O	I	-	I			Reference to separate objects containing the descriptive and detail data for this event. All NVOD time shifted occurrences of the same reference event must share the same value for the detailKey parameter.
oppvPurchaseCode	-	0	0	I	-	I			OPPV purchase code for the event.

If siTrafficKey is not unique within a service the update/delete action will result in an error as an attempt has been made to update more than one object.

4.7.1 Update Action

Updating the displayDateTime parameter will cause a corresponding update to the displayDateTime associated with corresponding SiEventLink objects.

4.7.2 Delete Action

The delete action will also delete any associated SiEventDetail object (if any other SiEvent object does not reference those objects).

4.8 ReplacementSiEvent Instruction

Table 11: ReplacementSiEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	M	M	M	1 2	Y	Service Identification
displayDateTime	-	M	O	O	1	Y	EPG Date and Time
siTrafficKey	-	I	O	O	2	N	Traffic system handle for event. It is the responsibility of the traffic system as to how this key is managed. However, if provided, it must be unique within the scope of the Service. As a key this can be provided instead of displayDateTime and used with siService.
replacementSiService	-	M	O	I			Service Identification of replacement SI Service to be offered by the EPG if the event is blacked-out.
replacementDateTime	-	M	O	I			EPG Date and time of the event on replacementSiService that signals the end of the replacement period. The referenced event must exist in the SSR at the time this field is processed. Otherwise this instruction will fail, and the entire transaction will be rejected.
warningDuration	-	M	O	I			Number of seconds for the EPG to display a banner, warning the subscriber that he is being automatically re-tuned. Valid rang 0 .. 1200 seconds (20 minutes)

4.8.1 Insert Action

On insert, if the displayDateTime parameter does not reference an existing SiEvent object then an error will occur, as a ReplacementSiEvent must always be associated with a SiEvent.

4.8.2 Update Action

On update, if the displayDateTime parameter does not reference an existing SiEvent object then an error will occur, as a ReplacementSiEvent must always be associated with a SiEvent.

If siTrafficKey is not unique within a service the update action will result in an error as an attempt has been made to update more than one object.

4.8.3 Delete Action

If siTrafficKey is not unique within a service the delete action will result in an error as an attempt has been made to update more than one object.

4.9 SiEventDetails Instruction (container)

The SiEventDetails instruction acts as a container for SiEventDetail instructions. It can also be provided as a child of a SiEvent instruction. The user would use SiEventDetails if for example they wanted to provide SiEventDetail objects before a referencing SiEvent object was provided which could be the case for NVOD events.

Table 12 SiEventDetails parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.10 SiEventDetail Instruction (container)

Only one object for a given detailKey value may exist in the SSR at any one time. An object may not be deleted if SiEvent entries exist referencing that object, that is, they share the same detailKey value.

Table 13 SiEventDetail parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
detailKey	-	M	M	M	M	-	1	Y	Unique key used to identify the SiEventDetail object
parentalRating ¹	-	M	O	I	M	-			The parental rating of the event. This parameter will refer to a parental rating object that exists in SSR.

¹ See section Appendix F for further details of allowed values of the parentalRating parameter.

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
genreId ²	-	M	O	I	M	-			The genre identification of the event. This parameter will refer to a genre object that exists in SSR.
subGenreId	-	M	O	I	M	-			The subgenre of the event. This parameter in conjunction with genre will refer to a subGenre object that exists in SSR.
broadcasterDetail-1 ³	-	O	O	I	O	-			A broadcaster defined event information bitfield. If this parameter is not supplied at insert, a value of 0 will be supplied by default.
broadcasterDetail-2 ³	-	O	O	I	O	-			A broadcaster defined event information bitfield. If this parameter is not supplied at insert, a value of 0 will be supplied by default.
programKey	-	O	O	I	O	-			Program key used to identify the Programs with the same content.
epgInfoBits		O	O	I	O	-			EPG information bits (project-defined)
<u>catchupFlag</u>	-	<u>O</u>	<u>O</u>	<u>I</u>					<u>Catch-up flag required to signal to a downstream asset generation system that an event is required to be captured as a discrete asset.</u>

4.10.1 Delete Action

The delete action will also delete associated SiEventDescription objects, SiEventItemisedDescription objects, SiProgramGroupLink objects

² See section Appendix F for further details of allowed values of the genreId and subGenreId parameters.

³ See section Appendix F for further details of allowed values of the broadcasterDetail-1 and broadcasterDetail-2 parameters.

4.11 SiEventDescription Instruction

Only one object for a given detailKey, displayLanguage pair may exist in the SSR at a time.

Table 14 SiEventDescription parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
detailKey	-	M	M	M	M	M	1	Y	Key used by Si Event Schedule to reference this description entry
displayLanguage	-	M	M	M	M	M	1	Y	The EPG display Language for the following data
eventName	-	M	O	I	M	I			The EPG Event name
eventDescription	-	O	O	I	O	I			The EPG Event description
eventExtendedDescription	-	O	O	I	O	I			The extended EPG Event description. This description will appear in the SI extended event descriptor.
<u>eventMarketingMsg</u>	-	<u>O</u>	<u>O</u>	<u>I</u>	<u>O</u>	<u>I</u>			<u>The EPG marketing message for the event.</u>
<u>eventSort</u>	-	<u>O</u>	<u>O</u>	<u>I</u>	<u>O</u>	<u>I</u>			<u>Event sorting string used to order events in A-Z listings.</u> <u>If this parameter is absent on insert, then '*' is used as a default, resulting in SSR sort string processing.</u> <u>An explicit null value results in the string being omitted from the A-Z listings. e.g. <eventSort/></u> <u>All other non-null values are used as the sort string for ordering.</u>

4.12 SiEventItemisedDescription Instruction

Up to 99 objects for a given detailKey, displayLanguage pair may exist in the SSR at a time.

Table 15 SiEventItemisedDescription parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
detailKey	-	M	M	M	M	M	1	N	Key used by Si Event Schedule to reference this description entry
displayLanguage	-	M	M	M	M	M	1	N	The EPG display Language for the following data
itemNum	-	M	M	M	M	M	1	N	ordinal number of item
itemName		M	M	I	M	I			item name text
itemValue	-	M	M	I	M	I			Item value text This item will appear in the SI extended event descriptor.

4.13 SiEventSellPrice Instruction

Only one object for a given detailKey, currency identifier pair may exist in the SSR at a time.

Table 16 SiEventSellPrice parameters

Parameter	Delete Range	Insert	Update	Delete	Clear	Keys	Updateable	Meaning
<u>detailKey</u>	-	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>1</u>	<u>Y</u>	<u>Unique key used to identify the SiEventDetail object</u>
<u>currency</u>	-	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>1</u>	<u>Y</u>	<u>Currency identifier</u>
<u>price</u>	-	<u>M</u>	<u>O</u>	<u>I</u>	<u>I</u>			<u>Default selling price</u>

4.13.14 SiEventLink Instruction

IMPORTANT!

SiEventLink is deprecated and should be replaced with SiProgramGroupLink in new projects

All events within the SSR database that are linked to the same seriesKey, will become a member of that series.

The traffic system must not apply both SiProgramGroupLink of type "Series" and SiEventLink instructions to the same events.

The traffic system must not reuse a seriesKey for a new series until the last event in the series:

is not currently running; and

has its start time more than the series keep days site parameter (which will be agreed at integration time) in the past.

Table 17 SiEventLink parameters

Parameter	Delete Param	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
siService	-	M	M	M	-	-	1 2	Y	Service Identification
displayDateTime	-	M	O	O	-	-	1	Y	EPG Date and Time
siTrafficKey	-	I	O	O	-	-	2	N	Traffic system handle for event. It is the responsibility of the traffic system as to how this key is managed. However, if provided, it must be unique within the scope of the Service. As a key this can be provided instead of displayDateTime and used with siService.
seriesKey	-	M	O	I	-	-			The key used to link events.

4.13.14.1.1 Insert Action

On insert, if the displayDateTime parameter does not reference an existing SiEvent object then an error will occur, as a SiEventLink must always be associated with a SiEvent.

4.13.24.14.2 Update Action

On update, if the displayDateTime parameter does not reference an existing SiEvent object then an error will occur, as a SiEventLink must always be associated with a SiEvent.

If siTrafficKey is not unique within a service the update action will result in an error as an attempt has been made to update more than one object.

4.13.34.14.3 Delete Action

If siTrafficKey is not unique within a service the delete action will result in an error as an attempt has been made to update more than one object.

4.144.15 SiProgramGroupLink Instruction

All events within the SSR database that are linked to the same groupKey and groupType, will become a member of that Group.

Groups can be used instead of Series to link all showings of a group of programs together and to identify which showing is which episode. Groups can also be used to signal programs that should be recorded for pushVOD content services.

The traffic system must not apply both SiProgramGroupLink of type “Series” and SiEventLink instructions to the same events.

The traffic system must not reuse groupKey and groupType for a new Group until the last event in the existing Group is:

Not currently running; and

Older than NOW minus the Group keep days site parameter (which will be agreed at integration time).

Table 18 SiProgramGroupLink parameters

Parameter	Delete Range	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
detailKey	-	M	M	M	M	M	1	Y	Program identification through the event detail key
groupKey	-	M	M	M	M	M	1	Y	group key
groupType	-	M	M	M	M	M	1	Y	group type: “Series” “Push”, “Pull”, “Push VOD”
orderNum	-	O	O	I	O	I	-	Y	Program ordering within this group

orderNum is used to order this item within this specific group and also is displayed as the episode number where appropriate on the STB.

groupType value “push VOD” is only used with NDS XSI systems. groupType “Push” should be used for DVB systems.

4.154.16 SiGroup Instruction

SiGroup can be used to override the default values for a group. It can be provided prior to providing SiProgramGroupLink instructions, or if provided afterwards should be requested in Set or Update mode as the SiGroup will have been created automatically already.

The traffic system cannot delete a SiGroup until the last event in this existing Group is:

Not currently running; and

Older than the NOW minus the Group keep days site parameter.

Table 19 SiGroup parameters

Parameter	Delete Param	Insert	Update	Delete	Set	Clear	Keys	Updateable	Meaning
groupKey	-	M	M	M	M	-	1	Y	group key
groupType	-	M	M	M	M	-	1	Y	group type: “Series”, “Push”, “Pull”, “PushVOD”
maxOrderNum	-	O	O	I	O	-	-	Y	Max expected episode number

maxOrderNum is displayed as the expected number of items in this group on the STB thus allowing the season/series length to be described before scheduling all the content episodes.

4.164.17 SourceEventSchedule Instruction (container)

Table 20 SourceEventSchedule parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
playoutSource	M	-	-	-			Playout source channel identification. The CHRONOLOGICAL source is not valid here.

4.174.18 SourceEvent Instruction

This instruction provides a key to activate all SSR changes that are synchronised to this playoutSource and nominal activationDateTime value. This key is expected to be received by the SSR system from video automation or master control systems.

Table 21 SourceEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
playoutSource	-	M	M	M	1 2	Y	Playout source channel identification. The CHRONOLOGICAL source is not valid here.
activationDateTime	-	M	O	O	1	Y	The nominal automation playlist event start date time.
playoutEventKey	-	O	O	I			Automation Playlist event key. If, provided, this key must be unique within a source channel, as it is the key that is passed from automation to SSR to activate an event.
playoutTrafficKey	-	O	O	O	2	Y	Traffic system reference to the automation playlist event. It is the responsibility of the traffic system as to how this key is managed. However, if provided, it must be unique within the scope of the playoutSource. As a key this can be provided instead of activationDateTime and used with playoutSource.

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
Title	-	0	0	I			The title of the event, used for UI purposes only.
Duration	-	0	0	I			The duration of the event.

4.17.14.18.1 Update Action

If playoutTrafficKey is not unique within a playoutSource, the update action will result in an error as an attempt has been made to update more than one object.

4.184.19 ServiceStatusSchedule Instruction (container)

Table 22 ServiceStatusSchedule Parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	M	-	-	-			SI Service identification.

4.194.20 ServiceStatus Instruction

Table 23 ServiceStatus parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	M	M	M	1	Y	Service Identification
activationSource	-	M	O	I			The activation source (playout source channel) for this schedule entry.
activationDateTime	-	M	M	M	1	Y	The nominal automation playlist event start date time. As playlist (automation) schedules adjust, this value should stay the same.
runningStatus	-	M	O	I			Allowed values: 'Running' 'Not Running'

4.204.21 MosaicTemplates Instruction

Table 24: MosaicTemplates parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
-	-	-	-	-			

4.214.22 MosaicTemplate Instruction

Table 25 describes the...

Table 25: MosaicTemplate parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
mosaic	-	M	M	M	1	Y	Identifier for a mosaic template
horizontalBlocks	-	M	O	I			Number of underlying blocks in the horizontal direction
verticalBlocks	-	M	O	I			Number of underlying blocks in the vertical direction
longDescription	-	O	O	I			A free-form text field associated with the mosaic template

4.21.14.22.1 Delete Action

The delete action will also delete associated mosaicTemplateCell objects.

4.224.23 MosaicTemplateCell Instruction

Table 26: MosaicTemplateCell parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
mosaic	-	M	M	M	1	Y	Identifier for a mosaic template
xPosition	-	M	M	M	1	Y	x-position of the top left underlying block of the cell
yPosition	-	M	M	M	1	Y	y-position of the top left underlying block of the cell
width	-	M	O	I			number of horizontal underlying blocks in the cell
height	-	M	O	I			number of vertical underlying blocks in the cell
link ⁴	-	M	O	I			pointer to a mosaicLink object
description	-	M	O	I			short description of the cell for display in user interfaces. Must be unique within a mosaic.
longDescription	-	O	O	I			A free-form text field associated with the mosaic template

⁴ The link parameter references a MosaicLink object that must exist before this instruction is executed.

4.234.24 MosaicLinks Instruction

Table 27: MosaicLinks parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.23.14.24.1 MosaicLink Instruction

Table 28: MosaicLink parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
link	-	M	M	M	1	Y	Identifier for a mosaic link
longDescription	-	O	O	I			A free-form text field associated with the mosaic template

4.244.25 MosaicSchedule Instruction (container)

Table 29: MosaicSchedule parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	M	-	-	-			Service Identification

4.254.26 MosaicEvent Instruction

Table 30: MosaicEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	M	M	M	1	Y	Service Identification
activationDateTime	-	M	M	M	1	Y	Activation date and time for this schedule entry.
activationSource	-	O	O	I			The activation source (playout source channel) for this schedule entry. If this parameter is omitted then the chronological source channel is used as default
mosaic	-	O	O	I			Identifier for a mosaic template. If empty then this schedule entry terminates a mosaic definition for this SI Service. On insert, if omitted, defaults to empty
entryPointFlag	-	O	O	I			Flag indicating whether the entry_point flag in the mosaic descriptor should be set or not. If omitted then the flag will not be set.

4.264.27 MosaicLinkSchedule Instruction (container)

Table 31: MosaicLinkSchedule parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	M	-	-	-			Service Identification

4.274.28 MosaicLinkEvent Instruction

Table 32: MosaicEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
siService	-	M	M	M	1	Y	Service Identification
link	-	M	M	M	1	Y	Identifier for a mosaic link
activationDateTime	-	M	M	M	1	Y	Activation date and time for this schedule entry.
activationSource	-	O	O	I			The activation source (playout source channel) for this schedule entry. If this parameter is omitted then the chronological source channel is used as default
presentationInfo	-	O	O	I			Presentation information. One of: Undefined Video Still picture Graphics/text If omitted the cell to which this link is applied will be disabled, and linkinfo will be ignored.
linkSiService	-	O	O	I			SI Service to which this mosaic cell links. If not provided, then navigation to this cell is disabled.

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
displayDateTime	-	0	0	1			displayDateTime of the event on the link service. May be supplied if linkSiService is supplied and linkSiService is not a NVOD reference service. If supplied must reference a scheduled event.
detailKey	-	0	0	1			detailKey of the NVOD events on the linkSiService. May be supplied if linkSiService is supplied and linkSiService is a NVOD reference service. If supplied must reference the details of an event on a time-shifted service.

4.284.29 ItvEventSchedule Instruction (container)

Table 33 ItvEventSchedule Parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
playoutSource	M	-	-	-			Playout source channel identification.

4.294.30 ItvEvent Instruction

Table 34 ItvEvent parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.304.31 ItvEventOffset Instruction

Table 35 ItvEventOffset parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
playoutSource	-	M	M	M	1 2	Y	Playout source channel identification. In the ITV context, this parameter identifies the timeline for this interactive episode. It may also identify the data carousel source if no dataSource parameter is provided.
activationSource	-	O	O	I			The activation source (playout source channel) for this schedule entry. If this parameter is omitted then the chronological source channel is used.
activationDateTime	-	M	O	O	1	Y	The nominal automation playlist event start date time.
dataSource	-	O	O	I			Identifies the data carousel that this ITV episode is played out on.
activationOffset	-	O	O	O	1	Y	Identifies the offset from the ITV event activationDateTime that this ITV event segment is to occur. If not supplied, a default of 0 is used.
itvTrafficKey	-	O	O	O	2	Y	Traffic system handle for ITV event. It is the responsibility of the traffic system as to how this key is managed. However, if provided, it must be unique within the scope of the playoutSource. As a key this can be provided instead of activationDateTime and used with playoutSource.

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
itvId	-	0	0	1			<p>The identity of the Interactive episode whose configuration is being specified. The value is the same number as is used on the iPackager system.</p> <p>The itvId must be provided for as long as the interactive episode is to be on-air i.e. it must be provided when activation_state is 'displayInvite' or 'removeInvite'.</p> <p>If no itvId is specified then no application will be broadcast. This is used to remove an application from a broadcast carousel.</p>

4.324.32 CaSchedule Instruction (container)

Table 36: CaSchedule parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
playoutSource	M	-	-	-			Identifies the source channel i.e. the content to which the CA is to be applied. The chronological source is not valid for this parameter.

4.324.33 CaRequest Instruction (container)

Table 37: CaRequest parameters

Parameter	Delete Range	Insert	Update	Delete	Clear	Keys	Updateable	Meaning
caRequestKey	-	M	M	M	M	1	N	This field identifies a request.
caTemplate	-	M	0	1	1			This identifies the template to be used when in this request.

Parameter	Delete Range	Insert	Update	Delete	Clear	Keys	Updateable	Meaning
playoutSource	-	M	O	I	I			Identifies the source channel i.e. the content to which the CA is to be applied. The chronological source is not valid for this parameter.
activationSource	-	O	O	I	I			Activation source (playout source channel) for this CA Request. If this parameter is omitted then the chronological source channel is used.
activationDateTime	-	M	O	I	I			Activation date and time for this CA request.
mainEventDateTime	-	O	O	I	I			Activation date and time for CA related to the 'main' content. StreamServer will use this time as the trigger for timing CA changes that have an associated time offset that is greater than zero. If not supplied on insert, then will default to activationDateTime. If supplied on insert then usually provided on update.

4.32.14.33.1 Delete Action

The delete action will also delete associated CaRequestParameter objects.

4.334.34 CaRequestParameter Instruction

Table 38: CaRequestParameter parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
caRequestKey	-	M	M	M	1	N	This field identifies a defined request.
parameterNumber	-	M	M	M	1	N	Identifies the parameter number within the CA Template applied to the CA Request.
parameterValue	-	M	M	I			Provides the value of the parameter.

4.33.14.34.1 Insert Action

If a CaRequestParameter insert instruction is not included as a child of a CA Request insert or update, then it must be followed by a CaRequest update instruction.

4.33.24.34.2 Update Action

A CaRequestParameter update must be followed by or associated with a CaRequest update for the same caRequestKey.

4.33.34.34.3 Delete Action

A CaRequestParameter delete must be followed by or associated with a CaRequest delete for the same caRequestKey.

4.344.35 CaProducts Instruction

Table 39: CaProducts parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
	-	-	-	-			

4.354.36 CaProduct Instruction

Table 40 describes the...

Table 40: CaProduct parameters

Parameter	Delete Range	Insert	Update	Delete	Keys	Updateable	Meaning
caProductId	-	M	M	M	1	N	This field identifies a CA Product.
productType	-	M	I	I			Identifies the product type. The following types are allowed : Subscription IPPV Only OPPV Only IPPV and OPPV Subscription and OPPV XTV XTV and OPPV Impulse Subscription Upgrade
productStartDateTime	-	M	I	I			The date and time at which the product can be used.
productExpiryDateTim e	-	M	O	I			The expiry date and time of the product.
longDescription	-	O	O	I			A free-form text field associated with the CA product. Note that this field is utilised by the SMS as a business scenario identification.

4.35.14.36.1 Update Action

Only CaProducts that are not used in any active CaRequests should be updated.

4.35.24.36.2 Delete Action

Only CaProducts that are not used in any active CaRequests should be deleted.

5 Export Request Definitions

This section lists, for each export request instruction, the valid filter parameters and any other instruction specific information. See document [5] for a full description of how this section is organised.

Note For this XTI interface is not allowed to combine both filters and partial exports within one export request, and an error will be returned if this is attempted.

Refer to Figure 2Export Document Structure and section 3.4 to see how the instructions are related to each other.

5.1 SiServiceList

Table 41 SiServiceList parameters

Parameter	Meaning
siService	A textual identifier for the SI Service.
siServiceId	A numeric identifier for the SI Service.
ssrServiceTypeId	The StreamServer Service Type.
dvbServiceType	The DVB Service Type
displayLanguage	The language identifier for the following Parameters (applies to any SiServiceNameItem elements in the response)

When using displayLanguage as a filter, then only SiServiceItem objects with a SiServiceNameItem object matching the filter will be exported. I.e. the filter does not apply to just the SiServiceNameItem.

5.2 SourceChannelList

No filterable parameters.

5.3 TransportConfigurationList

Table 42 TransportConfigurationList parameters

Parameter	Meaning
transport	Transport identification
transportId	Numeric transport identifier

Parameter	Meaning
mpegTransportId	The MPEG Transport Stream Identifier.

Select range attributes may be present on the transportConfigurationList instruction to restrict the range of **activationDateTime** on returned items.

5.4 ServiceConfigurationList

No filterable parameters.

Select range attributes may be present on the serviceConfigurationList instruction to restrict the range of **activationDateTime** on returned items.

5.5 CaTemplateList

Table 43: CaTemplateList parameters

Parameter	Meaning
caTemplate	A textual identifier for a CA Template.
caTemplateId	The StreamServer key for a CATemplate.

5.6 CaTCategoryList

Table 44: CaCategoryList parameters

Parameter	Meaning
category	CA Template Category Identifier
categoryId	Numeric CA Template Category Identifier.

5.7 CaProductList

Table 45: CaProductList parameters

Parameter	Meaning
caProductId	This field identifies a CA Product.
productType	Identifies the product type. The following types are exported (the actual text exported may not match exactly the text specified below): Subscription IPPV Only OPPV Only IPPV and OPPV Subscription and OPPV XTV XTV and OPPV Impulse Subscription Upgrade

Select range attributes may be present on the CaProductList instruction to restrict the range of **productStartDateTime** on returned items.

5.8 BouquetList

Table 46: BouquetList parameters

Parameter	Meaning
bouquet	Textual Identifier for a bouquet
bouquetId	Numeric Identifier for a bouquet

6 Export Response Definitions

This section lists the export response elements and any possible parameter elements. See document [5] for a full description of how this section is organised.

Refer to Figure 2 Export Document Structure and section 3.4 to see how the instructions are related to each other.

6.1 SiServiceList

6.1.1 SiServiceItem

Table 47 SiServiceItem parameters

Parameter	Use	Meaning
siService	M	A textual identifier for the SI Service.
siServiceId	M	A numeric identifier for the SI Service.
ssrServiceTypeId	M	The StreamServer Service Type.
dvbServiceType	O	The DVB Service Type
dvbOriginalNetworkId	M	DVB Original Network Identifier
dvbServiceId	M	DVB Service Identification
parentalRating	O	The default parental rating of the service
viewerChannelNum	O	STB remote selection number for this service. If not present then there is no numeric selection for this service.
refSiService	O	If service is of type NVOD time-shifted then this field will be present and will give the textual SI Service identifier for the NVOD reference service with which this service is associated.
refSiServiceId	O	If service is of type NVOD time-shifted then this field will be present and will give the SI Service identifier for the NVOD reference service with which this service is associated.
aliasSiService	O	Textual identifier of alias SI Service. If present, indicates that the service obtains its schedule from the alias SI Service, and that schedule should not be downloaded for this SI Service.
aliasSiServiceId	O	Numeric identifier of alias SI Service. If present, indicates that the service obtains its schedule from the alias SI Service, and that schedule should not be downloaded for this SI Service.

6.1.2 SiServiceNameItem

Table 48 SiServiceNameItem parameters

Parameter	Use	Meaning
displayLanguage	M	The language identifier for the following Parameters.
siServiceName	O	The name of the service.
siServiceProvider	O	The name of the service provider.
siServiceDescription	O	A description of the service.

6.2 SourceChannelList

6.2.1 SourceChannelItem

Table 49 SourceChannelItem parameters

Parameter	Use	Meaning
playoutSource	M	A textual identifier for the playout source channel.
playoutSourceId	M	A numeric identifier for the playout source channel.
scheduleType	M	A textual definition for the schedule. The scheduleType can be one of the following : Internal Normal Software Download Video Inset Stills
longDescription	O	A free-form text field associated with the playout source channel

6.3 TransportConfigurationList

6.3.1 TransportConfigurationItem

Table 50 TransportConfigurationItem parameters

Parameter	Use	Meaning
transport	M	Transport identification
transportId	M	Numeric transport identifier

Parameter	Use	Meaning
mpegTransportId	M	The MPEG Transport Stream Identifier.
longDescription	O	A description of the transport stream.

6.3.2 SourceDefinitionItem

Table 51 SourceDefinitionItem parameters

Parameter	Use	Meaning
playoutSource	M	The playoutSource identifies the source of this component. This source identifies an input of the transport stream.
activationDateTime	M	The date and time at which the definition becomes active.
activationSource	M	The activation source for this change.

6.3.3 SourceComponentItem

Table 52 SourceComponentItem parameters

Parameter	Use	Meaning
transport	I	Transport Identifier
activationSource	I	The activation source for this change.
activationDateTime	I	The date and time at which the definition becomes active.
componentType	M	Identifies the component type. Valid types are as follows: Video Audio Teletext Subtitle ASI Data
componentNumber	M	Enumerates components of the same type.
componentTag	O	DVB component tag if defined
componentClass	O	Identifier of the component configuration. If this parameter is not present, the component is deemed to no longer exist.

Parameter	Use	Meaning
classDescription	O	short description of component class. Will be present with componentClass parameter.
classLongDescription	O	long description of class. This parameter will not be present if no long description has been entered.
componentLanguage	O	language of component. Optional for video and data components; Mandatory for audio and subtitle components.
longDescription	O	Description of the component. This parameter will not be present if no description has been entered for this component.

6.3.4 ServiceComponentItem

Table 53 ServiceComponentItem parameters

Parameter	Use	Meaning
siService	M	SI Service Identification
activationSource	O	The activation source for this change. If omitted indicates termination of the service mapping to this source component.
activationDateTime	M	The date and time at which the service component changes
playoutSource	I	The playoutSource identifies the source of this component. This source identifies an input of the transport stream.
componentType	I	Identifies the component type. Valid types are as follows: Video Audio Teletext Subtitle ASI Data
componentNumber	I	Enumerates components of the same type.

6.4 ServiceConfigurationList

6.4.1 ServiceConfigurationItem

Table 54 ServiceConfigurationItem parameters

Parameter	Use	Meaning
siService	M	SI Service Identification
siServiceId	M	Numeric SI Service Identification

6.4.2 ServiceTransportItem

Table 55 ServiceTransportItem parameters

Parameter	Use	Meaning
transport	O	Transport identification. If not present, indicates termination of this service on this transport.
activationSource	M	The activation source for this change.
activationDateTime	M	The date and time at which the service is mapped to a transport stream

6.4.3 ServiceStatusItem

Table 56 ServiceStatusItem parameters

Parameter	Use	Meaning
runningStatus	M	Describes the running status at this time.
activationSource	M	The activation source for this change.
activationDateTime	M	The date and time at which the service status changes

6.4.4 ServiceDefinitionItem

Table 57 ServiceDefinitionItem parameters

Parameter	Use	Meaning
activationSource	O	The activation source for this change. If omitted indicates termination of component definitions for this service.

Parameter	Use	Meaning
activationDateTime	M	The date and time at which the service definition changes

6.4.5 ServiceComponentItem

This item is defined in section 6.3.4.

6.4.6 SourceComponentItem

This item is defined in section 6.3.3.

6.5 CaTemplateList

6.5.1 CaTemplateItem

Table 58: CaTemplateItem parameters

Parameter	Use	Meaning
caTemplate	M	A textual identifier for a CA Template.
caTemplateId	M	The StreamServer key for a CATemplate.
longDescription	O	Provides a detailed description of the CA Template.
parameters	M	The number of parameters that this CA Template supports.

6.5.2 CaTParameterItem

Table 59: CaTParameterItem parameters

Parameter	Use	Meaning
parameterNumber	M	A numerical identifier of the parameter.
description	M	A description of the parameter
mandatoryParameter	M	Indicates whether this parameter must be supplied.
parameterType	M	The parameter type. A full description of the parameter types is detailed in appendix Appendix E.

Parameter	Use	Meaning
valueFormat	O	Describes the format that the parameter value has to be supplied in.
valueRange	O	Describes the range of values that the parameter value may take.
criterionType	O	Included only if parameterType is 'CACriterion'. Indicates the type of criterion that may be applied to this parameter: Product Region Zipcode Zone

6.5.3 CaTCombinationOptionItem

Table 60: caTCombinationOptionItem parameters

Parameter	Use	Meaning
combinationOptionId	M	A numeric identifier for the combination option. The value returned here will be used as the value of this parameter.
description	M	Describes the combination option

6.6 CaTCategoryList

6.6.1 CaTCategoryItem

Table 61: caTCategoryItem parameters

Parameter	Use	Meaning
category	M	CA Template Category Identifier
categoryId	M	Numeric CA Template Category Identifier.
longDescription	O	Description of category

6.6.2 CaTCategoryMember

Table 62: CaTCategoryMember parameters

Parameter	Use	Meaning
caTemplateId	M	The StreamServer key for a CATemplate.
caTemplate	M	A textual identifier for a CA Template.
longDescription	O	Description of category

6.7 CaProductList

6.7.1 CaProductItem

Table 63: CaProductItem parameters

Parameter	Use	Meaning
caProductId	M	This field identifies a CA Product.
productType	M	Identifies the product type. The following types are exported: Subscription IPPV Only OPPV Only IPPV and OPPV Subscription and OPPV XTV XTV and OPPV Impulse Subscription Upgrade
productStartDateTime	O	The date and time at which the product can be used.
productExpiryDateTim e	O	The expiry date and time of the product.
caServiceId	M	Identifies the CA Service ID to be used for this CA Product. If not supplied, SSR will automatically generate a CA Service ID.
longDescription	O	A free-form text field associated with the CA product.

6.8 CaCriterionList

6.8.1 CaCriterionItem

Table 64: CaCriterionItem parameters

Parameter	Use	Meaning
caCriterionId	M	Identifier for CA Criterion
description	M	CA Criterion description
longDescription	O	Free-text field associated with the CA Criterion.
criterionType	M	Indicates the type of the CA criterion: Region Zipcode Zone

6.9 BouquetList

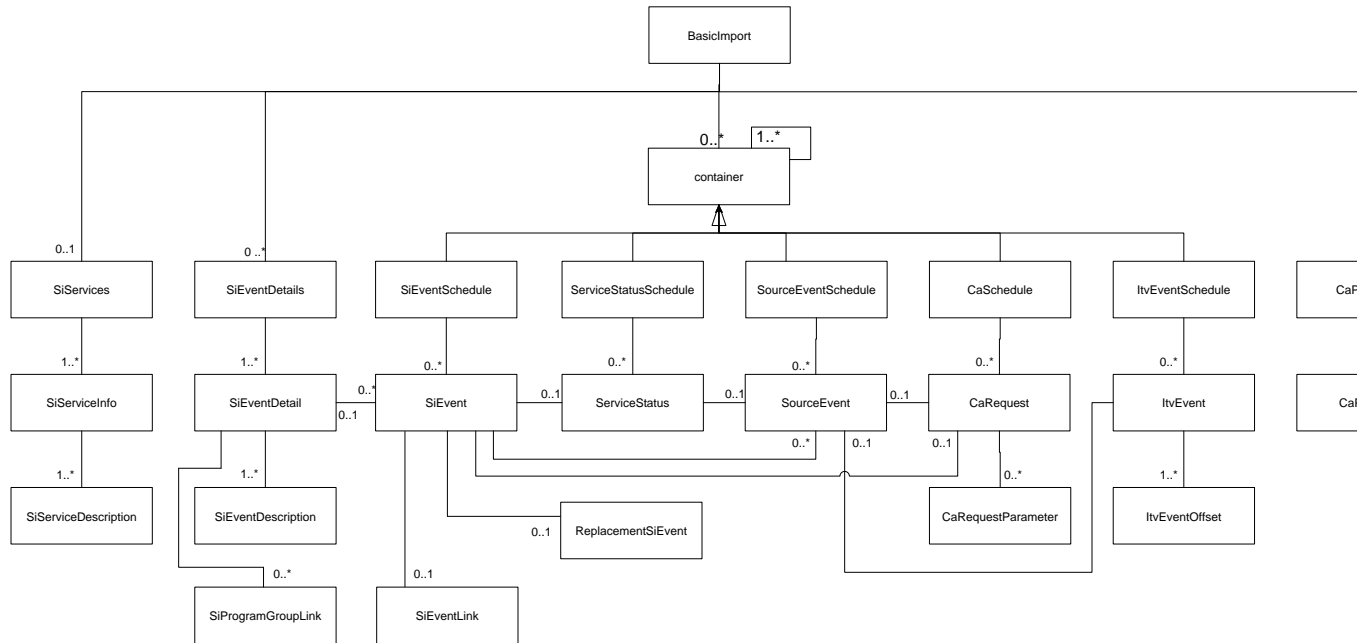
6.9.1 BouquetItem

Table 65: BouquetItem parameters

Parameter	Use	Meaning
bouquet	M	Textual Identifier for a bouquet
bouquetId	M	Numeric Identifier for a bouquet
longDescription	O	Free-text field associated with the bouquet.

Appendix A Import Document Structure

Figure 1 Import Document Structure



Appendix B Export Document Structure

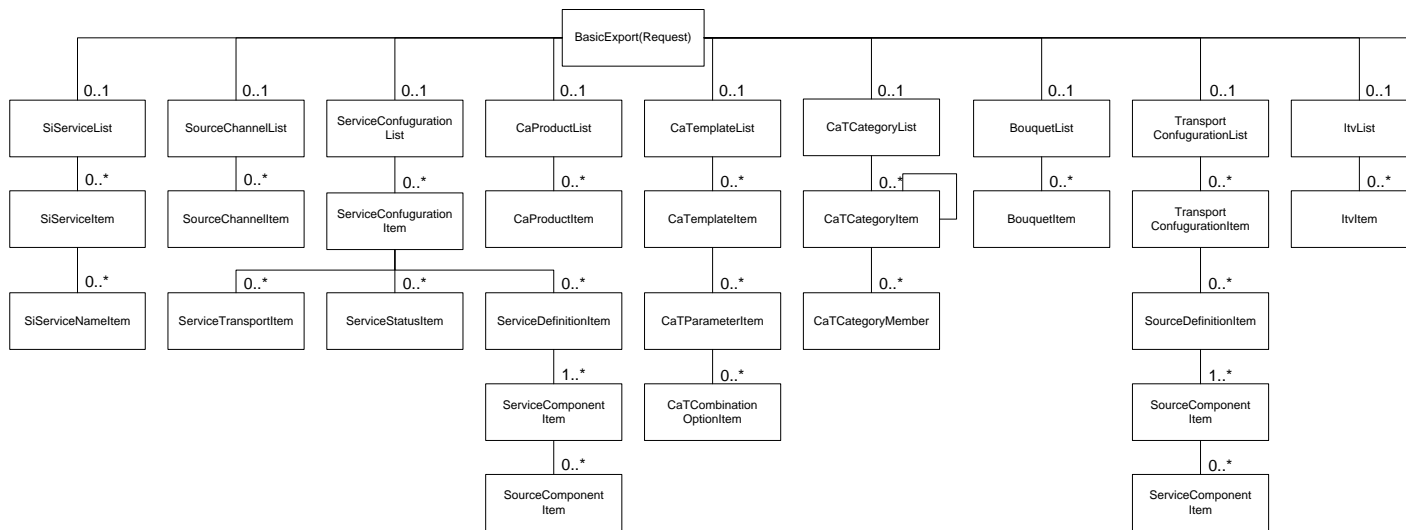


Figure 2 Export Document Structure

Appendix C Example Documents

C.1 Daily upload

The following section shows an example of how a schedule might be uploaded to the SSR.

A traffic system might load whole days of schedule for each service into the SSR and then update parts of the day for a service to further refine the schedule.

The daily update transaction will include all the events and their details for a given service's broadcast day.

The document segment shown in Figure 3 Example of a Daily Upload provides an example of (part of) a service schedule. The basicImport element contains one global parameter that will be in scope for any child element. The SiEventSchedule element contains parameters and attributes that will be in scope for its child elements. In this example, SiEventSchedule will be deleted in the range specified and the same range deleted for SourceEventSchedule, then the SiEvents and their child instructions processed.

```
<?xml version="1.0" encoding="UTF-8"?>
<BasicImport utcOffset="+00:00" frameRate="25">
  <displayLanguage>eng</displayLanguage>
  <SiGroup>
    <groupKey>UliCriFights1</groupKey>
    <groupType>Series</groupType>
    <maxOrderNum>19</maxOrderNum>
  </SiGroup>
  <SiEventSchedule deleteStart="2003/04/16 13:00:00"
    deleteEnd="2003/04/16 18:00:00">
    <siService>Channel One</siService>
    <activationSource>Channel One</activationSource>
    <caMode>Scrambled</caMode>
    <parentalRating>1</parentalRating>
    <genreId>1</genreId>
    <subGenreId>1</subGenreId>
    <broadcasterDetails-1>3</broadcasterDetails-1>
    <broadcasterDetails-2>4</broadcasterDetails-2>
    <SiEvent>
      <displayDateTime>2003/04/16 13:00:00</displayDateTime>
      <displayDuration>01:00:00</displayDuration>
      <activationDateTime>2003/04/16 13:00:16</activationDateTime>
      <siTrafficKey>Ch0:001</siTrafficKey>
      <detailKey>Ch0:001</detailKey>
      <SiEventDetail>
        <programKey>UCF11</programKey>
      <SiEventDescription>
```

```

        <eventName>Program 1</eventName>
        <eventDescription>Program 1 Description</eventDescription>
    </SiEventDescription>
    <SiProgramGroupLink>
        <groupType>Series</groupType>
        <groupKey>UltCriFightS1</groupKey>
        <orderNum>1</orderNum>
    </SiProgramGroupLink>
    <SiProgramGroupLink>
        <groupType>Push</groupType>
        <groupKey>SDPVR</groupKey>
    </SiProgramGroupLink>
</SiEventDetail>
</SiEvent>
<SiEvent>
    <displayDateTime>2003/04/16 14:00:00</displayDateTime>
    <displayDuration>01:00:00</displayDuration>
    <activationDateTime>2003/04/16 14:00:22</activationDateTime>
    <siTrafficKey>Ch0:002</siTrafficKey>
    <detailKey>Ch0:002</detailKey>
    <SiEventDetail>
        <programKey>UCF12</programKey>
        <SiEventDescription>
            <eventName>Program 2</eventName>
            <eventDescription>Program 2 Description</eventDescription>
        </SiEventDescription>
        <SiEventItemisedDescription>
            <itemNum>0</itemNum>
            <itemName>PPRK</itemName>
            <itemValue>UCF12</itemValue>
        </SiEventItemisedDescription>
        <SiProgramGroupLink>
            <groupType>Series</groupType>
            <groupKey>UltCriFightS1</groupKey>
            <orderNum>1</orderNum>
        </SiProgramGroupLink>
        <SiProgramGroupLink>
            <groupType>Push</groupType>
            <groupKey>SDPVR</groupKey>
        </SiProgramGroupLink>
    </SiEventDetail>
</SiEvent>
</SiEventSchedule>
</BasicImport>

```

Figure 3 Example of a Daily Upload

The document segment shown in Figure 4 demonstrates how a service schedule could be set for a PPV service like a movie Nvod service. Many EPG events will reference the same movie hence the detail and description of the movie are treated as a separate object and referred to from the EPG event. In this example each EPG

event i.e. each showing of the movie has it's own Source Event to enable activation by an external automation system.

```
<?xml version="1.0" encoding="UTF-8"?>
<BasicImport utcOffset="+00:00" frameRate="25">
<displayLanguage>eng</displayLanguage>
  <SiEventDetails>
    <SiEventDetail>
      <detailKey>SED:IPPV:1</detailKey>
      <parentalRatingId>0</parentalRatingId>
      <genreId>0</genreId>
      <subGenreId>0</subGenreId>
      <broadcasterDetails-1>0</broadcasterDetails-1>
      <broadcasterDetails-2>0</broadcasterDetails-2>
      <SiEventDescription>
        <eventName>Big Movie</eventName>
        <eventDescription>First Big Movie</eventDescription>
      </SiEventDescription>
    </SiEventDetail>
  </SiEventDetails>
  <SiEventSchedule deleteStart="2002/10/12 09:00:00"
    deleteEnd="2002/10/12 15:00:00">
    <siService>Movies One</siService>
    <activationSource>Movies One</activationSource>
    <playoutSource>Movies One</playoutSource>
    <SiEvent>
      <siTrafficKey>SDF:TRF:IPPV:1</siTrafficKey>
      <displayDateTime>2002/10/12 09:00:00</displayDateTime>
      <displayDuration>02:00:00</displayDuration>
      <activationDateTime>2002/10/12 09:00:00</activationDateTime>
      <detailKey>SED:IPPV:1</detailKey>
      <SourceEvent/>
    </SiEvent>
    <SiEvent>
      <siTrafficKey>SDF:TRF:IPPV:2</siTrafficKey>
      <displayDateTime>2002/10/12 11:00:00</displayDateTime>
      <activationDateTime>2002/10/12 11:00:00</activationDateTime>
      <displayDuration>02:00:00</displayDuration>
      <detailKey>SED:IPPV:1</detailKey>
      <SourceEvent/>
    </SiEvent>
    <SiEvent>
      <siTrafficKey>SDF:TRF:IPPV:3</siTrafficKey>
      <displayDateTime>2002/10/12 13:00:00</displayDateTime>
      <displayDuration>02:00:00</displayDuration>
      <detailKey>SDF:IPPV:1</detailKey>
      <SourceEvent/>
    </SiEvent>
  </SiEventSchedule>
</BasicImport>
```

Figure 4 Example of a Service Schedule for an NVOD PPV service.

C.2 TransportConfiguration/ ServiceConfiguration Export

The following examples demonstrate exports of a TransportConfigurationItem and ServiceConfigurationItem.

In Figure 5 example of TransportConfiguration export, it can be seen that playoutSource 'Data1' has two components: the first is mapped to two services ('Service1' and 'Service2'), the second to only one (Service2). In Figure 6

example of ServiceConfiguration export, the last ServiceComponentItem is not mapped to any SourceComponentItem as the component specified does not exist on the transport.


```
<?xml version="1.0" encoding="UTF-8"?>
<BasicExport UTCOffset="+00:00" frameRate="25">
  <TransportConfigurationList>
    <TransportConfigurationItem>
      <transport>Outstream 1 - Satellite</transport>
      <mpegTransportId>1</mpegTransportId>
      <longDescription>Outstream 1</longDescription>
      <SourceDefinitionItem>
        <playoutSource>TV1</playoutSource>
        <activationSource>CHRONOLOGICAL</activationSource>
        <activationDateTime>2003/09/05 00:00:00</activationDateTime>
        <SourceComponentItem>
          <componentType>Video</componentType>
          <componentNumber>0</componentNumber>
          <componentClass>1234</componentClass>
          <classDescription>Video, 4:3, NR</classDescription>
          <classLongDescription>Video 4:3</classLongDescription>
          <ServiceComponentItem>
            <siService>Service1</siService>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/12/10 00:00:00</activationDateTime>
          </ServiceComponentItem>
        </SourceComponentItem>
        <SourceComponentItem>
          <componentType>Audio</componentType>
          <componentNumber>0</componentNumber>
          <componentClass>2234</componentClass>
          <classDescription>Stereo Audio 192kbps</classDescription>
          <classLongDescription>Stereo Audio</classLongDescription>
          <componentLanguage>eng</componentLanguage>
          <ServiceComponentItem>
            <siService>Service1</siService>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/12/10 00:00:00</activationDateTime>
          </ServiceComponentItem>
        </SourceComponentItem>
        <SourceComponentItem>
          <componentType>Teletext</componentType>
          <componentNumber>0</componentNumber>
          <componentClass>7234</componentClass>
          <classDescription>Teletext subtitles from
P888</classDescription>
          <longDescription>subtitles for Service 1</longDescription>
          <ServiceComponentItem>
            <siService>Service1</siService>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/12/10 00:00:00</activationDateTime>
          </ServiceComponentItem>
        </SourceComponentItem>
      </SourceDefinitionItem>
    </SourceDefinitionItem>
  </TransportConfigurationList>
</BasicExport>
```

```

<playlistSource>Data1</playlistSource>
<activationDateTime>2003/09/05 00:00:00</activationDateTime>
<SourceComponentItem>
  <componentType>ASI</componentType>
  <componentNumber>0</componentNumber>
  <componentClass>8234</componentClass>
  <classDescription>Data DSM-CC carousel</classDescription>
  <longDescription>Interactive Applications</longDescription>
  <ServiceComponentItem>
    <siService>Service1</siService>
    <activationSource>CHRONOLOGICAL</activationSource>
    <activationDateTime>2003/12/10 12:00:00</activationDateTime>
  </ServiceComponentItem>
  <ServiceComponentItem>
    <siService>Service2</siService>
    <activationSource>CHRONOLOGICAL</activationSource>
    <activationDateTime>2003/12/10 12:00:00</activationDateTime>
  </ServiceComponentItem>
</SourceComponentItem>
<SourceComponentItem>
  <componentType>ASI</componentType>
  <componentNumber>1</componentNumber>
  <componentClass>8234</componentClass>
  <classDescription>Data DSM-CC carousel</classDescription>
  <longDescription>Interactive Applications</longDescription>
  <ServiceComponentItem>
    <siService>Service2</siService>
    <activationSource>CHRONOLOGICAL</activationSource>
    <activationDateTime>2003/12/10 12:00:00</activationDateTime>
  </ServiceComponentItem>
</SourceComponentItem>
</SourceDefinitionItem>
</TransportConfigurationItem>
</TransportConfigurationList>
</BasicExport>

```

Figure 5 example of TransportConfiguration export

```
<?xml version="1.0" encoding="UTF-8"?>
<BasicExport utcOffset="+00:00" frameRate="25">
  <ServiceConfigurationList>
    <ServiceConfigurationItem>
      <siService>Service1</siService>
      <ServiceTransportItem>
        <transport>Outstream 1 - Satellite</transport>
        <activationSource>CHRONOLOGICAL</activationSource>
        <activationDateTime>2003/09/05 00:00:00</activationDateTime>
      </ServiceTransportItem>
      <ServiceStatusItem>
        <runningStatus>Running</runningStatus>
        <activationSource>CHRONOLOGICAL</activationSource>
        <activationDateTime>2003/09/05 00:00:00</activationDateTime>
      </ServiceStatusItem>
      <ServiceDefinitionItem>
        <activationSource>CHRONOLOGICAL</activationSource>
        <activationDateTime>2003/12/10 00:00:00</activationDateTime>
        <ServiceComponentItem>
          <playoutSource>TV1</playoutSource>
          <componentType>Video</componentType>
          <componentNumber>0</componentNumber>
          <SourceComponentItem>
            <transport>Outstream 1 - Satellite</transport>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/09/05 00:00:00</activationDateTime>
          </SourceComponentItem>
        </ServiceComponentItem>
        <ServiceComponentItem>
          <playoutSource>TV1</playoutSource>
          <componentType>Audio</componentType>
          <componentNumber>0</componentNumber>
          <SourceComponentItem>
            <transport>Outstream 1 - Satellite</transport>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/09/05 00:00:00</activationDateTime>
          </SourceComponentItem>
        </ServiceComponentItem>
        <ServiceComponentItem>
          <playoutSource>TV1</playoutSource>
          <componentType>Teletext</componentType>
          <componentNumber>0</componentNumber>
          <SourceComponentItem>
            <transport>Outstream 1 - Satellite</transport>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/09/05 00:00:00</activationDateTime>
          </SourceComponentItem>
        </ServiceComponentItem>
        <ServiceComponentItem>
          <playoutSource>Data1</playoutSource>
          <componentType>ASI</componentType>
```

```

        <componentNumber>0</componentNumber>
        <SourceComponentItem>
            <transport>Outstream 1 - Satellite</transport>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/09/05 00:00:00</activationDateTime>
        </SourceComponentItem>
    </ServiceComponentItem>
    <ServiceComponentItem>
        <playoutSource>Data1</playoutSource>
        <componentType>ASI</componentType>
        <componentNumber>2</componentNumber>
        <SourceComponentItem>
            <transport>Outstream 1 - Satellite</transport>
            <activationSource>CHRONOLOGICAL</activationSource>
            <activationDateTime>2003/09/05 00:00:00</activationDateTime>
        </SourceComponentItem>
    </ServiceComponentItem>
</ServiceDefinitionItem>
</ServiceConfigurationItem>
</ServiceConfigurationList>
</BasicExport>

```

Figure 6 example of ServiceConfiguration export

Appendix D Parameters and Types

The following two tables describe the types of the parameter elements referenced within this document.

Table 66 parameters

parameter	Type
action	ssr:entryActionType/ssr:exportActionType
activationDateTime	ssr:basicDateTimeType
activationOffset	ssr:basicTimeOffsetType
activationSource	ssr:uiDescrType
activationSourceId	ssr:number4Type
aliasSiService	ssr:uiDescrType
aliasSiServiceId	ssr:number4Type
bouquet	ssr:uiDescrType
bouquetId	ssr:unsigned16Type
broadcasterDetail-1	ssr:unsigned4Type
broadcasterDetail-2	ssr:unsigned4Type
caCriterionId	ssr:keyType
caProductId	ssr:keyType
caRequestKey	ssr:keyType
caServiceId	ssr:unsigned16Type
caTemplate	ssr:uiDescrType
caTemplateId	ssr:number6Type
category	ssr:uiDescrType
categoryId	ssr:number6Type
classDescription	ssr:uiDescrType
classlongDescription	ssr:notesType
combinationOptionId	ssr:number2Type
componentClass	ssr: number6Type
componentLanguage	ssr:languageType

parameter	Type
componentName	ssr:string40Type
componentNumber	ssr:number2Type
componentTag	ssr:unsigned8Type
componentType	ssr:componentTypeType
criterionType	ssr:caCriterionTypeType
<u>currency</u>	<u>ssr: uiDescrType</u>
<u>currencyId</u>	<u>ssr: unsigned16Type</u>
dataSource	ssr: uiDescrType
dataSourceId	ssr:number4Type
deleteEnd	ssr:basicDateTimeType
deleteStart	ssr:basicDateTimeType
description	ssr:uiDescrType
detailKey	ssr:keyType
displayDateTime	ssr:basicDateTimeType
displayDuration	ssr:basicDurationType
displayLanguage	ssr:languageType
duration	ssr:basicDurationType
dvbOriginalNetworkId	ssr:unsigned16Type
dvbServiceId	ssr:unsigned16Type
dvbServiceType	ssr:unsigned8Type
entryPointFlag	ssr:flagType
epgInfoBits	ssr:string16Type
errorCode	String
eventDescription	ssr:string750Type
eventExtendedDescription	ssr:string2000Type
eventName	ssr:string750Type
frameRate	ssr:frameRateType
genreId	ssr:unsigned8Type

parameter	Type
groupKey	ssr:keyType
groupType	ssr:groupTypeType
height	ssr:mosaicDimensionType
horizontalBlocks	ssr:mosaicDimensionType
itemName	ssr:string750Type
itemNum	ssr:number2Type
itemValue	ssr:string750Type
itvId	ssr:keyType
itvTrafficKey	ssr:keyType
link	ssr:uiDescrType
linkSiService	ssr:uiDescrType
linkSiServiceId	ssr:number4Type
longDescription	ssr:notesType
mainEventDateTime	ssr:basicDateTimeType
mandatoryParameter	ssr:flagType
maxOrderNum	ssr:unsigned16Type
message	String
mosaic	ssr:uiDescrType
mpegTransportId	ssr:unsigned16Type
nodeId	String
oppvPurchaseCode	ssr:number5Type
orderNum	ssr:unsigned16Type
parameterNumber	ssr:number2Type
parameters	ssr:numberParamsType
parameterType	ssr:uiDescrType
parameterValue	ssr:string2000Type
parentalRating	ssr:uiDescrType
parentalRatingId	ssr:parRatingIdType

parameter	Type
playoutEventKey	ssr:keyType
playoutSource	ssr:uiDescrType
playoutSourceId	ssr:number4Type
playoutTrafficKey	ssr:keyType
presentationInfo	ssr:presInfoType
<u>price</u>	<u>ssr:unsigned16Type</u>
productExpiryDateTime	ssr:basicDateTimeType
productStartDateTime	ssr:basicDateTimeType
productType	ssr:caProductTypeType
programKey	ssr:keyType
pushMetadata	ssr:unsigned8Type
refSiService	ssr:uiDescrType
refSiServiceId	ssr:number4Type
replacementDateTime	ssr:basicDateTimeType
replacementSiService	ssr:uiDescrType
replacementSiServiceId	ssr: number4Type
runningStatus	ssr:serviceRunningStatusType
scheduleType	ssr:playoutSourceScheduleType
selectEnd	ssr:basicDateTimeType
selectStart	ssr:basicDateTimeType
seriesKey	ssr:keyType
siService	ssr:uiDescrType
siServiceDescription	ssr:string750Type
siServiceId	ssr:number4Type
siServiceName	ssr:string750Type
siServiceProvider	ssr:string750Type
siTrafficKey	ssr:keyType
ssrServiceTypeId	ssr:number3Type
subGenreId	ssr:unsigned8Type

parameter	Type
title	ssr:string40Type
transactionIdentifier	ssr:string750Type
transport	ssr:uiDescrType
transported	ssr:number3Type
utcOffset	ssr:utcOffsetType
valueFormat	ssr:string20Type
valueRange	ssr:string20Type
verticalBlocks	ssr:mosaicDimensionType
viewerChannelNum	ssr:unsigned16Type
warningDuration	ssr:warningDurationType
width	ssr:mosaicDimensionType
xPosition	ssr:mosaicDimensionType
yPosition	ssr:mosaicDimensionType

Table 67 type descriptions

Type	Description
ssr:basicDateTimeType	String type of the format \d{4}/\d{2}/\d{2}\d{2}:\d{2}:\d{2}(:\d{2})? with a value between 1995/10/10 00:00:00:00 and 2038/04/22 00:00:00:00 inclusive. Time component must be less than 24:00:00:00
ssr:basicDurationType	String type of the format \d{2}:\d{2}:\d{2}(:\d{2})? with value between 00:00:00:00 and 24:00:00:00 inclusive
ssr:basicTimeOffsetType	String type of the format \d{2}:\d{2}:\d{2}(:\d{2})? with value between 00:00:00:00 and 24:00:00:00 inclusive
ssr:caCriterionTypeType	Enumerated string with the following values: 'Product', 'Region', 'Zipcode', 'Zone'.
ssr:caProductTypeType	Enumerated string type with the following values: 'Subscription', 'IPPV Only', 'OPPV Only', 'IPPV and OPPV', 'Subscription and OPPV', 'XTV', 'XTV and OPPV', 'Impulse Subscription Upgrade'

Type	Description
ssr:componentTypeType	Enumerated string type with the following values: 'Video', 'Audio', 'Teletext', 'Subtitle', 'ASI', 'Data'.
ssr:entryActionType	Enumerated string type with the following values: 'insert', 'update', 'delete'.
ssr:exportActionType	Enumerated string type with the following values: 'update', 'delete'.
ssr:flagType	Enumerated string type with the following values: 'TRUE', 'FALSE'.
ssr:frameRateType	enumerated integer with the following values: 25, 30
ssr:groupTypeType	enumerated string type with the following values: 'Series', 'Push', 'Pull', 'PushVOD'.
ssr:keyType	String type restricted to 20 characters.
ssr:languageType	String restricted to 3 characters. Expected to be an ISO-639 3-character language code. ISO language codes must be defined in StreamServer before they can be used.
ssr:mosaicDimensionType	Integer type in the range 1..8
ssr:notesType	String type restricted to 1000 bytes.
ssr:numberParamsType	Integer in range 0..100
ssr:number2Type	Integer in the range 0..99.
ssr:number3Type	Integer in the range 0..999.
ssr:number4Type	Integer in the range 0..9999.
ssr:number5Type	Integer in the range 0..99999.
ssr:number6Type	Integer in the range 0..999999.
ssr:parRatingIdType	Integer in range 0..63.
ssr:playoutSourceScheduleType	Enumerated string type with the following values: 'Internal', 'Normal', 'Software Download', 'Video Inset', 'Stills'
ssr:presInfoType	Enumerated string type with the following values: 'undefined', 'video', 'still', 'text'
ssr:serviceRunningStatusType	Enumerated string type with the following values: 'Running', 'Not Running'
ssr:string16Type	String type restricted to 16 bytes.
ssr:string20Type	String type restricted to 20 bytes.

Type	Description
ssr:string40Type	String type restricted to 40 bytes.
ssr:string100Type	String type restricted to 100 bytes.
ssr:string120Type	String type restricted to 120 bytes. [Capable of holding at least 40 Unicode characters]
ssr:string750Type	String type restricted to 750 bytes. [Capable of holding at least 250 Unicode characters]
ssr:string2000Type	String type restricted to 2000 bytes.
ssr:timeOffsetType	String type of the format (\+ \-)?\d{3}:\d{2}:\d{2}(\:\d{2})?
ssr:uiDescrType	String type restricted to 40 bytes.
ssr:unsigned4Type	Integer type in the range 0..15
ssr:unsigned8Type	Integer type in the range 0..255
ssr:unsigned16Type	Integer type in the range 0..65535
ssr:utcOffsetType	String type of format (\+ \-)\d{2}:\d{2}
ssr:warningDurationType	Integer in range 0..1200.

Appendix E CA Template Parameter Types

CA Templates have parameter types that are used when defining CA Template parameters. Table 68: CA Template Parameter Types describes the types that are currently supported. Each type identifies the value format and the maximum allowed range. When a CA template parameter is defined, the value format and range may be restricted further to satisfy a business requirement.

Table 68: CA Template Parameter Types

parameter type	format	range	notes
TimeOffset-Universal	MJD	-366.0..1.0	Identifies a relative time value. Range is in days and type is conveyed in XML as <code>ssr:timeOffsetType</code>
CAProduct-Universal	20A	n/a	CA Product
Time-Universal	MJD	50000.0..65535.0	Identifies an absolute date/time value. Range converts to 1995/10/10 00:00:00:00 through 2038/04/22 00:00:00:00 and type is conveyed in XML as <code>ssr:basicDateTimeType</code>
Binary-Universal	1D	0..1	Used for flag types.
Price-Universal	5D	0..65535	Price value, currency or tokens.
Decimal Integer-Universal	6D	0..999999	
ParentalRating	2D	0..23	
FreeView	1D	0..2	Indicates whether the content is available freely, available via soft scrambling, or will be scrambled. 0: Scrambled 1: Soft scrambled 2: Free
TapingCtrl	1D	0,3	Indicates what kind of taping will be allowed for PPV content. 0: No taping 3: Taping Allowed
CACriterion	20A	n/a	Criterion used in constructing a blackout.

parameter type	format	range	notes
CASeries	5D	1..66535	Card CA Series identifier for use in IPPV purchases.
SubscriptionTapingCtrl	1D	0..3	Indicates what kind of taping is allowed on subscription services: 0: No taping 1: allowed by 1 st tier 2: allowed by 1 st /2 nd tier 3: allowed by 1 st /2 nd /3 rd tier
Zipcode	8A	n/a	Zipcode used in a blackout.
BonusPointAward	2D	0..15	Points awarded for purchasing content.
CAZone	20A	n/a	CAZone used in blackout.
CountryCode	3A		ISO Country code.
CombinationOption	2D	0..99	Combination Option

Formats are described using the following notation:

Table 69: Format descriptions

format	description
[nV]D	A decimal integer string of up to <i>n</i> characters length, or of variable length.
[nV]A	An ASCII string of up to <i>n</i> characters in length, or of variable length.
[nV]H	A hexadecimal string of up to <i>n</i> characters in length, or of variable length.
MJD	A string containing a modified Julian date of 5.7 precision

Ranges are described using the following notation:

Table 70: Range descriptions

format	description
j..k	The parameter value will fall within these bounds. The bounds will conform to the format of the parameter.
(j, k, l, m)	The parameter value will match an item in the bracketed enumerated list.

Appendix F Project-Specific Fixed Values

For specific projects, agreement has been reached over the values that will be used for some identifiers. These identifiers and their values are documented here.

F.1 Generic NDS MediaHighway VGH projects

F.1.1 Genres (Content Nibbles)

genreId and subGenreId are StreamServer identifiers that map to values used in the DVB Content nibbles. There will be a one to one mapping between the value of the StreamServer identifiers and the DVB values used.

Values will be taken from the DVB SI Specification (reference 4)

F.1.2 User Nibbles


broadcasterDetails-1 and broadcasterDetails-2 will take the values documented here:

Table 71: values for bits of broadcasterDetail-1 parameter

Bit Number	Meaning
0	Multi-lingual flag. If set an icon is displayed by the EPG to indicate that the content is available in more than one audio language. This bit will be overridden by StreamServer based on the components scheduled for an event.
1	Reserved for future use. Shall be set to 0.
2	FECM Flag. If set this bit indicates that a FECM is available for this content. As of StreamServer V9, this bit is overridden by StreamServer and so its value is unimportant.
3	IPPV Flag. If set this bit indicates that the event is IPPV purchasable. As of StreamServer V9, this bit is overridden by StreamServer and so its value is unimportant.

broadcasterDetail-2 is used to get the EPG to display various icons. Table 72 gives the mapping between values and the icons displayed.

Table 72: values for broadcasterDetails-2 parameter

Value	Children Icon	Family Icon	Language Icon	Violence Icon	Horror Icon	Adult Icon
0						
1						

Value	Children Icon	Family Icon	Language Icon	Violence Icon	Horror Icon	Adult Icon
2		✓				
3		✓	✓			
4			✓			
5			✓	✓		
6			✓		✓	
7			✓			✓
8			✓	✓		✓
9			✓		✓	✓
10				✓		
11				✓	✓	
12				✓		✓
13					✓	
14					✓	✓
15						✓

Appendix G Error Codes

The following table lists the error codes that can be returned by SSR in an error report. This list is not exhaustive and SSR development should be consulted for any additions to this list

Table 73 Error Codes

Error Code	Meaning
0x0000	reserved
0x0100	General client error i.e. error in XML document.
0x0101 .. 0x01FF	reserved
0x0200	general server error i.e. error in modifying SSR
0x0201	transactionIdentifier too old.
0x0202 .. 0x02FF	reserved
0x0300 .. 0xFFFF	reserved

Appendix H Outstanding Issues

Need to validate examples.

Change History

Revision 2.02

Revision date: 9 May 2012 – merge changes from VGH-ICD-004

Location	Change
SiEventSellPrice, alternate parameter list	add SiEventSellPrice
siEventDescription	add eventMarketingMessage
siEventDescription	add eventSort
SiEventDetail	add catchupFlag

Revision 2.01

Revision date: 10 March 2009

Location	Change
Section 4	Add SiEventItemisedDescription
all	Reformatted/aligned with later ICD

Legacy Document change history is recorded here.

Issue	Date	Comments
1	4 Nov 2005	Initial ICD based on es.ic.ssrxml.mb002.3g Added epgInfoBits, ssr:string16Type, oppvPurchaseCode and ssr:number5Type
2	3 Jan 2006	Added Clear action to CaRequest