Samsung TV PLUS Channel Data Specification

Version 1.07

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Contents

Version History

Revision	Date	Author	Changes
v.1.00	2018-04-13	Yun-Jeong Cho (yj50.cho@samsung.com)	First version.
v.1.01	2018-10-25	Jinhong Kim (j727.kim@samsung.com)	Group's title, Schedule's program_type length modify
v.1.02	2018-11-06	Taehyeong Lee (thyeong.lee@samsung.com)	Program Monitoring API add more parameter and reponse
v.1.03	2019-01-30	Jinhong Kim (j727.kim@samsung.com)	Post feed case's error messege modification
v.1.04	2019-02-21	Jinhong Kim (j727.kim@samsung.com)	Parameter Error code add and error code response minor fix
v.1.05	2019-04-25	Yun-Jeong Cho (yj50.cho@samsung.com)	Add "external_ids", "original_air_date" field to program Add new genres to Appendix B: Program Genres
v.1.06	2019-06-04	Jinhong Kim (j727.kim@samsung.com)	Add USA TV Rating information
v.1.07	2019-08-29	Jinhong Kim (j727.kim@samsung.com)	Player Spec Delete. Add CA, AU, MX, BR, RU rating Edit EU region, TH rating Data Manual part add. Group's title length modify Add Program image size recommendation comment

1   Introduction

This document describes the data feed API that interfaces between the TV PLUS server and the content provider's server.

To offer content to TV users through TV PLUS, the content provider must deliver content metadata and scheduling information to the TV PLUS server. This data transfer is done by HTTP GET and POST requests that transmit channel data as JSON objects.

1.1   Channel Data Structure

The following entity relationship diagram shows a simplified structure of the channel metadata and scheduling information.
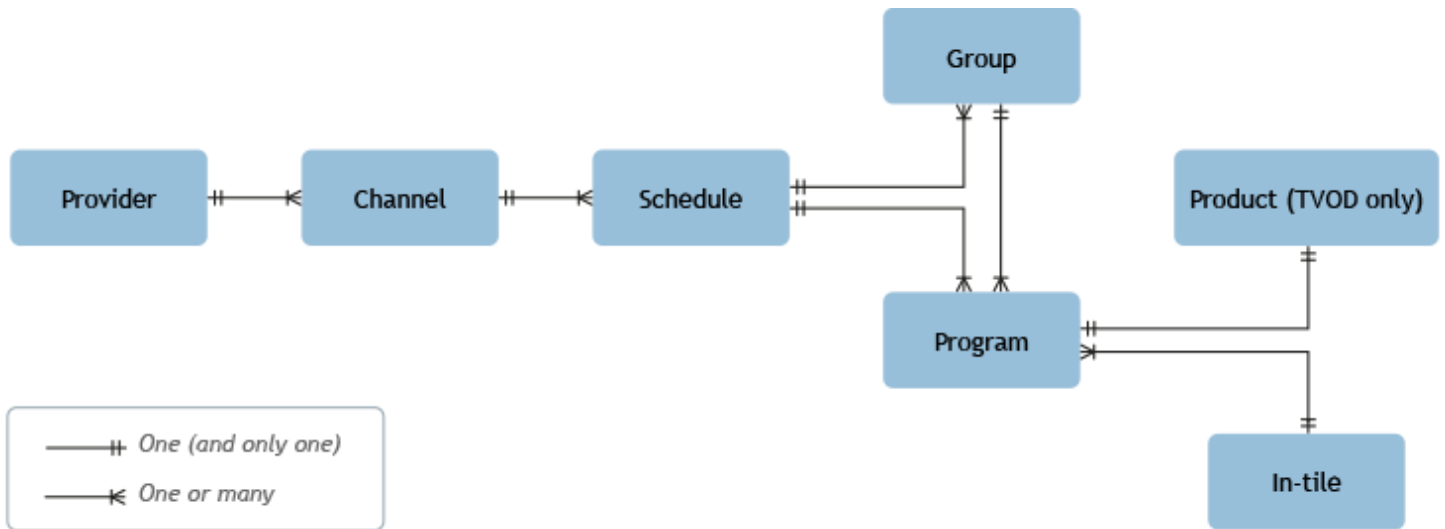

Figure 1: Channel data structure

1.2 **API Call Sequence**

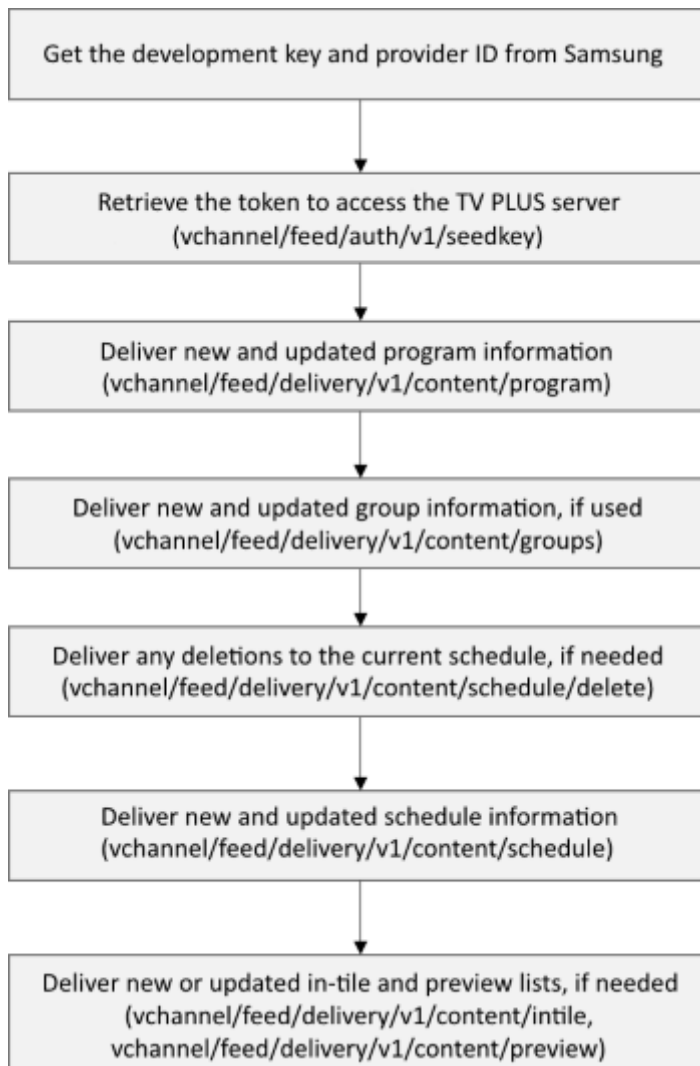This section describes the required sequence for API calls for a delivery operation.

Figure 2: Delivery operation API call sequence

1.3 **TV PLUS Server URLs**

The following table lists the URLs for the TV PLUS servers for different regions.

There are two TV PLUS servers for each region, one for Samsung internal QA (staging server) and the other for regular operation (production server). The same data needs to be delivered to both servers.

Region	TV PLUS server URL
EU	Staging: • Direct: https://vcapi-eustg.samsungcloudsolution.com • Web testing: https://vcfeed-stg.samsungcloudsolution.com/redmine/testpages/stg_eu/Index.htm Production: • Direct: https://vcapi-eu.samsungcloudsolution.com • Web testing: https://vcfeed.samsungcloudsolution.com/redmine/testpages/prod_eu/Index.htm
USA, Korea, and Thailand	Staging: • Direct: https://vcapi-usstg.samsungcloudsolution.com • Web testing: https://vcfeed-stg.samsungcloudsolution.com/redmine/testpages/stg_us/Index.htm Production: • Direct: https://vcapi-us.samsungcloudsolution.com • Web testing: https://vcfeed.samsungcloudsolution.com/redmine/testpages/prod_us/Index.htm

1.4 **Message Protocol**

This section describes the message protocol used by the data feed API.

The following table lists the HTTP request methods used by the data feed API, which follows the Representational State Transfer (REST) design principle.

Request Method	Description
GET	Requesting resources or information, or searching for a string.
POST	Creating a new entry, or requesting a key or token.
PUT	Updating an entry or a list or resources.
DELETE	Deleting an entry.

The following table lists the override headers used for REST methods.

REST	Override Header
HTTP PUT	X-HTTP-Method-Override: PUT
HTTP DELETE	X-HTTP-Method-Override: DELETE

The following table lists the HTTP status codes that can be returned by API calls.

HTTP Status	HTTP Message
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
405	Method Not Allowed
406	Not Acceptable
408	Request Timeout
409	Conflict
411	Length Required
413	Payload Too Large
415	Unsupported Media Type
500	Internal Server Error
501	Not Implemented
503	Service Unavailable

The following table lists the timeout policy for API requests.

Name	Value	Description
Connection timeout	10	Number of seconds after which a server-side connection timeout occurs.

Name	Value	Description
Retry	3	If a timeout occurs, connection is retried 3 times.

1.5 Message Headers

This section describes the common header fields for HTTP requests and responses used in the API calls.

1.5.1 HTTP Request Header

The following table describes the header fields used in all HTTP requests sent to the TV PLUS server.

Field	Description
Content-Type	Data type of the body in the request message. For example: "Content-Type: application/xml; charset=utf-8"
Content-Length	Length of the message body (in bytes). For example: "Content-Length: 100"
Token	Authorization token to access the TV PLUS server. **Note:** This field is omitted from the header for an access token retrieval API request.
Accept	Media type. For example: "Accept: application/xml"
Cache-Control	Caching mechanism for the request. Default value: "no-cache". For example: "Cache-Control: no-cache"
Accept-Encoding	Encoding type. For example: "Accept-Encoding: gzip, deflate"

1.5.2 HTTP Response Header

The following table describes the header fields used in all HTTP responses from the TV PLUS server.

Field	Description
Content-Type	Data type of the body in the response message. For example: "Content-Type: application/xml; charset=utf-8"
Content-Length	Length of the message body (in bytes). For example: "Content-Length: 100"

2 Access Token Retrieval API

Description

Request Name	vchannel/feed/auth/v1/seedkey
Request Method	GET
Function	Get a token to access the TV PLUS server.
Protocol	HTTPS only.
Server Cache	Yes (CDN).

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
devkey	String	True	100	Unique key for auth, received from Samsung during the channel setup.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
provider_name	String	True	50	Your own content provider name, received from Samsung during the channel setup.

Request Example

```
GET vchannel/feed/auth/v1/seedkey HTTP/1.1
Content-Type: application/xml; charset=utf-8
Content-Length: 0
Accept: text/xml, application/xml, application/json
Host: obs.scs.com
Date: 2018-03-01T15:00:00+00:00
Cache-Control: no-cache
Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	connected	If the request was successful, contains the access token value.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "connected": {
      "token": " X3FQiD0Q2njBegCq45wgTkHV1M5QBB5y-TkHV1M5QBB5yTXxIaSR5fa9QgMMIwGksimviak"
    }
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "fail",
    "err": {
      "code": "101100",
      "msg": "Invalid Dev. Key"
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev. Key

3   Channel Data Delivery APIs

This section details the APIs used for delivering content from the content provider's feeding server to the TV PLUS server.

3.1   Delivering Programs

Description

Request Name	vchannel/feed/delivery/v1/content/program
Request Method	POST
Function	Deliver program content information to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	Yes.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the program is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/program?country=KR&provider_id= KRQT123456A HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{
```

```
    <Program object>
}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	content	If the request was successful, contains the ID values of the delivered program items.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "content": [
      {
        "program_id": "cpprogramownid"
      }
    ]
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Value check failed on an element",
      "desc": "program[0].id has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.2 **Delivering Groups**

Description

Request Name	vchannel/feed/delivery/v1/content/groups
Request Method	POST
Function	Deliver group content information (list of programs) to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the group is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/groups?country=KR&provider_id= KRQT123456A HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  <Group_object>

}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	content	If the request was successful, contains the ID values of the delivered group items.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  rsp": {
    "stat": "OK",
    "content": [
      {
        "group_id": "sm0499549"
      }
    ]
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Value check failed on an element",
      "desc": "groups[0].groupd_id has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.3 **Delivering the Schedule**

Description

Request Name	vchannel/feed/delivery/v1/content/schedule
Request Method	POST
Function	Deliver content scheduling information (list of schedule items for programs or groups already stored on the TV PLUS server) to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	Yes.
Notes	A POST request for a Schedule object works as an UPSERT operation. The TV PLUS server stores the entire schedule until a schedule/delete API is received. If a schedule conflict occurs, the latest schedule (based on the "schedule_id" value of the schedule item) has priority.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the schedule is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/schedule?country=KR&provider_id=
KRQT123456A&service_id=KRAG9876543 HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0
```

```
Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  <Schedule object>

}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	content	If the request was successful, contains the ID values of the delivered schedule items.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "content": [
      {
        "schedule_id": "CPOWNSCHEDULEID"
      }
    ]
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Value check failed on an element",
      "desc": "schedule[0].schedule_id has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101306	Invalid datetime format
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.3.1 Delivering Deletions for the Schedule

Description

Request Name	vchannel/feed/delivery/v1/content/schedule/delete
Request Method	POST
Function	Deliver a request to delete a specific schedule item from the TV PLUS server.
Protocol	HTTPS only.
Server cache	Yes.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the schedule to be deleted has been shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.

Request Variables

Element	Attribute	Description
schedule	service_id	Service ID of your channel, received from Samsung during the channel setup.
	program_id	ID of the program or group whose schedule item is being deleted.
	schedule_id	ID of the schedule item being deleted.

Request Example

```
POST vchannel/feed/delivery/v1/content/schedule/delete?country=KR&provider_id=
KRQT123456A&service_id=KRAG9876543 HTTP/1.1

Token:4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{
  "schedule": [
    {
      "service_id": "004dea5EX",
      "program_id": "CPOWNPROGRAMID",
      "schedule_id": "CPOWNSCHEDULEID"
```

```
    }
  ]
}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
  }
}
```

Response Example for Failure

```
{
  rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Null value check failed on a mandatory element",
      "desc": "program[0].id has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format

HTTP Status Code	Error Code	Error Message
400	101305	Value check failed on an element
400	101306	Invalid datetime format
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.4 **Delivering the In-tile List**

Description

Request Name	vchannel/feed/delivery/v1/content/intile
Request Method	POST
Function	Deliver the categorized in-tile list content (consisting of programs already stored on the TV PLUS server) to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the in-tile list is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/intile?country=KR&provider_id=
KRQT123456A&service_id=KRAG9876543 HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

```
{
  <In-tile object>
}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	content	If the request was successful, contains the ID values of the delivered in-tile categories.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "content": [
      {
        "category_id": "sm0499549"
      }
    ]
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101312",
      "msg": "Mandatory element is missing.",
      "desc": "category_id or category_name is required. element sequence: 1"
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.5   Delivering the Preview List

Description

Request Name	vchannel/feed/delivery/v1/content/preview
Request Method	POST
Function	Deliver the content list (consisting of programs already stored on the TV PLUS server) to be shown in the preview list of the Eden launcher to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the preview list is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/preview?country=KR&provider_id=KRQT123456A HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  <Preview object>

}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	content	If the request was successful, contains the ID of the delivered preview list.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "content": {
        "preview_id": "pre00123"
    }
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Value check failed on an element",
      "desc": "preview.id has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101100	Invalid Dev-key
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101312	Mandatory element is missing
400	101406	Invalid Parameter
400	101412	Invalid Session Token
400	101415	Invalid Country
502	101502	Internal Server Error

3.6 **Delivering Products**

Description

Request Name	vchannel/feed/delivery/v1/content/product
Request Method	POST
Function	Deliver product detail information to the TV PLUS server.
Protocol	HTTPS only.
Server Cache	Yes.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the product is to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.

Request Example

```
POST vchannel/feed/delivery/v1/content/product?country=KR&provider_id=KRQT123456A

HTTP/1.1

Token:4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml,application/xml,application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  <Product object>

}
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	product	If the request was successful, contains the ID values of the programs that products were delivered for.
	err	If the request failed, contains the error code and message.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "product": {
      [PROGRAM ID LIST]
    }
  }
}
```

Response Example for Failure

```
{
  "rsp": {
    "stat": "Fail",
    "err": {
      "code": "101305",
      "msg": "Value check failed on an element",
      "desc": "product0].offers has invalid value."
    }
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
400	101303	Length check failed on an element
400	101304	Invalid JSON format
400	101305	Value check failed on an element
400	101306	Invalid datetime format
400	101312	Mandatory element is missing

4 Channel Data Checking APIs

This section details the APIs used for checking content that has already been delivered to the TV PLUS server.

4.1 Checking Programs

Description

Request Name	vchannel/feed/monitor/v1/content/program
Request Method	GET
Function	Retrieve the current program content from the TV PLUS server for checking purposes.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the programs were set to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
start	Int	False	8	Start number for the programs being retrieved. They are arranged in a decreasing order by their delivery/update date. Optional value. The default is 1.
num	Int	False	3	Number of retrieved programs. The default and maximum value is 100 (for performance reasons).
title	String	False	127	Title for searching program. If missing title and tag parameter then function doesn't

				run search operation.
tag	String	False	127	Tag for searching program. If missing title and tag parameter then function doesn't run search operation.

Request Example

```
GET vchannel/feed/monitor/v1/content/program?country=us&provider_id=A3389&start=1&num=90&
tag=politics%2Cthriller&title=house%20of%20cards  HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	total_count	The number of program list. If title or tag parameter exists, total_count shows the number of program list related with parameter. Otherwise total_count shows the number of total program provider has.
	program	If the request was successful, contains the retrieved program items.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "total_count": 1,
    "program": <Program object content>
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
404		

4.2 Checking Groups

Description

Request Name	vchannel/feed/monitor/v1/content/groups
Request Method	GET
Function	Retrieve the current group content from the TV PLUS server for checking purposes.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the groups were set to be shown.

provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
start	Int	False	8	Start number for the groups being retrieved. They are arranged in a decreasing order by their delivery/update date. Optional value. The default is 1.
num	Int	False	3	Number of retrieved groups. The default and maximum value is 100 (for performance reasons).

Request Example

```
GET vchannel/feed/monitor/v1/content/groups?country=us&*provider_id&start=1&num=10 HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	group	If the request was successful, contains the retrieved group items.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "group": <Group object content>
  }
```

```
}
```

Error Codes

HTTP Status Code	Error Code	Error Message

4.3 Checking the Schedule

Description

Request Name	vchannel/feed/monitor/v1/content/schedule
Request Method	GET
Function	Retrieve the current schedule content from the TV PLUS server for checking purposes.
Protocol	HTTPS only.
Server Cache	Yes.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the schedule was set to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.
starttime	Datetime	False	24	Start time for the time period whose schedule items you want to retrieve.

endtime	Datetime	False	24	End time for the time period whose schedule items you want to retrieve.

Request Example

```
GET
vchannel/feed/monitor/v1/content/schedule?country=us&provider_id=A3389&service_id=3010&starttim
e=2015-03-16T14:00:00Z&endtime=2015-03-20T14:00:00Z HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	schedule	If the request was successful, contains the retrieved schedule items.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "schedule": <Schedule object content>
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message

404		

4.3.1 Checking Schedule Conflicts

Description

Request Name	vchannel/feed/monitor/v1/content/gapnoverlap
Request Method	GET
Function	Retrieve information about schedule conflicts, such as gaps or overlaps. They interfere with the continuity of a schedule and require corrective actions.
Description	A TV PLUS channel must have a complete schedule to play content, however, sometimes a submitted schedule contains inconsistent data. This API can be used to retrieve the schedules whose "starttime" or "duration" parameters need to be adjusted to avoid gaps and overlaps.
Protocol	HTTPS only.
Server Cache	Yes.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the schedule was set to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.
starttime	Datetime	False	24	Start time for the schedule time period whose validity you want to check. The default is the current date.

| endtime | Datetime | False | 24 | End time for the schedule time period whose validity you want to check. |
| | | | | The default is 14 days forwards from the "starttime". |

Request Example

```
GET vchannel/feed/monitor/v1/content/
gapnoverlap?country=us&provider_id=A3389&service_id=301000Z HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	service_id	If the request was successful, contains the service ID of the channel.
	gap	If the request was successful, contains the start times and durations of any gaps.
	overlap	If the request was successful, contains a list of schedule items involved in any overlaps, including the program or group ID of the scheduled content, and the ID, start time, and duration of the schedule item.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "service_id": "004dea5EX",
```

```
    "gap": [
      {
        "gaptime": "2015-06-20T14:00:00Z",
        "duration": "7600"
      },
      {
        "gaptime": "2015-06-21T11:00:00Z",
        "duration": "3200"
      }
    ],
    "overlap": [
      {
        "content_id": "overlap_1_id",
        "schedule_id": "schedule1_id",
        "starttime": "2016-06-20T14:00:00Z",
        "duration": "3200"
      },
      {
        "content_id": "overlap_2_id ",
        "schedule_id": "schedule2_id",
        "starttime": "2014-08-20T14:10:00Z",
        "duration": "3600"
      }
    ]
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
404		

4.4 Checking the In-tile List

Description

Request Name	vchannel/feed/monitor/v1/content/intile

Request Method	GET
Function	Retrieve the current categorized in-tile content list from the TV PLUS server for checking purposes.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the in-tile list was set to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
service_id	String	True	20	Service ID of your channel, received from Samsung during the channel setup.

Request Example

```
GET vchannel/feed/monitor/v1/content/intile country=us&provider_id=A3389&service_id=3010
HTTP/1.1

Content-Type: application/xml; charset=utf-8

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Status code.
	in-tile	If the request was successful, contains the retrieved in-tile items.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "in-tile": <In-tile object content>
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message

4.5　**Checking Products**

Description

Request Name	vchannel/feed/monitor/v1/content/product
Request Method	GET
Function	Retrieve the current product content from the TV PLUS server for checking purposes.
Protocol	HTTPS only.
Server Cache	No.

Request

Parameter Variables

Parameters	Type	Mandatory	Length	Description
country	String	True	2	Country where the products were set to be shown.
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
start	Int	False	8	Start number for the products being retrieved. They are arranged in a decreasing order by their delivery/update date. Optional value. The default is 1.
num	Int	False	3	Number of retrieved products. The default and maximum value is 100 (for performance reasons).

Request Example

```
GET vchannel/feed/monitor/v1/content/product?country=us&provider_id=A3389&start=1&num=90
HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Response status.
	PageNumber	If the request was successful, contains the starting point of the products list.
	PageSize	If the request was successful, contains number of items in the products list.
	TotalItemCount	If the request was successful, contains the total number of products on the server.
	Items	If the request was successful, contains the offer details included in the retrieved products

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "PageNumber": 1,
    "PageSize": 100,
    "TotalItemCount": 419246,
    "Items": [
      {
        "title": "Charm School",
        "price": "8.99",
        "definition": "SD",
        "acquisitionType": "RENT",
        "offerStartDate": "2012-04-16T04:00:00Z",
        "offerEndDate": "2100-12-31T07:00:00Z",
        "program_id": "1MVc20e721f7d476846873a4e1213f3f5c8",
        "offer_id ": "SONES-827130a9366b8fff",
        "currency": "USD"
      },
      {
        "title": "Hostile Border",
        "price": "3.99",
        "definition": "SD",
        "acquisitionType": "RENT",
        "offerStartDate": "2016-05-03T04:00:00Z",
        "offerEndDate": "2016-10-15T06:59:59Z",
        "program _id": "MV008624750000",
        "offer_id": "SONVS-d25f9899e45a7c49",
        "currency": "USD"
      }
    ]
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
404		

4.5.1 Checking a Product Offer

Description

Request Name	vchannel/feed/monitor/v1/content/product/<provider_id>/<itemID>
Request Method	GET
Function	Retrieve the current information about a specific product offer from the TV PLUS server.
Protocol	HTTPS only.
Server Cache	No.

Request

Path Variables

Parameters	Type	Mandatory	Length	Description
provider_id	String	True	20	Your own content provider ID, received from Samsung during the channel setup.
ItemID	String	True	50	ID of the specific product offer you want to retrieve.

Request Example

```
GET vchannel/feed/monitor/v1/content/product/<provider_id>/<itemID> HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Date: 2018-03-01T15:00:00+00:00

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Response

Response Variables

Element	Attribute	Description
rsp	stat	Response status.
	title	If the request was successful, contains the title of the offer.
	price	If the request was successful, contains the price of the offer.
	definition	If the request was successful, contains the resolution of the video stream related to the offer.
	acquisitionType	If the request was successful, contains the acquisition type of the offer.
	offerStartDate	If the request was successful, contains the time the offer is activated.
	offerEndDate	If the request was successful, contains the time the offer is deactivated.
	program_id	If the request was successful, contains the ID of the program related to the offer (the "id" field value of the program item).
	offer_id	If the request was successful, contains the ID of the offer.
	currency	If the request was successful, contains the currency code for the offer price.

Response Example for Success

```
{
  "rsp": {
    "stat": "OK",
    "title": "SUHD TV Samsung",
    "price": "13.99",
    "definition": "HD",
    "acquisitionType": "RENT",
    "offerStartDate": "2014-01-02T04:00:00Z",
    "offerEndDate": "2100-12-31T07:00:00Z",
    "program_id": "TT002193450000",
    "offer_Id": "SONEH-350a73cce09104e2",
    "currency": "USD"
  }
}
```

Error Codes

HTTP Status Code	Error Code	Error Message
404		

5 References

The following list covers the basic technologies used by the data feed API:

- HTTP, HTTPS

- REST, CGI

- XML, RSS

- XMLHttpRequest (Client)

- MD5 (http://en.wikipedia.org/wiki/MD5)

- SHA-1 (http://en.wikipedia.org/wiki/SHA-1)

- UUID (http://en.wikipedia.org/wiki/UUID)

- CRC64 (http://en.wikipedia.org/wiki/Crc64)

- BASE (http://en.wikipedia.org/wiki/Base32)

Appendix A: Data Object Format

The following sections describe the JSON object types used to transfer channel data between a content provider's feeding server and the TV PLUS server.

Note:

Mandatory fields are marked with *****.

A.1 Program

This object contains details about individual programs to be shown on the channel.

You can include multiple program items within a single Program object. Each item represents a single playable program.

```
{
  "program": [
    {
      "id": "program0001",
      "title": "Mad for Fishing",
      "content_type": "TRAILER",
      "connecting_id": "program0002",
      "content_uri": "http://provider_url/content/0001",
      "link_type": " lw_widget",
      "link_uri": "",
      "duration": "7200",
      "genre": [
        {
          "id": "G1005",
          "original_name": "Sports"
        },
        {
          "id": "G2012",
          "original_name": "Travel"
        }
      ],
      "poster": [
        {
          "url": "http://provider_url/posters/0001tall.jpg",
          "type": "image/jpg",
          "width": "600",
          "height": "900",
```

```
            "ratio": "2_3",

            "imagery": ""
        },
        {
            "url": "http://provider_url/posters/0001wide.png",

            "type": "image/png",

            "width": "1280",

            "height": "720",

            "ratio": "16_9",

            "imagery": ""
        }
    ],
    "desc": "Everything you ever wanted to know about fishing!",

    "rating": "G",

    "release_year": "2018",

    "original_air_date": "2018-04-25",

    "tags": "fishing, fish, boats, water",

    "external_ids": [
      {
        "id": "EP123",

        "id_type": "tmsId",

        "provider": "tms"
      }
    ]
  }
 ]
}
```

Field	Maximum Length	Description
*id	50 bytes	Unique ID of the program. Must be alphanumeric. The TV PLUS server normalizes this ID for each provider.
*title	200 bytes	Program title.

Field	Maximum Length	Description
content_type	30 bytes	Content type. If the value is not defined, "PROGRAM" is used as a default.

Value	Description
PROGRAM	Program that can be added to a schedule.
TRAILER	Trailer that can be added to a schedule or a rentable program. Use the "connecting_id" field to link the trailer to the actual TRANSACTION-type program. If the trailer is scheduled, while it is shown, a "Watch Now" button allows the user to access the actual program details page and rent the program for viewing. If the trailer is not scheduled, the user can access it from the actual program's details page. This value is used for a TVOD channel only.
TRANSACTION	Program that can be rented. You cannot add this program type to a schedule. This value is used for a TVOD channel only.

Field	Maximum Length	Description
(*)connecting_id	50 bytes	ID of the actual program if the "content_type" is "TRAILER". This field is mandatory only if the "content_type" is "TRAILER".
*content_uri	2000 bytes	Content stream URI that can be accessed through the internet. If the "content_type" is "TRANSACTION", use the connected TRAILER-type program's URI. The URI for the various offers of the actual TRANSACTION program is defined in the related product.

Field	Maximum Length	Description
definition	6 bytes	Quality definition of the program.

Value	Description
SD	Standard Definition.
HD	High Definition.
UHD	Ultra High Definition.

Field	Maximum Length	Description
*****link_type**	20 bytes	Link type.

Value	Description
none	There is no extra link with content and outbound.
lw_widget	Run the light weight widget platform only stream.
deeplink	Jump to the provider's own app with deeplink.
browser	Jump to the destination URI with a browser.

Field	Maximum Length	Description
link_uri	2000 bytes	Content destination URI related to the "link_type" value. ● If "link_type" is "none", this value can be omitted. ● If "link_type" is "lw_widget" this value can be "". ● If "link_type" is "deeplink", "link_uri" identifies the application to launch. ● If "link_type" is "browser", "link_uri" defines the HTTP(S) URL for the destination.
*****duration**	20 bytes	Total duration of the program (in seconds).
lang	2 bytes	Language of the program.
program_type	20 bytes	Type of the program content, such as "clip", "short", "uncut", "episode", "movie", "sports", or "trailer".
episode_num	10 bytes	Episode number of the program.
promotion_text	1000 bytes	Promotional description of the program.

Field	Maximum Length	Description
*genre	id: 50 bytes original_name: 100 bytes	Genre of the program. _see table below_
*poster	url: 2000 bytes type: 20 bytes width: 50 bytes height: 50 bytes ratio: 20 bytes imagery: 100 bytes	List of posters related to the program. _see table below_
desc	4000 bytes	Description of the program.

genre subelements:

Subelement	Description
*id	Samsung genre ID assigned with the original genre. For a list of available values, see Appendix B.
original_name	Genre or category name of the original content catalogue.

poster subelements:

Subelement	Description
*url	Poster image URL.
*type	Image type (such as "image/png" or "image/jpg").
*width	Width in pixels (for the "16_9" aspect ratio, the recommended is 1920, minimum is 1280).
*height	Height in pixels (for the "16_9" aspect ratio, the recommended is 1080, minimum is 720).
*ratio	Aspect ratio of the image. Must be "16_9" or "2_3".
*imagery	Definition of the image.

Field	Maximum Length	Description
cast	person_id: 200 bytes name: 100 bytes role: 100 bytes desc: 100 bytes	List of program cast members. | Subelement	Description
---	---
person_id	Unique ID of the person.
name	Name of the person.
role	Role of the person in the program.
desc	Description of the person.	
*rating	30 bytes	Rating of the program according to its suitability for adults and children. For a list of available rating values for each country, see Appendix D. If the program is not rated, set this value as "NA".
star_rating	source: 200 bytes score: 50 bytes	Star rating for the program. | Subelement	Description
---	---
source	Source of the star rating.
score	Rating score (maximum is 5).	
subtitle	order: 20 bytes lang_cd: 20 bytes url: 2000 bytes	List of subtitles related to the program. | Subelement	Description
---	---
order	Selection order for the subtitles to be shown on the screen. Default is 0.
lang_cd	ISO 639-1 language code.
url	Subtitle file URL (in the .srt format).	
audio	order: 50 bytes lang_cd: 50 bytes	List of audio tracks related to the program. | Subelement	Description
---	---
order	Selection order for the audio to be played. Default is 0.
lang_cd	ISO 639-1 language code.	

Field	Maximum Length	Description
release_year	20 bytes	Release year of the program.
original_air_date	10 bytes	for Show - the original air date in yyyy-mm-dd format for Movie - the release year in yyyy format
tags	1024 bytes	String containing a comma-separated list of key words to be used for search.
external_ids	id: 50bytes id_type: 80bytes provider: 80bytes	Unique id(s) for this program from other well-known providers that will help match the program to existing programs in the Database.

Subelement	Description
id	The unique id of the program at the provider
id_type	For providers who have multiple types of ids. For example, tms (Tribune/Gracenote) has ids of both type tmsId and type rootId.
provider	The name of the provider.Current supported value is tms (Tribune/Gracenote)

A.2 Group

This object contains information about a play sequence consisting of multiple programs.

A group is useful when you have multiple short programs (under 15 minutes in length), which are shown in the EPG as "…" (since the basic time unit of the EPG is half an hour). By combining several short programs into a group, you can define a common group title for them and allow that title to be visible in the EPG.

Since a group is an artificial concept, it can be difficult to provide a single poster image for it. Consider using multiple images representing each program in the playlist.

You can include multiple group items within a single Group object. Each item represents a single playable group.

```
{
  "groups": [
    {
      "group_id": "gl01123549",
      "title": "Hot Hot Music Videos",
      "rating": "R",
```

```
      "poster": [
        {
          "url": "http:
//vd.contents.stg.eu.s3.amazonaws.com/platform/image/content/cepg/ss.jpg",
          "type": "image/jpg",
          "width": "600",
          "height": "900",
          "ratio": "2_3",
          "imagery": ""
        },
        {
          "url": "http:
//vd.contents.stg.eu.s3.amazonaws.com/platform/image/content/cepg/Trans.png",
          "type": "image/png",
          "width": "1280",
          "height": "720",
          "ratio": "16_9",
          "imagery": ""
        }
      ],
      "play_list": [
        {
          "sequence": "1",
          "program_id": "AAMM102019"
        },
        {
          "sequence": "2",
          "program_id": "AAMM109991"
        }
      ],
      "duration": "1800",
      "genre": {
        "id": "G1007",
        "original_name": "PoP Music Video"
      }
    }
  ]
}
```

Field	Maximum Length	Description
*group_id	50 bytes	Unique ID of the group. Must be alphanumeric.
lang	2 bytes	Language of the group.
*title	200 bytes	Title of the group.
synopsis	4000 bytes	Overall description or premise of the group.
promotion_text	1000 bytes	Promotional description of the group.
rating	30 bytes	Rating of the group content according to its suitability for adults and children. For a list of available rating values for each country, see Appendix D. If the program is not rated, set this value as "NA".
*poster	url: 2000 bytes type: 20 bytes width: 50 bytes height: 50 bytes ratio: 20 bytes imagery: 100 bytes	List of posters related to the group.

Subelement	Description
*url	Poster image URL.
*type	Image type (such as "image/png" or "image/jpg").
*width	Width in pixels (for the "16_9" aspect ratio, the recommended minimum is 1280).
*height	Height in pixels (for the "16_9" aspect ratio, the recommended minimum is 720).
ratio	Aspect ratio of the image. Must be "16_9" or "2_3".
imagery	Definition of the image.

Field	Maximum Length	Description
*play_list	sequence: 20 bytes program_id: 50 bytes	List of programs that form the group. | Subelement	Description
---	---
*sequence	Play sequence within the group.
*program_id	Program object primary ID (the "id" field value of the program).	
*duration	20 bytes	Total duration of the programs in the play list (in seconds). This value must be around 1800 seconds (half an hour).
*genre	id: 50 bytes original_name: 100 bytes	Genre of the group. | Subelement	Description
---	---
*id	Samsung genre ID assigned with the original genre. For a list of available values, see Appendix B.
original_name	Genre or category name of original content catalogue.	

A.3 Schedule

The Schedule object contains program scheduling information for a TV PLUS channel. You can schedule both programs and groups.

You can include multiple schedule items within a single Schedule object. Each item represents a single program or group with a specific the time slot and repetition logic. To avoid schedule conflicts, each item provided for a specific channel must be unique.

The recommendation is to always maintain and deliver a schedule for the upcoming 2 weeks.

```
{
  "schedule": [
    {
      "service_id": "channel0001",
      "content_id": "program0001",
      "schedule_id": "schedule0001",
      "program_type": "Program",
```

```
      "repeat": {
        "type": "daily",
        "expire_date": "2018-07-09T14:00:00Z"
      },
      "starttime": "2018-06-09T14:00:00Z",
      "duration": "7200"
    },
    {
      "service_id": "channel0001",
      "content_id": "program0002",
      "schedule_id": "schedule0002",
      "program_type": "Program",
      "repeat": {
        "type": "none",
        "expire_date": ""
      },
      "starttime": "2018-06-09T16:00:00Z",
      "duration": "3600"
    }
  ]
}
```

Field	Maximum Length	Description
⁕service_id	50 bytes	Unique ID of the channel.
⁕content_id	50 bytes	Unique ID of the scheduled target content (the "id" field value of the program or the "group_id" field value of the group).
⁕schedule_id	50 bytes	Unique ID of the schedule item, which can be used to delete the schedule item.
program_type	20 bytes	Type of the scheduled content, either "Program" or "Group".

Field	Maximum Length	Description
*repeat	type: 20 bytes expire_date: 50 bytes	Repeat option for the schedule.

Subelement	Description
*type	Repeat type. Possible values: • "none": Do not repeat the schedule. • "daily": Repeat daily. • "weekly": Repeat weekly. • "circle": This value is used for Group-type content only. During the scheduled time slot, it allows the group play list to be repeated from the beginning each time it reaches the end.
(*)expire_date	Expiration date for the repeating event in the "2099-12-31T00:00:00Z" format. This element is null if "type" is "none", otherwise it is mandatory.

Field	Maximum Length	Description
*starttime	50 bytes	Start time for the program.
*duration	20 bytes	Content play time (in seconds). The value must be under 86400 (24 hours).

A.4 In-tile

This object contains information about the in-tile list of programs shown at the bottom of the channel screen. The In-tile object is used to display curated content, categorized by the content provider's own curation.

You can include multiple category items within a single In-tile object. Each item represents a single category.

```
{
  "in-tile": [
    {
      "category_id": "intile0001",
      "category_name": "Drama",
      "play_list": [
        {
```

```
          "sequence": "1",

          "program_id": "movie0001"

        },

        {

          "sequence": "2",

          "program_id": "movie0002"

        }

      ]

    },

    {

      "category_id": "intile0002",

      "category_name": "Comedy",

      "play_list": [

        {

          "sequence": "1",

          "program_id": "movie0003",

          "ribbon": "Hot"

        }

      ]

    }

  ]

}
```

Field	Maximum Length	Description
category_id	50 bytes	Unique ID of the category. Must be alphanumeric. If you use only one category, you can leave this value null.
category_name	100 bytes	Title of the category. If you use only one category, you can leave this value null.

Field	Maximum Length	Description
*play_list	sequence: 20 bytes program_id: 50 bytes ribbon: 100 bytes	List of programs to be included in the in-tile list category. **Subelement** / **Description**: ***sequence** — Order in which the programs are displayed within the category. ***program_id** — Program object primary ID (the "id" field value of the program). ribbon — Type-defined ribbon graphic overlaid on the program poster image in the in-tile list. For a list of available types, see Appendix C.

A.5 Preview

The Preview object contains recommended program information that is shown as a preview list within the Eden launcher. A maximum of 15 programs can be shown in the preview list.

```
{
  "preview": {
    "id": "pre00123",
    "preview_list": [
      {
        "sequence": "1",
        "program_id": "preview0001",
        "ribbon": "UHD"
      },
      {
        "sequence": "2",
        "program_id": "preview0002",
        "ribbon": "New"
      },
      {
        "sequence": "3",
```

```
        "program_id": "preview0003"
      }
    ]
  }
}
```

Field	Maximum Length	Description
*id	50 bytes	Unique ID of the preview list.
*preview_list	sequence: 50 bytes program_id: 50 bytes ribbon: 100 bytes	List of programs to be included in the preview list. | Subelement	Description
---	---
*sequence	Order in which the programs are shown within the preview list. This value must be unique and range from 1 to 15.
*program_id	ID of the program (the "id" field value of the program).
ribbon	Type-defined ribbon graphic overlaid on the program poster image in the preview list. For a list of available types, see Appendix C.	

A.6 Product

This object contains product details that define the various offers available for the user to rent a program. This object is used for a TVOD channel only.

You can include multiple product items within a single Product object. Each item represents a single product related to a specific program. Each product item can contain multiple offers.

```
{
  "product": [
    {
      "id": "movie0001",
      "content_type": "MOVIE",
      "offers": [
        {
          "offer_id": "movie0001_offer001",
          "acquisition_type": "RENT",
          "title": "Rent 4K / 48h",
          "definition": "4K",
```

```
            "price": "8",

            "currency": "EUR",

            "discount_type": "flat",

            "discount_value": "1",

            "offer_start": "2018-06-01T00:00:00Z",

            "offer_end": "2018-12-31T00:00:00Z",

            "effective duration": "2D",

            "content_uri": "http://content_stream_url/movie0001_4K"

        },

        {

            "offer_id": "movie0001_offer002",

            "acquisition_type": "RENT",

            "title": "Rent HD / 48h",

            "definition": "HD",

            "price": "5",

            "currency": "EUR",

            "offer_start": "2018-06-01T00:00:00Z",

            "offer_end": "2018-12-31T00:00:00Z",

            "effective duration": "2D",

            "content_uri": "http://content_stream_url/movie0001_HD"

        }

    ]

  }

]

}
```

Field	Maximum Length	Description
*id	50 bytes	Unique ID of the program item the product is linked to. Must be alphanumeric. The TV PLUS server normalizes this ID for each provider. The program item must have the "TRANSACTION" content type.
extra_id	50 bytes	Program ID for internal management purposes.

Field	Maximum Length	Description
content_type	50 bytes	Product type.

Value	Description
MOVIE	Independent program.
SERIES	Program that is part of a series.

Field	Maximum Length	Description
*offers	offer_id, acquisition_type, definition, price, currency, discount_type, discount_value, offer_start, offer_end, and effective_duration: 50 bytes title, content_uri: 1000 bytes	List of offers related to the product.

Subelement	Description
*offer_id	Unique ID of the offer.
*acquisition_type	Acquisition type of the offer. Currently, only "RENT" is supported.
title	Description of the offer.
*definition	Resolution of the video stream related to the offer.
*price	Price of the offer.
*currency	Currency code of the offer price.
discount_type	Discount type, such as "flat" or "rate".
discount_value	Value of the discount.
*offer_start	Time the offer is activated.
*offer_end	Time the offer is deactivated.
effective_duration	Duration of the offer.
*content_uri	Content URI dedicated to the offer.

Field	Maximum Length	Description
drm	type: 50 bytes license_url, custom_data: 1000 bytes	DRM information related to the offer.

Subelement	Description
type	Type of the DRM, such as "playready" or "widevine".
license_url	License URL of the DRM.
custom_data	Custom information about the DRM.

Appendix B: Program Genres

The following table lists the available genres or categorizations for programs and groups. If more than one genre can be assigned for the original program or group, set the primary genre or category.

ID	Genre (en)	Genre (ko)
G1001	Drama	드라마
~~G1002~~	~~Movies~~	~~영화~~
G1003	Cartoons/Puppets	카툰
G1004	Entertainment	예능
G1005	Sports	스포츠
~~G1006~~	~~Leisure hobbies~~	~~레져~~
G1007	Music	음악
G1008	News	시사
G1009	Education	교육
G1010	Documentary	다큐멘터리
G1011	Arts/Culture	교양
G1012	Shopping	쇼핑
G1013	Comedy	코미디
~~G1014~~	~~ETC~~	~~기타~~
G1015	KIDS	어린이
G2001	Action	액션
G2002	Cooking	요리
G2003	Crime	범죄

ID	Genre (en)	Genre (ko)
G2004	Fantasy	판타지
G2005	History	역사
G2006	Horror	공포
G2007	Mystery	미스터리
G2008	Reality	라이프
G2009	Romance	로맨스
G2010	Science fiction	SF
G2011	Talk	토크쇼
G2012	Travel	로드무비

Appendix C: Ribbon Types for In-tile and Preview Lists

The following table lists the available ribbon graphic types for the programs in in-tile and preview lists.

Type
Hot
New
UHD
...

Appendix D: Content Ratings

The following table lists the content ratings available in countries where TV PLUS is currently available. The content rating is a mandatory value for programs and optional for groups.

Country	Available Ratings
South Korea	**All:** This rating is for programming that is appropriate for all ages **7:** Children under 7 are prohibited from watching this program/film **12:** Children under 12 are prohibited from watching this program/film. **15:** Children under 15 are prohibited from watching this program/film. **19:** Children under 19 are prohibited from watching this program/film.
UK, France, Germany, Austria, Switzerland, Italy, Spain, Vietnam, Russia	**3:** Not recommended for audiences under 3. **4:** Not recommended for audiences under 4. **5:** Not recommended for audiences under 5. **6:** Not recommended for audiences under 6. **7:** Not recommended for audiences under 7. **8:** Not recommended for audiences under 8. **9:** Not recommended for audiences under 9. **10:** Not recommended for audiences under 10. **11:** Not recommended for audiences under 11. **12:** Not recommended for audiences under 12. **13:** Not recommended for audiences under 13. **14:** Not recommended for audiences under 14. **15:** Not recommended for audiences under 15. **16:** Not recommended for audiences under 16. **17:** Not recommended for audiences under 17. **18:** Not recommended for audiences under 18.

Country	Available Ratings
USA, Canada, Mexico	**☐ TV Show** **TV-Y**: This program is designed to be appropriate for all children. **TV-Y7**: This program is designed for children age 7 and above. **TV-G**: This program is suitable for all ages. **TV-PG**: This program contains material that parents may find unsuitable for younger children. **TV-14**: This program contains some material that many parents would find unsuitable for children under 14 years of age. **TV-MA**: This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17. **◇ Content descriptors** **D**: Suggestive dialogue **L**: Coarse or crude language **S**: Sexual situations **V**: Violence **FV**: Fantasy violence Continue…

Country	Available Ratings
USA, Canada, Mexico	**☐ For example** That can be possible to use multiple. Content Provider can be feed format about 1 program like this. TV-14-V, TV-14-S, TV-14-L **TV Setting** *(see table below)* Samsung TV user can be possible to set condition ban regarding checkbox **☐ Movie** **G** (General Audiences): All ages are admitted. **PG** (Parental Guidance Suggested): Some material may not be suitable for children. **PG-13** (Parents Strongly Cautioned): Some material may be inappropriate for children under 13. **R** (Restricted): Under 17 requires an accompanying parent or adult guardian. **NC-17** (Adults Only): No one 17 and under admitted.
Canadian English Rating	**C :** Programming is intended for younger children under the age of 8 years. **C8+ :** Suitable for children ages 8+. **G :** Suitable for general audiences.. **PG :** Parental guidance. **14+ :** Programming intended for viewers ages 14 and older. **18+ :** Programming intended for viewers ages 18 and older. ** Disclaimer : When using this rating, parental lock function is not working*

TV Setting

	ALL	FV	V	S	L	D
TV-Y	☐					
TV-Y7	☐	☐				
TV-G	☐					
TV-PG	☐		☐	☐	☐	☐
TV-14	☐		☐	☐	☐	☐
TV-MA	☐		☐	☐	☐	

Country	Available Ratings
Canadian French Rating	**G :** Programming is intended for younger children under the age of 8 years. **8 ans+ :** appropriate for children 8 and up may contain with little violence, language, and little to no sexual situations **13 ans+:** suitable for children 13 and up and may contain with moderate violence, language, and some sexual situations.. **16 ans+ :** ecommended for children over the age of 16 and may contain with strong violence, strong language, and strong sexual content. **18 ans+ :** recommended to be viewed by adults and may contain extreme violence and graphic sexual content. It is mostly used for 18+ movies and pornography. **Disclaimer : When using this rating, parental lock function is not working*
Australia	**G** : General **PG** : Parental guidance recommended. **M** : Recommended for mature audiences. **MA** : Not suitable for people under 15. Content is STRONG in impact **AV** : Not suitable for people under 15. Violence is STRONG in impact **R :** Not for anyone under 18
Brazil	**L :** General Audiences **10 :** Not recommended for minors under ten **12 :** Not recommended for minors under twelve **14 :** Not recommended for minors under fourteen **16 :** Not recommended for minors under sixteen **18 :** Not recommended for minors under eighteen

Appendix E: Introduction to Channel Data

Channel data is transferred from your feeding server to the TV PLUS server as JSON objects. The main data types are:

- Program: Contains the details of a program item, such as a movie.

- Group: Contains a list of program items grouped together for scheduling purposes.

- Schedule: Contains the details for the channel schedule, specifying what programs are scheduled to run and when.

- In-tile: Contains a list of programs shown as a categorized list at the bottom of the screen.

- Product: Contains the TVOD-specific product details for allowing content to be rented.

- Preview: Contains a list of programs shown in the preview list in the Eden launcher.

For example, a Schedule object (denoting the schedule information for a channel), has the following JSON structure:

```json
{
  "schedule": [
    {
      "service_id": "USAG1600001A",
      "content_id": "1263",
      "schedule_id": "sec06194",
      "program_type": "Program",
      "starttime": "2015-05-04T06:00:00Z",
      "duration": "3600",
      "repeat": {
        "type": "weekly",
        "expire_date": "2099-12-31T00:00:00Z"
      }
    }
  ]
}
```

To make content available for a TV PLUS channel, deliver the corresponding JSON object to the TV PLUS server using an HTTP POST request. For example, to add a new item into a channel's schedule, you must send the following request to the TV PLUS server:

```
POST vchannel/feed/delivery/v1/content/schedule?country=KR&provider_id=
KRQT123456A&service_id=KRAG9876543 HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com
```

```
Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

   Schedule object

}
```

You can also access information delivered to the TV PLUS server for monitoring purposes, by requesting it with HTTP GET requests. For example, to retrieve all Schedule objects for a given channel, you must send the following request:

```
GET
vchannel/feed/monitor/v1/content/schedule?country=us&provider_id=A3389&s
ervice_id=3010&starttime=2015-03-16T14:00:00Z&endtime=2015-03-
20T14:00:00Z HTTP/1.1

Token:4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Cache-Control: no-cache

Accept-Encoding: gzip, deflate
```

Delivering content to the TV PLUS server must be done in a specific order at specific intervals:

1. Before starting to send actual channel data, retrieve an access token to the TV PLUS server with the access token retrieval API.

2. At least once per day, send all available content:

   a. Deliver new and updated program information.

   b. Deliver new and updated group information, if used.

   c. Deliver any deletions to the current schedule, if needed.
   To avoid schedule conflicts when using repeat options, previous schedules need to be deleted before new ones are delivered.

    d. Deliver a schedule for the time slots deleted in the previous step, and for upcoming days not included in the previous delivery (the schedule data can cover at most 2 weeks forward from the current date).

    e. Deliver new or updated in-tile and preview lists, if needed (in-tile list is mandatory for TVOD channels). This step can be done at any point after the program information has been delivered.

A new content delivery can be made to the TV PLUS server at most once per day. In addition, for Program and Group objects, you can deliver an update at most 5 times per day. However, when delivering updates, remember that the TV PLUS data is cached on the client TV and replacing old data can take up to 6 hours.

Note:

Regardless of your AVOD channel version (RTS or LIVE), the same process and data format can be used to deliver data to the TV PLUS server.

5.1 Programs

Each program offered through a TV PLUS channel is represented by an item within a Program object. The data feed API allows you to perform the following operations with Program objects:

- Delivering a Program object with new or updated program items to the TV PLUS server
  You must deliver a separate item within a Program object for each program you want the user to see on the channel (either as scheduled programming, curated content in the in-tile list, or recommended content in the preview list) or be able to rent.

- Checking the programs currently defined in the TV PLUS server
  You can check the current program list by retrieving a list of program items within a Program object from the TV PLUS server.

When you define a Program object and send it to the TV PLUS server, it must contain various details for each included program item. Some of the details are internal, while others are visible to the TV user:

- Some internal details:
  - Unique ID
  - Content type
    This value must be "PROGRAM" for scheduled programs on an AVOD channel, "TRAILER" for scheduled programs on a TVOD channel (each of which is linked to a rentable program), and "TRANSACTION" for rentable programs on a TVOD channel.
  - Program genre
  - Age rating information

- All visible details (the numbers are used in the following figures to illustrate how the details are shown on the TV screen):
  - Program duration (**1**)
  - Program name (**2**)
  - Poster images for the program
    Every program can have a horizontal poster with a 16:9 aspect ratio (**3a**), and programs on a TVOD channel can have an additional vertical poster with a 2:3 aspect ratio (**3b**). TVOD channels use the vertical poster image for the in-tile and preview lists, as well as the details page for a content item.
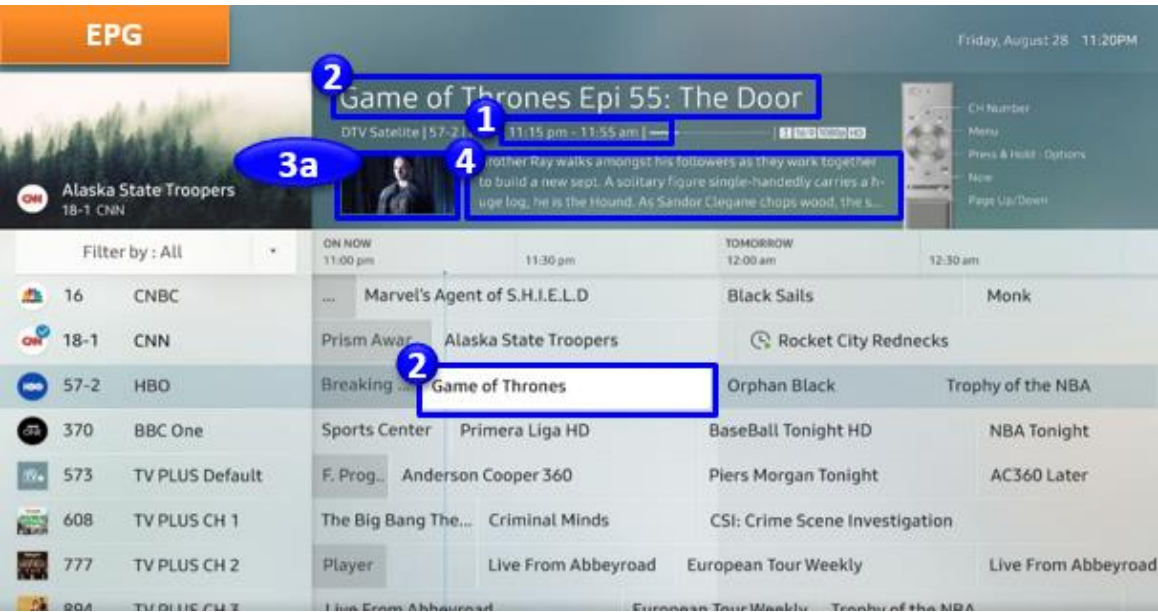 - Program description (**4**)

Figure 6: Program details visible in the EPG

Figure 7: Program details visible in an AVOD in-tile list

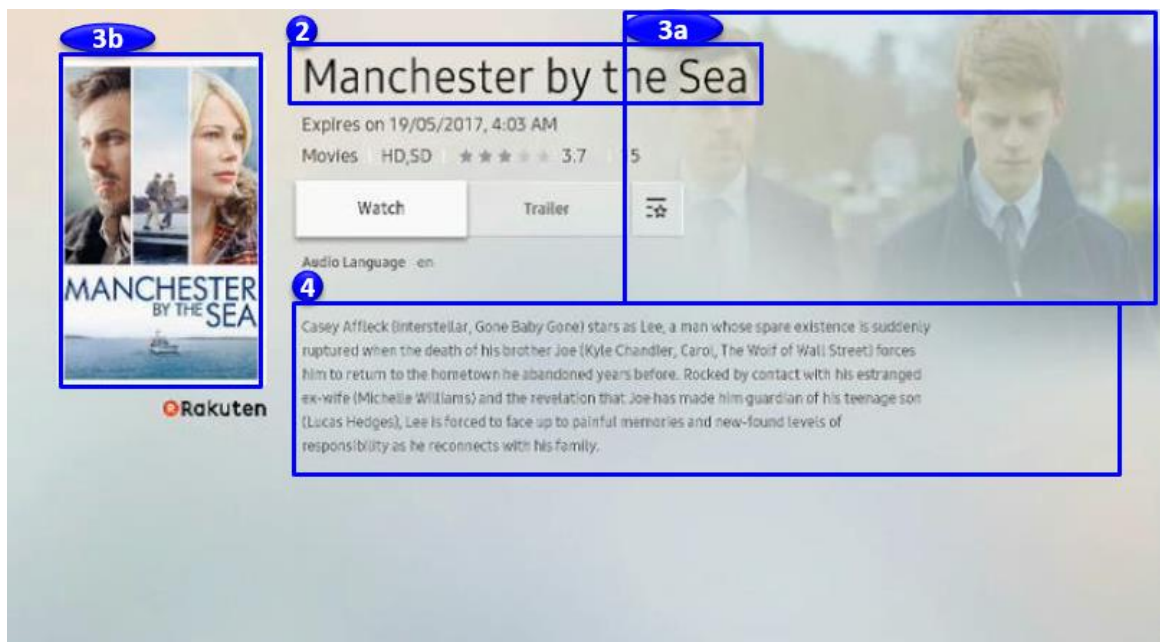**Figure 8: Program details visible in a TVOD in-tile list**

Figure 9: Program details visible on the details page (TVOD only)

For more information on the Program object details and operations, see "Data Object Format > Program", "Delivering Programs", and "Checking Programs" in the Samsung TV PLUS Channel Data Specification.

5.2 Groups

You can group programs together using the Group object, which is useful for scheduling a block of short programs as one logical unit. The EPG can only show a minimum of 30 minutes as a single block, so to make shorter programs visible, they need to be combined into groups. The groups are represented by a Group object, which can contain multiple group items. Each group item represents a single group that can be added to a channel schedule. The data feed API allows you to perform the following operations with Group objects:

- Delivering a Group object with new or updated group items to the TV PLUS server
  You must deliver a separate item within a Group object for each group you want the user to see as scheduled programming on the channel.

- Checking the groups currently defined in the TV PLUS server
  You can check the current group list by retrieving a list of group items within a Group object from the TV PLUS server.

When you define a Group object and send it to the TV PLUS server, it must contain various details for each included group item. Some of the details are internal, while others are visible to the TV user:

- Some internal details:

  o Unique ID

  o List of program items that are grouped together
    Each group contains a sequential playlist of program items. The content type of the program items that are grouped together must be "PROGRAM" (AVOD only) or "TRAILER" (TVOD only).

  o Common genre of the programs included in the group

  o Age rating information

- All visible details (the numbers are used in the following figure to illustrate how the details are shown on the TV screen):
    - Group duration (**1**)
    - Group name (**2**)
    - Poster image for the group (**3**)
      Every group must have a horizontal poster with a 16:9 aspect ratio.
    - Group synopsis (**4**)

Figure 10: Group details visible in the EPG

For more information on the Group object details and operations, see "Data Object Format > Group", "Delivering Groups", and "Checking Groups" in the Samsung TV PLUS Channel Data Specification.

5.3 Schedule

Each TV PLUS channel has a schedule visible on the EPG. The channel schedule is represented by a Schedule object, which in turn contains schedule items. Each schedule item represents a show time for a single program or group. The data feed API allows you to perform the following operations with Schedule objects:

- Delivering a Schedule object with new or updated schedule items to the TV PLUS server
  You must deliver a separate item within a Schedule object for each entry in the EPG.

- Deleting an existing schedule item from the TV PLUS server
  You can delete a schedule item from the server by delivering a Schedule object with a schedule item containing the ID of the item to be deleted.

- Checking the schedule currently defined in the TV PLUS server
  You can check the current channel schedule by retrieving a list of schedule items within a Schedule object from the TV PLUS server.

- Retrieving a list of gaps and overlaps in the channel schedule
  You can ensure the integrity of the channel schedule by retrieving a list that shows both gaps left between programs and sections where two schedule items overlap.

Note:

If you need to modify a schedule item, you must first delete the existing item, then deliver a new Schedule object containing a new schedule item with updated information. For an example, see Appendix F.

When you define a Schedule object and send it to the TV PLUS server, it must contain various details for each included schedule item. Some of the details are internal, while others are visible to the TV user:

- Some internal details:

    o Service ID of the channel the schedule item is for

    o ID of the scheduled program or group
       The content type for a scheduled program (or programs included within a scheduled group) must be "PROGRAM" (AVOD only) or "TRAILER" (TVOD only).

    o Unique item ID

    o Repeat type and expiry date
       Schedule items can be set to either occur once or repeat daily or weekly until a specific expiry date. Scheduled groups can also be set to repeat in a loop.

- All visible details (the numbers are used in the following figure to illustrate how the details are shown on the TV screen):

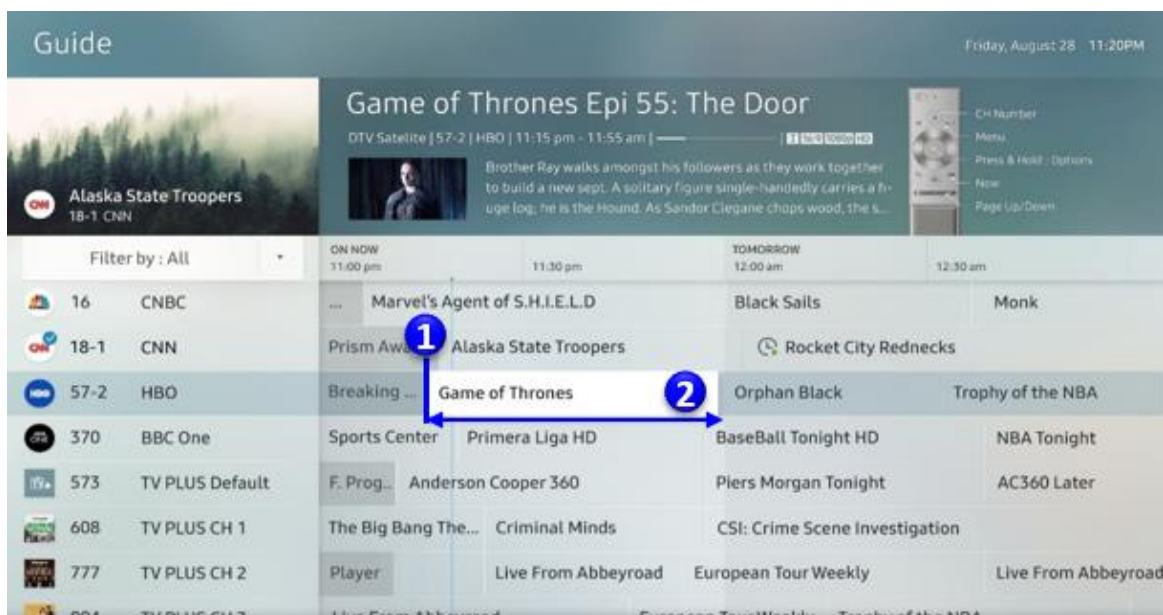   o Start time (**1**)

    o Duration (**2**)

Figure 11: Schedule details visible in the EPG

For more information on the Schedule object details and operations, see "Data Object Format > Schedule", "Delivering Schedules", "Delivering Deletions for a Schedule", "Checking Schedules", and "Checking Schedule Conflicts" in the Samsung TV PLUS Channel Data Specification.

5.4 In-tile List

The in-tile list of your channel can show programs arranged into a categorized list. The in-tile list is mandatory for TVOD channels, and optional for AVOD channels. The list content is represented by the In-tile object, which contain items that each represent a single category. The data feed API allows you to perform the following operations with In-tile objects:

- Delivering an In-tile object with new or updated items to the TV PLUS server
  To add programs into the categories of the in-tile list, you must deliver an In-tile object containing items for all added or modified categories to the TV PLUS server.

- Checking the in-tile list content currently defined in the TV PLUS server
  You can check the current in-tile list by retrieving the In-tile object from the TV PLUS server.

When you define an In-tile object and send it to the TV PLUS server, it must contain various details. Some of the details are internal, while others are visible to the TV user:

- Some internal details:

  o ID for the in-tile list category

- All visible details (the numbers are used in the following figure to illustrate how the details are shown on the TV screen):

  o Category name (**1**)

  o Playlist containing the program IDs of the list category members (**2**)
    The content type for programs added to the in-tile list must be "PROGRAM" (AVOD only) or "TRANSACTION" (TVOD only).

  o Sequence order of each program in the list (**3**)

  o Optional ribbon overlaid on a list item (**4**)

Figure 12: In-tile details visible in an AVOD in-tile list

Figure 13: In-tile details visible in a TVOD in-tile list

For more information on the In-tile object details and operations, see "Data Object Format > In-tile", "Delivering the In-tile List", and "Checking the In-tile List" in the Samsung TV PLUS Channel Data Specification.

5.5 Previews

The Eden launcher contains a preview list, showing recommended programs. The preview list is represented by the Preview object. The data feed API allows you to perform the following operation with Preview objects:

- Delivering a new or updated Preview object to the TV PLUS server
  To add programs into the preview list, you must deliver a Preview object to the TV PLUS server.

When you define a Preview object and send it to the TV PLUS server, it must contain various details. Some of the details are internal, while others are visible to the TV user:

- Some internal details:
  - Unique preview list ID

- All visible details (the numbers are used in the following figure to illustrate how the details are shown on the TV screen):
  - Playlist containing the program IDs of the list members (**1**)
    The content type for programs added to the preview list must be "PROGRAM" (AVOD only) or "TRANSACTION" (TVOD only).
  - Sequence order of each program in the list (**2**)
  - Optional ribbon overlaid on a list item (**3**)

Figure 14: Preview list details

For more information on the Preview object details and operations, see "Data Object Format > Preview" and "Delivering the Preview List" in the Samsung TV PLUS Channel Data Specification.

5.6 Products for TVOD Channels

For each rentable program on a TVOD channel, you can define product information that is shown to the user on the program's details page. The product information is represented by a Product object, which in turn contains product items. Each product item represents the details related to a single program. The data feed API allows you to perform the following operations with Product objects:

- Delivering a Product object with new or updated product items to the TV PLUS server
  You must deliver a separate item within a Product object for each program that you want to make rentable on a TVOD channel (those programs must also have the "TRANSACTION" content type).

- Checking the products currently defined in the TV PLUS server
  You can check the current product list by retrieving a list of product items within a Product object from the TV PLUS server.

- Checking a specific product currently defined in the TV PLUS server
  You can check a specific product by retrieving a Product object using an offer ID included in the product.

When you define a Product object and send it to the TV PLUS server, it must contain various details for each included product item. Some of the details are internal, while others are visible to the TV user:

- Some internal details:

  o ID of the program item the product refers to
    The content type of a program that can be rented must be "TRANSACTION".

  o DRM information

- All visible details (the numbers are used in the following figure to illustrate how the details are shown on the TV screen):

  o One or more offers that determine the video streams that the user can rent (**1**)
    A product can contain multiple offers at the same time, referring to different resolution streams of the same content (SD, HD, or UHD).

  o Resolution for each video stream being offered (**2**)

  o Price for each video stream being offered (**3**)

  o Currency for the video stream price (**4**)

<mark>**Figure 15: Product details visible on the details page**</mark>

<mark>For more information on the Product object details and operations, see "Data Object Format > Product", "Delivering Products", "Checking Products", and "Checking a Specific Product" in the Samsung TV PLUS Channel Data Specification.</mark>

Appendix F: Schedule Conflict Example

This section shows how to handle schedule updates and resulting conflicts. It starts from the schedule example created Appendix A:

Time	Mon. June 4th	Tue. June 5th	Wed. June 6th	Thu. June 7th	Fri. June 8th	Sat. June 9th	Sun. June 10th
12:00 13:00		Mad for Fishing		Batman Forever			
14:00 15:00	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker
16:00							

Let's assume that 2 changes are made in the above schedule:

- A new program for "World of Botany" is added, to be shown on Tuesday between 13:00 and 14:00.

- Another new program for "Batman Returns" is added, to be shown on Wednesday between 12:00 and 14:00.

Both programs are delivered to the TV PLUS server as usual, along with their schedule items. As a result, the schedule looks like this:

Time	Mon. June 4th	Tue. June 5th	Wed. June 6th	Thu. June 7th	Fri. June 8th	Sat. June 9th	Sun. June 10th
12:00 13:00		Mad for Fishing World of Botany		Batman Returns			
14:00 15:00	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker
16:00							

The "Batman Returns" program conflicts with a previously scheduled "Batman Forever" program. However, since the time slot for both programs is identical, the TV PLUS server can handle that conflict internally, and simply replaces the old information with the newer one, and updates the schedule to show the "Batman Returns" program.

The "World of Botany" program also conflicts with a previously scheduled "Mad for Fishing" program. In this case, the time slots for both programs are not identical, and the TV PLUS server cannot resolve the conflict internally. Instead, it automatically sends a Redmine ticket for a Defect. You are expected to address this conflict within 12 hours.

To resolve the conflict, you must delete the old schedule item before redelivering the new one:

1. Send a schedule item deletion request to delete the "Mad for Fishing" program:

```
POST
vchannel/feed/delivery/v1/content/schedule/delete?country=US&provider_id=provider0001&service_id=channel0001 HTTP/1.1

Token:4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  "schedule": [

    {

      "service_id": "channel0001",

      "program_id": "program0001",

      "schedule_id": "schedule0001"

    }

  ]

}
```

2. Redeliver a Schedule object for the "World of Botany" program:

```
POST
vchannel/feed/delivery/v1/content/schedule?country=US&provider_id=provider0001&service_id=channel0001 HTTP/1.1

Token: 4df5ea15++13c19e48c1a939bcb7da23e8ef3e34a7730ee3f1

Content-Type: application/xml; charset=utf-8

Content-Length: 0

Accept: text/xml, application/xml, application/json

Host: obs.scs.com

Cache-Control: no-cache

Accept-Encoding: gzip, deflate


{

  "schedule": [

    {

      "service_id": "channel0001",
```

```
        "content_id": "program0004",
        "schedule_id": "schedule0004",
        "program_type": "Program",
        "repeat": {
          "type": "none",
          "expire_date": ""
        },
        "starttime": "2018-06-05T13:00:00Z",
        "duration": "3600"
      },
    ]
}
```

After above actions, the schedule is valid again:

Time	Mon. June 4th	Tue. June 5th	Wed. June 6th	Thu. June 7th	Fri. June 8th	Sat. June 9th	Sun. June 10th
12:00				Batman Returns			
13:00		World of Botany					
14:00	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker	World Series of Poker
15:00							
16:00							