

SMS: Show Playlist structure

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00	15 Nov 2013	Initial version
01	07 Jul 2014	Added StereoscopicOutputMode
02	04 Sep 2014	Added Clip tags for intermissions
03	01 Dec 2015	Added the missing version attribute that is mandatory on root element
04	02 Mar 2016	Added unlisted attributes for multi-projector (reserved for internal use) Added SelectError Added support for Input clips
05	05 Apr 2017	Added Status under Clip and Cue Added Url under Clip
06	13 Mar 2018	Reviewed Clip duration for CPL in parts (intermission)
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1 Aim/objective

This document describes the structure of the show playlist (SPL) in an xml form as it should be exchanged through the communication interfaces of the SMS.

2 Scope

This document is intended for software engineers that need to manipulate show playlists content.

3 Show Playlist overview

3.1 Format

A show playlist can be created by users to assemble a sequence of clips that will be presented by the player as one show. The SPL also contains user cues that the player shall trigger at different position of the playlist.

3.2 Show playlist identifier

The SMS identifies each show playlist by its name and by a unique identifier:

- The SPL title is the human readable identifier for the end user. It must be unique on the SMS and will be used to reference SPL from the schedule.
- The SPL id is used to identify one exact instance of the SPL. Any change to a SPL requires a new id to be generated.

3.3 Saving

SPL xml document can be read and added to SMS.

Here's a summary of the 3 steps in the SMS logic to validate a new show:

1. If the SPL id exists, the operation is refused and the new show is not added.
2. If the SPL title exists, the SMS deletes the existing SPL and adds the new one.
3. If the SPL id and title do not exist, the SMS adds the new SPL.

3.4 Template show playlist

A show playlist is defined as a template show playlist when it contains one or more "placeholder" clips. The goal is to allow users to create new SPL based on templates just by replacing the placeholder(s) by real clips.

The player does not automatically resolve placeholder clips to real clips. Therefore template SPL should not be selected in player. By default, the player will handle placeholder clips as black clips.

Placeholder clips can be configured in the special clips section of the SMS settings. See the SMS Settings structure document for more details.

3.5 Cues

Users can place cues at different position of the playlist. Cues are identified by their name and should be configured in the SMS settings so that the SMS can map them to concrete actions.

See the SMS Settings structure document for more details.

4 Show playlist xml structure

The following describes the xml structure of the show playlist.

4.1 ShowPlaylist

The root node for the SMS settings is named *ShowPlaylist*. The version attribute is mandatory.

```
<ShowPlaylist version="1.0">
  <Id>77c7ee20-9988-4c9a-b95b-598634280f71</Id>
  <ContentTitleText>SPL example</ContentTitleText>
  <AnnotationText>an optional description</AnnotationText>
  <Issuer>SMS.fe</Issuer>
  <IssueDate>2013-09-13T10:06:01+00:00</IssueDate>
  <Creator>samfr</Creator>
  <ClipList>
    ...
  </ClipList>
</ShowPlaylist>
```

4.1.1 *Id*

The *Id* contains the unique id for the show playlist instance. It must contain a valid uuid.

4.1.2 *ContentTitleText*

This is a human readable title of the show playlist. This title must be unique on the SMS.

4.1.3 *AnnotationText*

This is an optional human readable description of the show playlist. It is purely informative.

4.1.4 *Issuer*

The *Issuer* refers to the software that was used to generate the show playlist.

4.1.5 *IssueDate*

The *IssueDate* is the date the SPL was created. It must contain a valid ISO 8601 date time string.

4.1.6 *Creator*

The *Creator* refers to the user that created the show playlist.

4.1.7 *ClipList*

The *ClipList* node contains the body of the show playlist. The body of the SPL is a sequence of clips that must be set in the expected performance order. Each clip can refer to several cues that can be executed during the play out of that clip.

```
<ClipList>
  <Clip>
    <Type>CPL</Type>
    <Id>668c58a9-de78-4f04-b1fa-f64a2725c88c</Id>
    <ContentTitleText>DCI 2K Sync Test 2.1.8</ContentTitleText>
    <DurationInMilliseconds>10000</DurationInMilliseconds>
    <ContentKind>test</ContentKind>
```

```
<StereoscopicOutputMode>AUTO</StereoscopicOutputMode>
<EntryPointFrameIndex>120</EntryPointFrameIndex>
<DurationInFrames>240</DurationInFrames>
<PartNumber>2</PartNumber>
<DynamicInsertionLevel>1</DynamicInsertionLevel>
<InvertSubtitlesZPosition>true</InvertSubtitlesZPosition>
<SubtitlesPngSize>2K</SubtitlesPngSize>

<CueList>
...
</CueList>
</Clip>
...
<Clip>
  <Type>Input</Type>
  <ContentTitleText>Live IP example</ContentTitleText>
  <DurationInMilliseconds>3000000</DurationInMilliseconds>
  <ContentKind>input</ContentKind>
  <ProjectorMacro>LIVE_MACRO</ProjectorMacro>
  <InputType>LIVE_IP_STREAMING</InputType>
  <SourceIpAddress>239.0.0.1</SourceIpAddress>
  <SourcePort>5557</SourcePort>
  <NetworkInterface>LAN 1</NetworkInterface>
  <VideoPID>AUTO</VideoPID>
  <AudioPID>41</AudioPID>
  <TextPID></TextPID>
  <AudioDelayInMilliseconds>0</AudioDelayInMilliseconds>
  <CueList/>
</Clip>
</ClipList>
```

4.1.7.1 Clip

The *Clip* node defines one occurrence of clip in the show playlist. A clip can be a CPL, a black clip or a placeholder. Each clip occurrence needs to provide a minimum set of metadata that can be used in case the referenced clip is missing.

4.1.7.1.1 Type

This is the type of the clip. It can be one of the following values:

- CPL: the clip is referencing a CPL identified with an id.
- Black: the clip is an instance of a black clip. The player will not play anything for the duration of the black clip.
- Placeholder: the clip is a placeholder that should be replaced by real clip (CPL) for a SPL to play correctly. For tests purpose, the placeholder is handled as a black clip in the player by default.
- Input: the clip is representing an alternative input clip. The player will first request the execution of the specified projector macro when starting the playback of such clip. Additional parameters can be filled in for live IP streaming clips like the source address and PIDs to select.

4.1.7.1.2 *Id*

This is the unique Id of the CPL clip. It is not required if the clip type is different than CPL.

4.1.7.1.3 *ContentTitleText*

This is the human readable title for this clip occurrence. It is mandatory and can be used to indicate to the user what content is missing for instance.

4.1.7.1.4 *DurationInMilliseconds*

This is clip duration expressed in milliseconds. For CPL clip this shall be the exact duration of the CPL unless only a part of the CPL is referenced. If the CPL is played in parts due to an intermission, the duration shall be the duration of that part.

For black and placeholder clips this value can be changed in each of their occurrences to adjust to user request.

For any type of clip, the minimum duration is 1000 milliseconds.

4.1.7.1.5 *ContentKind*

This is the content kind of the clip. This is mainly informative but can be used to force a certain content kind for placeholders.

The content kind value is an open string but it should match one of the standard CPL content kinds or it should have the additional "black" kind.

4.1.7.1.6 *StereoscopicOutputMode*

This is the stereoscopic mode in which the player should output the next clips of the show playlist. This is an optional field reserved for "black" clips. This mode applies to all clips following the current one unless another black clip changes this value.

It can be one of the following values:

- Force 2D: drop right frame of 3D clips (drop mode), 2D clips are played normally
- Force 3D: duplicate frames of 2D clips (clone mode), 3D clips are played normally
- Auto: play 2D clips in 2D and 3D clips in 3D

The *Auto* mode is applied by default at start of any playlist.

If the *StereoscopicOutputMode* is not specified in a black clip, the current mode is applied to next clips.

4.1.7.1.7 *EntryPointFrameIndex*

This is the frame at which to start the current CPL clip. It is a frame index relative to the CPL definition. If the value is outside the duration of the CPL, it will be ignored or bounded. This value is optional and is by default 0.

4.1.7.1.8 *DurationInFrames*

This is the duration in frames for the current CPL clip. It is a frame index relative to the CPL definition. If the value is outside the duration of the CPL including the value of `EntryPointFrameIndex`, it will be ignored or bounded. The clip duration cannot result in a clip of less than 1 second. This value is optional and is the CPL duration by default or the CPL remaining duration if an `EntryPointFrameIndex` higher than 0 was specified.

4.1.7.1.9 PartNumber

This indicates the part of the clip that will be played when a clip is divided in parts by an intermission. This is mainly informative for user interfaces. This value is optional and is 0 by default. If a clip is divided in several parts, the first part will start with a `PartNumber` set to 1 and the next parts will have an incremented value.

4.1.7.1.10 DynamicInsertionLevel

This is the insertion level of a clip when dynamically inserted by the player during selection. This is mainly informative for user interfaces. This value is optional and is 0 by default.

This value will be set to 1 or a higher value for clips that were inserted by the player.

4.1.7.1.11 CueList

The *CueList* node can only be found under a *Clip* node. Each cue must be attached to one clip. Cues are also given an offset for which the value must be in the range from 0 to the duration of the clip. While the offset will be used to execute cues, it is advisable to list the sequence of cues in their execution order.

The *CueList* node is currently mandatory and can be written "`<CueList/>`" when no cues are defined.

```
<CueList>
  <Cue>
    <Name>Lights 0%</Name>
    <OffsetInMilliseconds>1500</OffsetInMilliseconds>
  </Cue>
  ...
</CueList>
```

4.1.7.1.11.1 Cue

The *Cue* node defines one of the cues attached to the clip.

4.1.7.1.11.1.1 Name

This is the name of the cue. The name shall match one of the cues defined in the SMS automation settings else it will be ignored by the SMS.

4.1.7.1.11.1.2 OffsetInMilliseconds

This is the cue execution offset in milliseconds from the beginning of the clip. The value must be set in the range from 0 to the duration of the clip.

This node is mandatory.

4.1.7.1.11.1.3 Status

This value is reserved for the SMS to report the current cue execution status from the player. It should not be set by other software application.

Possible values are: "Pending", "Running", "Successful", "Error" and "Skipped".

4.1.7.1.12 *IsMasterSlaveSyncRequired*

This value is reserved for the SMS when exchanging playlist in a multiple projectors configuration. It should not be set by other software application.

This indicates that synchronization must occur on the current clip.

4.1.7.1.13 *IsEscape*

This value is reserved for the SMS when exchanging playlist in a multiple projectors configuration. It should not be set by other software application.

This indicates that the current clip is an Escape clip that has to be present on slave projectors.

4.1.7.1.14 *IsDualProjector*

This value is reserved for the SMS when exchanging playlist in a multiple projectors configuration. It should not be set by other software application.

This indicates that the current clip is a dual projector clip that has to be present on slave projectors.

4.1.7.1.15 *ProjectorMacro*

This contains the name of the projector macro to execute when starting the playback of an Input clip. This value must be present for clips of the Input type but is ignored on other clips.

4.1.7.1.16 *InputType*

This indicates the type of input selected for specific Input clips. The current supported values are:

- ALT_INPUT: only the projector macro is required to play this type of clip. This is the default value in case *InputType* is not specified or not recognized.
- LIVE_IP_STREAMING: the clip is a live IP streaming and requires more parameters: the source address and PIDs to select

4.1.7.1.17 *SourceIpAddress*

This is the IP address of the live stream source used for a live IP streaming clip. It must be specified when the *InputType* is LIVE_IP_STREAMING but is ignored in other cases.

4.1.7.1.18 *SourcePort*

This is the port number of the live stream source used for a live IP streaming clip. It must be specified when the *InputType* is LIVE_IP_STREAMING but is ignored in other cases.

4.1.7.1.19 *NetworkInterface*

This is the network interface to be used to receive the live stream. It should be specified when the *InputType* is LIVE_IP_STREAMING but is ignored in other cases. Default value = "LAN 1".

4.1.7.1.20 *VideoPID*

This is the video PID to select for a live IP streaming clip. It can contain the value "AUTO" or a valid PID number. "AUTO" is the default value in case this field is not specified or not recognized.

4.1.7.1.21 *AudioPID*

This is the audio PID to select for a live IP streaming clip. It can contain be empty, the value "AUTO" or a valid PID number. And empty value means that audio is not selected. It is the default value in case this field is not specified or not recognized.

4.1.7.1.22 *TextPID*

This is the text PID to select for a live IP streaming clip. It can contain be empty, the value "AUTO" or a valid PID number. And empty value means that no text is rendered. It is the default value in case this field is not specified or not recognized.

4.1.7.1.23 *AudioDelayInMilliseconds*

This is the audio delay to apply for a live IP streaming clip. Default value = 0.

4.1.7.1.24 *SelectError*

This value is reserved for the SMS to report an error that occurred during selection. It should not be set by other software application.

This can contain one error code as defined by the SMS. There's no error if this field is not present or if its value is 0.

4.1.7.1.25 *Status*

This value is reserved for SMS to report the current clip status from the player. It should not be set by other software application.

Possible values are: "Pending", "Running", "Successful", "Warning", "Error", and "Skipped".

4.1.7.1.26 *Url*

This is the URL from where the clip is to be played. The support for URLs is implementation dependent and may be limited to SMS internal usage. Note that such a show containing the *Url* element may be added on the system but its validity and behavior are not guaranteed.

4.1.7.1.27 *InvertSubtitlesZPosition*

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This optional value can be used to invert the subtitle ZPosition effect of 3D subtitles for the current clip. For instance, 3D Interop content may require this flag to be enabled. The possible values are "true" or "false".
Default value = "false".

4.1.7.1.28 *SubtitlesPngSize*

This optional value can be set to override the default PNG size in case it does not match the DCP size. For instance, 4K Interop content may contain subtitles with 2K PNG that require upscale when playing 4K. The possible values are "2K" ("4K" is accepted but may not be supported).

If not present, subtitles are assumed to be of the same size as the DCP.