

SMS: Settings structure

Ver.	Date	Reason for revision
00	15 Nov 2013	Initial version.
01	08 Jan 2014	Added time zone description and DST info for the UI.
02	11 Feb 2014	Added Content settings.
03	11 Mar 2014	Added OpenSettings section.
04	07 Jul 2014	Added StereoscopicOutputMode for special clips.
05	11 Sep 2014	Added version info to support updates of existing settings.
06	15 Sep 2014	Changed DST options.
07	13 Oct 2014	Added DisplayPorts section.
08	10 Feb 2014	Added NTP and clock synchronization under System. Settings version 1.2.
09	10 Jul 2015	Added ImmersiveSound section.
10	03 Dec 2015	Added MaximumPlayTriggerDelayInSeconds in the Schedule section. Added warning about the DefaultGateway value in Network settings.
11	14 Mar 2016	Added InputClips section
12	16 Jun 2016	Added missing MultiProjection section Added Type for ImmersiveSound
13	07 Nov 2017	Added optional DarkScreenDetection under Schedule section Added optional SmpteSyncDelayInMilliseconds under Player section
14	04 Jul 2018	Added optional MaintainConnection for Automation devices

Table of content

1	Aim/objective	2
2	Scope	2
3	Settings overview	2
3.1	Format	2
3.2	Applying settings	2
3.3	Versioning	2
4	Settings xml structure	2
4.1	SmsSettings	2
4.1.1	Screen	3
4.1.2	Schedule	3
4.1.3	Users	5
4.1.4	Player	6
4.1.5	SpecialClips	8
4.1.6	Storages	9
4.1.7	Automation	9
4.1.8	System	14
4.1.9	Content	16
4.1.10	Network	17

SMS: Settings structure

4.1.11	OpenSettings	19
4.1.12	DisplayPorts	19
4.1.13	ImmersiveSound	20
4.1.14	InputClips	20
4.1.15	MultiProjectors	22

1 Aim/objective

This document describes the structure of the SMS settings in an xml form as it should be exchanged through the communication interfaces of the SMS.

It gives a quick description of all values that can be configured but doesn't list all supported features by the SMS (automation actions, supported devices...).

2 Scope

This document is intended for software engineers that need to manipulate settings.

3 Settings overview

3.1 Format

Settings are defined in a tree form. The whole SMS settings can be exported as one complete xml document or can be transferred partially by only listing the required sections. Those sections will be defined as direct child nodes of the root SMS settings.

3.2 Applying settings

Settings can be applied to the SMS as one xml document. The document should only contain section(s) to update to reduce the impact of changes. When one section is specified in the xml the SMS will overwrite existing values with new ones. To add new values to existing settings, the client software shall read existing values, merge new values and save the result to the SMS.

3.3 Versioning

When applying settings or when updating the SMS system, the SMS will manage compatibility between settings versions with the following restrictions:

- Missing fields will be initialized with default value
- Unknown fields will be ignored and can be lost when applying settings
- SMS only exports settings in the version that is supported by the software

4 Settings xml structure

The following describes the xml structure of the settings.

4.1 SmsSettings

The root node for the SMS settings is named *SmsSettings*.

SMS: Settings structure

Direct child nodes are defined as sections. When updating settings, the SMS shall update only the sections that are present in the xml document it receives.

```
<SmsSettings version="1.2">
...
</SmsSettings>
```



Note: version attribute is used by the SMS to manage the version of the settings. If this attribute is not present the version is assumed to be "1.0".

The version update operations are specific to the SMS implementation and are not described in this document.

When reading settings from the system, the client application should check the version to adapt its behavior and save back the correct version to the SMS.

4.1.1 Screen

The *Screen* section defines settings related to the screen controlled by the SMS.

```
<Screen>
  <AuditoriumName Value="User readable name of the screen"/>
</Screen>
```

4.1.1.1 AuditoriumName

This is a human readable name for the auditorium of the screen.

4.1.2 Schedule

The *Schedule* section defines settings for the schedule management.

```
<Schedule>
  <IsEnabledByDefault Value="true"/>
  <MaximumDelayInMinutes Value="10"/>
  <PreSelectionDelayInMinutes Value="30"/>
  <HistoryLengthInDays Value="30"/>
  <MaximumPlayTriggerDelayInSeconds Value="0"/>
  <DarkScreenDetection IsEnabled="true" TimeoutInSeconds="10"
    IsLinkedToScheduledMode="true"/>
</Schedule>
```

4.1.2.1 IsEnabledByDefault

This defines the default state of the schedule at startup.

"true" means the player is controlled by the scheduler (*Scheduled* mode).

"false" means the player is controlled manually (*Manual* mode).

Default value = "true".

4.1.2.2 MaximumDelayInMinutes

This defines the maximum delay for which the SMS will attempt to start a scheduled show from its scheduled start time. This will be used in case the player is busy and cannot start the show at the scheduled time.

Default value = 15 minutes.

4.1.2.3 PreSelectDelayInMinutes

Based on this value, the SMS will attempt to select a scheduled show in advanced for the given values. If the player is busy, the SMS shall retry the show selection every minute from then.

Default value = 30 minutes.

4.1.2.4 HistoryLengthInDays

This defines length of the schedule history. Past scheduled shows older than that are automatically deleted.

Default value = 30 days.

4.1.2.5 MaximumPlayTriggerDelayInSeconds

This field is new in version 1.3 of the settings.

This defines the maximum delay the system can wait for an input cue to trigger the play of the scheduled show. If the value is above 0, the system will not start to play the next scheduled shows unless the trigger is received or this maximum delay expires. The play trigger is the Automation action "Play Next Scheduled Show" of the SCHEDULER device.

Default value = 0 seconds. This default value is compatible with the previous behavior.

4.1.2.6 DarkScreenDetection

This optional element allows configuring the dark screen detection. When enabled and when the player is in scheduled mode, the system will check the output. If the output remains black for the configured timeout, the system will trigger an error on the projector.

4.1.2.6.1 IsEnabled

This indicates if the dark screen detection should be enabled or disabled.

"true" means enabled.

"false" means disabled.

Default value = "true".

4.1.2.6.2 TimeoutInSeconds

This is the timeout after which an error is reported if the output remains black while playing.

Allowed range = from 1 to 1048.

Default value = "10".

4.1.2.6.3 IsLinkedToScheduledMode

This optional attribute indicates if the activation of the dark screen detection is linked to the activation of the scheduled mode.

"true" means enabled only when the player is in scheduled mode.

SMS: Settings structure

"false" means enabled whatever the player mode is.
Default value = "true".

4.1.3 Users

The *Users* section defines the list of users that the SMS will accept on login requests. Each user is defined under a *User* node. The order in the list has no importance.



Note: the user list shall always contain one user with the USER_ADMINISTRATOR role and one user with the USER_SHOW_MANAGER role.

```
<Users>
  <User UserName="admin" PasswordHash="dRyz9KoXw2GG9IVsiYK/Jw=="
    Role="USER_ADMINISTRATOR"/>
  <User UserName="show" Password="Show1234" Role="USER_SHOW_MANAGER"/>
  <User UserName="proj" Password="Project1234" Role="USER_PROJECTIONIST"/>
</Users>
```

4.1.3.1 UserName

This is the user name that must be unique on the SMS and cannot be one of the reserved users.

4.1.3.2 PasswordHash

This is the hashed password value. It can only be computed by the back-end. When adding a user or updating a password, the caller must use the Password attribute to send the new password.

4.1.3.3 Password

This is the plaintext password value. This must be used when creating a new user or when changing a password. This value will never be exported by the back-end when reading the settings.

The password strength is validated by the back-end and will be rejected if it doesn't meet the following requirements:

- Password must contain ascii characters only
- Password length must be of 8 characters minimum

4.1.3.4 Role

This is the role of the user. Roles are used by the SMS to restrict access to some features.

The value must be one of the following:

- USER_MONITORING: read-only access to monitor SMS status.
- USER_PROJECTIONIST: access to control projection.
- USER_SHOW_MANAGER: show and schedule edition and content

SMS: Settings structure

management.

- USER_ADMINISTRATOR: full access to the SMS configuration.

4.1.4 Player

The *Player* section defines settings *related to the projection*.



Note: this section can only be applied when nothing is selected in the Player to avoid inconsistent play out options.

```
<Player>
  <AudioDelayInMilliseconds Value="83"/>
  <SmpteSyncDelayInMilliseconds Value="-300"/>
  <AudioOutputFrequencyInHerz Value="48000"/>
  <VideoOutputResolution Value="AUTO"/>

  <AudioOutputChannelMap>
    <Channel Value="1" IsEnabled="true">
      <Label Value="L"/>
      <Label Value="CH01"/>
    </Channel01>
    ...
    < Channel Value="16" IsEnabled="false">
      <Label Value="VI"/>
      <Label Value="VI-N"/>
      <Label Value="CH16"/>
    </Channel16>
  </AudioOutputChannelMap>
</Player>
```

4.1.4.1 AudioDelayInMilliseconds

This is the delay in milliseconds to apply in order to synchronize the audio and the video output. The value is an integer that must be in the range from -200 to +200. Default value = 83.

4.1.4.2 AudioOutputFrequencyInHerz

This is the output frequency in Herz of audio samples. The supported values are 48000 or 96000. Default value = 48000.

4.1.4.3 VideoOutputResolution

This is the output resolution accepted for the video (maximum). The value should always be set to "AUTO" to let the system detect the correct output. Default value = AUTO.



CAUTION: writing another value than "AUTO" can corrupt some hardware and cause damages.

4.1.4.4 AudioOutputChannelMap

This describes the mapping of audio channels on each audio output. Input channels are identified by labels that are defined based on the source content.

4.1.4.4.1 Channel

This is the configuration entry for one of the output channels. There shall be 16 output channel assignments defined and one channel can only be defined once.

4.1.4.4.1.1 Id

This identifies the AES output channel and must contain a value from 1 to 16. The value should only be present once in the settings.

4.1.4.4.1.2 IsEnabled

This optional attribute is used to indicate that the AES output channel is physically connected or not. It is mainly informative for technicians and has no real impact on the output.

Possible values are: "true" or "false".

Default value is "true".

4.1.4.4.1.3 Label

This defines one audio channel label to be assigned to the current output channel. The label value is to be found in the source labels definition. The list of these labels can be returned in the definition.



Note: one output channel can be assigned several input labels from different input configurations. It cannot be assigned two input labels that are listed in the same input configuration. For instance "L" and "R" cannot be assigned to the same output.



Note: an input label can be duplicated on different output channels. Those channels will output the same audio data.

4.1.4.5 SmpteSyncDelayInMilliseconds

This is the additional audio delay in milliseconds to apply when using the 'SMPTE Sync' channel to synchronize with external devices using that sync signal. It is ignored if no audio channel is assigned the 'SMPTE Sync' label else the value is added to the value of *AudioDelayInMilliseconds*. The resulting total delay is applied to all channels.

Default value = -300.

The value must be in the range from -500 to 0.

The total value of *AudioDelayInMilliseconds* + *SmpteSyncDelayInMilliseconds* must be in the range from -500 to +200.



Note: The 'SMPTE Sync' is generated by the system whenever a show or a CPL is loaded in the player.

See SMPTE 430-14 for more information.

4.1.5 SpecialClips

The *SpecialClips* section defines the list of special clips available for insertion in a show playlist by a show manager. Once inserted in a show, special clips and their parameters are copied to the show playlist instance and they can be edited within the show. The clip duration can be changed for instance.

Each clip is defined under a *SpecialClip* node. The order in the list has no importance.

```
<SpecialClips>
  <SpecialClip Type="BLACK" Title="Black" ContentKind="black"
    DurationInMilliseconds="5000" StereoscopicOutputMode="FORCE 2D" />
</SpecialClips>
```

4.1.5.1 Type

This defines the type of the clip.

Currently supported values are:

- **BLACK:** black output. This allows users to insert automation cues between normal clips of a show playlist.
- **PALCEHOLDER:** placeholder for template shows. A placeholder should be replaced by one or more valid clips.

4.1.5.2 Title

This defines the human readable title for the clip. It must be unique in the special clip list.

4.1.5.3 ContentKind

This is the kind of clip it represents. The following values are defined but the list could be extended later: *black, feature, trailer, test, teaser, rating, advertisement, short, transitional, psa, policy*.

4.1.5.4 DurationInMilliseconds

This is the default duration in milliseconds for the clip. When the special clip is inserted in a show playlist, this value can be changed within the show itself.

4.1.5.5 StereoscopicOutputMode

This is an optional attribute of the black clip to modify the stereoscopic output of the next clips of a show playlist. When this attribute is empty or not present, the output mode is not changed.

When the special clip is inserted in a show playlist, this value can be changed within the show itself.

"AUTO" sets back the playlist in an automatic switch between 2D and 3D, based on the source content.

SMS: Settings structure

"FORCE 2D" forces the next clips to be played in 2D only, even 3D clips.

"FORCE 3D" forces the next clips to be played in 3D only, even 2D clips.

4.1.6 Storages

The *Storages* section defines the list of servers accessible on the media network that can be used by the SMS as sources for ingest. However the SMS can ingest from sources that are not configured in the settings (URLs are provided by client applications through the SMS API). The goal here is to set preconfigured content sources for daily used from a SMS front-end application.

Each server is defined under a *RemoteStorage* node. The order in the list has no importance.

```
<Storages>
  <RemoteStorage Name="Movies central storage"
    Url="ftp://ftpuser:ftppwd@192.168.1.111/content/movies"/>
</Storages>
```

4.1.6.1 Name

This defines the human readable name for this source storage. It must be unique in the list of remote storage.

4.1.6.2 Url

This is the root URL used by the SMS to access files from the source. This URL shall contain user and password used to access the source.

The current supported protocols are ftp, smb and nfs with urls that should respect one of the following forms:

"smb://user:pwd@hostname/path?iocharset=utf8;file_mode=0777;dir_mode=0777"

"nfs://hostname/path"

"ftp://user:pwd@hostname/path"

4.1.7 Automation

The *Automation* section lists all automation related settings. It defines the following sub-sections that are detailed further in the document:

- *Devices*: communication ports settings to access external devices controlled by the automation.
- *Events*: event cues that are triggered from different sources and to which can be assigned actions to be executed by the automation engine. This list all types of cues.
- *Groups*: groups used to present cues to end users with additional presentation and behavior options.

There are references between those sub-sections implying they should not be updated independently.

Event Cues

The SMS automation manages the following types of event cues:

SMS: Settings structure

- **User cues:** cues that are configured on the SMS to be executed by end user manually (through the SMS API) or to be executed by the Player during the projection of a show playlist (cues inserted inside the SPL).
- **Input cues:** predefined cues that are triggered on the detection of an input by software modules (GPIO modules or others).
- **Software cues:** predefined cues that are triggered by software modules when detecting a new condition (for instance, when the playback reaches the end of the show).

When any of these event cues is triggered, the SMS will execute all actions that are configured for that event cue. An event cue can be assigned a list of actions, each with an optional delay from the event occurrence.

Actions

The SMS provides a list of predefined Actions to be executed when an event cue is triggered. The actions shall have a *Target* (what module implement the action), an *ActionName* (to identify the action), some *Parameters* (depending on the action) and an optional delay.

4.1.7.1 Devices

The *Devices* sub-section defines a list of communication port that the SMS will use to control external devices. Each device is defined under a *Device* node. The order in the list has no importance.

```
<Devices>
  <Device IsEnabled="true" Type="JNIOR" Name="jnior 09">
    <DeviceSettings Hostname="10.120.1.9" Port="61412"
      User="jnior" Password="jnior1234"/>
  </Device>
  <Device IsEnabled="true" Type="TCP" Name="TCP_Device">
    <DeviceSettings Hostname="10.120.2.10" Port="9999"
      MaintainConnection="true" />
  </Device>
</Devices>
```

4.1.7.1.1 Name

This is a human readable name for the port. It must be unique and will be used to identify the port.

4.1.7.1.2 Type

This defines the type of the port. A list of supported port types can be provided next to the settings.

Supported values are:

- TCP: establish a connection to a device over Ethernet and allows sending simple text messages to that device.
- JNIOR: establish a connection to a JNior device. This gives access to additional GPIO over Ethernet.

SMS: Settings structure

Several devices of the same type can be defined on the SMS but each with unique name.

4.1.7.1.3 *IsEnabled*

This defines whether to instantiate or not the communication with that device. This is mainly defined for test purpose.

"true" means the communication with the device will be initiated. The SMS will permanently try to establish a connection with the device.

"false" means the device is ignored by the SMS. Any automation action to that device will fail.

Default value is "true".

4.1.7.1.4 *DeviceSettings*

This defines communication settings to connect to the device. Those settings are specific to each type of device. The following settings are current standard settings.

4.1.7.1.4.1 *Hostname*

This is the host name or IP address of the Ethernet device to connect to.

4.1.7.1.4.2 *Port*

This is the port number of the Ethernet device to connect to.

4.1.7.1.4.3 *User*

This is the user name to be used when login onto the device. Not all devices require a login.

4.1.7.1.4.4 *Password*

This is the user password to be used when login onto the device. Not all devices require a login.

4.1.7.1.4.5 *MaintainConnection*

This option can be used to maintain a single TCP connection between the SMS and the device. If not active, the SMS will open a new connection for each command sent to the device.

Default value is "false".

4.1.7.2 *Events*

This automation *Events* sub-section defines a list of event cues managed by the SMS. When one event cue is signaled, the SMS will execute the attached actions. Each event is defined under an *Event* node. The order in the list has no importance.

```
<Events>
  <Event Source="PLAYER" Name="On Show End">
    <Action Target="MyJNior" Name="Set Outputs" DelayInMilliseconds="1000">
      <Parameter Value="Down" Name="Port 1"/>
      <Parameter Value="Up" Name="Port 2"/>
    </Action>
    <Action Target="AUTOMATION" Name="Trigger User Cue"
```

```
                DelayInMilliseconds="1000">
                <Parameter Value="Lamp Off"/>
            </Action>
        </Event>
    </Events>
```

4.1.7.2.1 Source

This indicates the source of the event. The possible values are:

- USER_CUE: define a cue that can be inserted in a show and triggered by the player during projection or it can be triggered manually through an SMS API call.
- PLAYER: the event is signaled by the player on state changes, when reaching the end of the show for instance. Those events are predefined.
- GPIO: the event is signaled when a GPI state is changed. The list of events is predefined to match the 2 states of all available input channels.
- <Device-name>: the event is signaled by one of the configured devices (see Devices). The list of events is specific to each device type. For instance, a JNior device will provide events similar to the GPIO.

Other sources can be defined later.

4.1.7.2.2 Name

This identifies the event by a name. For USER_CUE, the name is edited by the end user. For other sources, the name shall match one of the predefined.

4.1.7.2.3 Actions

This node contains all actions that will be executed by the SMS once the event is triggered. Each action is defined under an *Action* node. The order in the list has no importance and the SMS shall use the delay value to execute the action in the correct order.

4.1.7.2.3.1 Target

This indicates the target that will execute the action. The current possible values are:

- AUTOMATION: predefined actions on the automation (trigger a user cue).
- PLAYER: predefined actions on the Player.
- GPIO: predefined actions on the GPO.
- PROJECTOR: predefined actions on the projector.
- <Device-name>: predefined action on one of the configured device.

4.1.7.2.3.2 ActionName

This identifies the predefined action to execute on the Target.

4.1.7.2.3.3 Parameters

This optional node contains the parameters necessary to execute the action. Each parameter is found under a *Parameter* child node with Value and Name attributes. The Name attribute will be used to identify the parameter when executing the action but the order of the parameters in the definition must be respected.

SMS: Settings structure

Some actions have no parameters and some can support a variable list of parameters.

4.1.7.2.3.4 DelayInMilliseconds

This defines an optional delay in milliseconds for the SMS to execute the action after the event is signaled.

The SMS shall execute all actions attached to an event by taking into account this delay.

Default value = 0 ms.

4.1.7.3 Groups

This automation *Groups* sub-section defines groups to present the user cues to end user. Groups are also used to define some behavior for user cues management by the player (see *SplBehavior*).

Each group is defined under a *Group* node. The order in the list has no importance.

```
<Groups>
  <Group Name="Projector lamp"
    CanBeTriggeredManually="true" CanBeInsertedInSpl="true"
    SplBehavior="STATE_BASED">

    <Cue Name="Lamp On" Icon="projectorLampOn"/>
    <Cue Name="Lamp Off" Icon="projectorLampOff"/>
  </Group>
</Groups>
```

4.1.7.3.1 Name

This is a human readable name for the group. It should be unique but is only used for presentation.

4.1.7.3.2 CanBeTriggeredManually

This indicates if the cue can be triggered by an API call

"true" means yes.

"false" means no.

Default value = "true".

4.1.7.3.3 CanBeInsertedInSpl

This indicates if the cue can be triggered by the player if the cue was inserted in a show playlist.

"true" means yes.

"false" means no.

Default value = "true".

4.1.7.3.4 SplBehavior

This defines the execution behavior of the player when the cues are place in a show playlist. This is mainly used when positioning in the timeline.

Possible values are:

- PUNCTUAL: the only execute the cues when their time position in the playlist

SMS: Settings structure

is reached.

- STATE_BASED: when positioning, only the last cues of the group from the begin of the playlist is executed to reach a correct state (the last one)
- CUMULATIVE: when positioning, all cues from the begin of the playlist are executed.

Default value = PUNCTUAL.

4.1.7.3.5 Cues

This node contains all cues that are member of the group and follow the settings of the group. An event cue shall not be found in two groups. Each cue is defined under a *Cue* node. The order in the list has no importance.

4.1.7.3.5.1 Name

This is the name of one user cue that must be defined in the Events. The name shall refer to one of the user cue and cannot refer to other types of cues.

4.1.7.3.5.2 Icon

This identifies the icon of the cue when displayed in user interfaces. Icons are optional and are not managed or processed by the system.

4.1.8 System

The *System* section defines settings applied on the Target system.



Note: version 1.1 of the settings is defining new xml tags to replace the previous ones. The implementation shall provide an automatic update.

```
<System>
  <ZoneInfo Name="Europe/Brussels" OffsetInMinutes="+60" CurrentDST="1"/>
  <IsAutomaticDSTEnabled Value="true"/>
  <NTP>
    <Server URL="1.be.pool.ntp.org"/>
  </NTP>
  <SystemClock SyncSource="NTP"/>
  <SecureClock AdjustmentSource="SystemClock"/>
  <TimeZone Value="+60"/>
  <TimeZoneDescription Value=""/>
  <DoesTimeZoneOffsetIncludeDST Value="false"/>
</System>
```

4.1.8.1 ZoneInfo

This field is new in version 1.1 of the settings.

This is the current zone info that can be selected by the user. This should match one of the zone info listed in the settings definitions that can be retrieved from the system.

4.1.8.1.1 Name

SMS: Settings structure

This is the name that identifies the current zone.

4.1.8.1.2 OffsetInMinutes

This indicates the selected zone offset in minutes from the UTC time.
This value is read-only.

4.1.8.1.3 CurrentDST

This indicates the current DST offset that is applied. The value can be -1, 0 or 1.
This value is read-only and can change over the time.

4.1.8.2 IsAutomaticDSTEnabled

This field is new in version 1.1 of the settings.
This indicates if the system will automatically adjust to the DST.
The value can be "true" or "false".

4.1.8.3 NTP

This field is new in version 1.2 of the settings.
It can contain a list of NTP servers. At least one server must be configured to allow NTP synchronization for the system time.

4.1.8.3.1 Server

4.1.8.3.1.1 URL

This field is new in version 1.2 of the settings.
This contains the URL of the NTP server to be used by the system as reference for the time. An IP address can be used.

4.1.8.4 SystemClock

This field is new in version 1.2 of the settings.

4.1.8.4.1 SyncSource

This field is new in version 1.2 of the settings.
It allows specifying the source used to synchronize the system clock. The value can be one of the following:

- "SecureClock" (default): the system clock will be synchronized with the secure clock.
- "NTP": the system clock will be synchronized using the configured NTP servers. At least one server should be defined under NTP.

This list of source could be extended later.

4.1.8.5 SecureClock

This field is new in version 1.2 of the settings.

4.1.8.5.1 AdjustmentSource

SMS: Settings structure

This field is new in version 1.2 of the settings.

It allows specifying the source used to adjust the secure clock. The value can be one of the following:

- "Manual" (default): the secure clock can be adjusted manually by a user.
- "SystemClock": the secure clock will be automatically adjusted based on the system clock.



Note: the secure clock cannot be adjusted more than allowed by the DCI specifications (+-6 minutes per calendar year). Automatic adjustments are limited following the same restriction.

4.1.8.6 TimeZone (DEPRECATED)

This field is only available in version 1.0 of the settings.

This is the current time zone offset in minutes from the UTC time. The SMS works in UTC and doesn't manage time zone and doesn't handle daylight saving time.

Default value = 0.

4.1.8.7 TimeZoneDescription (DEPRECATED)

This field is only available in version 1.0 of the settings.

This is an open string value used by user interface to store information about the selected time zone.

Default value = "".

4.1.8.8 DoesTimeZoneOffsetIncludeDST (DEPRECATED)

This field is only available in version 1.0 of the settings.

This node is used by the user interface to store an indication that the current offset takes into account the Daylight Saving Time.

"true" means yes.

"false" means no.

Default value = false.

4.1.9 Content

The *Content* section defines settings for Content Management on the Target system.

```
<Content>
  <AutomaticCleanup NbOfDaysBeforeRemovingExpiredKdms="7"/>
  <LocalStorage IsDisabled="false" Type="RAID"/>
</Content>
```

4.1.9.1 AutomaticCleanup

This provides options for automatic cleanup of the content.

4.1.9.1.1 NbOfDaysBeforeRemovingExpiredKdms

This is the number of days after the end date of a KDM time window from which expired KDM are automatically removed.

Default value = 7.

4.1.9.2 LocalStorage

This provides options for the management of the local storage.

4.1.9.2.1 IsDisabled

This indicates if the local storage is disabled. When set to "true", the system will not report any errors about missing HDD.

Default value = "false".

4.1.9.2.2 Type

This indicates the type of the local storage. Types can be "RAID" or "NAS". However the "NAS" option is reserved for testing and is using predefined connection settings. Default value = "RAID".

4.1.10 Network

The *Network* section defines network settings for the Media port of the SMS. There are limits on what range can be used in order to avoid communication issues:

- User cannot assign IP addresses in the same range than the projector one
- User cannot assign IP addresses in the same range for both ports
- User cannot assign IP addresses in the same range than the internal network inside the projector (192.168.254.0/24)



CAUTION: changing Ethernet setting on the SMS or on the projector can disrupt communications.

```
<Network>
  <Hostname Value="ICMP-00001"/>

  <MediaAdapter1 >
    <IsDhcpEnabled Value="true"/>
    <FixedIp IPAddress="150.158.241.245" Subnet="255.255.255.0"
      DefaultGateway=""/>
  </MediaAdapter1>

  <MediaAdapter2 >
    <IsDhcpEnabled Value="false"/>
    <FixedIp IPAddress="10.10.10.12" Subnet="255.255.0.0"
      DefaultGateway="" MTU="1500"/>
  </MediaAdapter2>

</Network>
```

4.1.10.1 Hostname

This is the system hostname over the network.

There shall be restriction in the characters that can be used based on network hostname rules.

SMS: Settings structure

Note: the hostname defined here is an example.

Note: we may want to prevent editing the hostname.

4.1.10.2 MediaAdapterX

MediaAdapter1 and MediaAdapter2 contain settings for the each Media network adapter of the system.

4.1.10.2.1 *IsDhcpEnabled*

This tells if the adapter runs in dhcp.

“true” means yes.

“false” means no. In that case, FixedIp settings are ignored.

Default value = “true”.

4.1.10.2.2 *FixedIp*

This provides IP settings for the adapter when the dhcp is disabled.

Several Ip settings can be stacked on the same adapter by repeating this entry several times under the adapter.

Note: unless required, we will limit the number of IP addresses assigned to a port down to 1 address maximum.

4.1.10.2.2.1 IpAddress

This provides the IP address to link to that adapter.

This must be a valid IP address with 4 digits.

4.1.10.2.2.2 Subnet

This provides the subnet of the IP address.

This must be a valid IP subnet with 4 digits.

4.1.10.2.2.3 DefaultGateway

This provides the IP address of the network default gateway.

This must be a valid IP address with 4 digits or can be left empty. A value of “0.0.0.0” is equivalent to empty.



CAUTION: ideally, only the projector gateway should be filled. The default gateway of the SMS should be left empty. Defining multiple gateways on the different network interfaces may lead to communication issues.

4.1.10.2.2.4 MTU

This optional parameter provides the MTU (packet size) to be used on network communication.

Default value = 1500.



CAUTION: wrong MTU values can cause troubles in Ethernet communications.

4.1.11 *OpenSettings*

The *OpenSettings* section can be used by client applications to store their own defined settings in the ICMP in order to share them. The system will not parse the xml structure found under this node. It is up to client applications to manage that structure.



CAUTION: when adding new settings, client applications have to manage the update of existing data knowing that the system will overwrite any existing values with the new ones.



CAUTION: client applications should not make an intensive use of those settings.

```
<OpenSettings>
  <WebCommander arg1="true"/>
  ...
</OpenSettings>
```

4.1.11.1 *WebCommander*

This is an example of node that can be found under the *OpenSettings* node. Client applications should

4.1.12 *DisplayPorts*

The *DisplayPorts* section defines settings related to display ports.

```
<DisplayPorts>
  <IRQ2UnplugMode Value="AUTO"/>
  ...
</DisplayPorts>
```

4.1.12.1 *IRQ2UnplugMode*

This field allows to enable or to disable the IRQ2Unplug functionality on display port inputs.

The following values are supported:

"AUTO": the system enables or disables the IRQ2Unplug functionality based on the projector model. This is the default value.

"ENABLED": the IRQ2Unplug functionality is always enabled.

"DISABLED": the IRQ2Unplug functionality is always disabled.

4.1.13 *ImmersiveSound*

The *ImmersiveSound* section defines settings related to management and rendering of immersive sound.

```
<ImmersiveSound>
  <Renderer IsEnabled="true" Hostname="10.1.2.3" Type="" />
</ImmersiveSound>
```

4.1.13.1 **Device**

This field allows configuring the communication with the renderer of the immersive sound.

Only one renderer is allowed.

4.1.13.1.1 *IsEnabled*

Enables or disables the communication with the renderer.

"true" means enabled.

"false" means disabled.

Default value = "false".

4.1.13.1.2 *Hostname*

This field contains the IP address or hostname of the renderer. The IP address will be used for control and streaming of data between the SMS and the renderer.

4.1.13.1.3 *Type*

This field contains the type of immersive sound supported by the renderer.

Default value = "Dolby Atmos".

4.1.14 *InputClips*

The *ImmersiveSound* section defines settings related to management and rendering of immersive sound.

```
<InputClips>
  <InputClip Title="A live event" ProjectorMacro="LIVE_INPUT"
    ContentKind="input" DurationInMilliseconds="3600000"
    InputType="LIVE_IP_STREAMING"
    SourceIpAddress="239.0.0.1"
    SourcePort="5557"
    NetworkInterface="LAN 1"
    VideoPID="AUTO" AudioPID="44"
    TextPID=""
    AudioDelayInMilliseconds="0"/>
</InputClips>
```

4.1.14.1 **Title**

This defines the human readable title for the clip. It must be unique in the input clip list.

4.1.14.2 ProjectorMacro

This is the name of the projector macro to execute when starting the playback of this clip.

4.1.14.3 ContentKind

This is the kind of clip it represents. A new content kind is defined for input clips: *input*. It is the default for input clips.

4.1.14.4 DurationInMilliseconds

This is the default duration in milliseconds for the clip. When the input clip is inserted in a show playlist, this value can be changed within the show itself and must be greater than zero.

4.1.14.5 InputType

This is the type of input selected by this clip. Additional parameters can be used based on this value. Currently supported values are:

- "ALT_INPUT": default value. No specific parameters else than the projector macro are required.
- "LIVE_IP_STREAMING": the clip shall play a live IP stream and requires more parameters.

4.1.14.6 SourceIpAddress

This is the IP address of the source.

It is require when the input is a live IP stream.

4.1.14.7 SourcePort

This is the port number of the source.

It is require when the input is a live IP stream.

4.1.14.8 NetworkInterface

This is the network interface to be used. The possible values depend on hardware.

It is used when the input is a live IP stream.

The default value is "LAN 1".

4.1.14.9 VideoPID

This is the PID of the video data to be played from the live stream. It can be "AUTO" or a valid PID.

It is used when the input is a live IP stream.

The default value is "AUTO".

4.1.14.10 AudioPID

This is the PID of the audio data to be played from the live stream. It can be "NONE", "AUTO" or a valid PID.

It is used when the input is a live IP stream.

The default value is "NONE".

4.1.14.11 TextPID

This is the PID of the text data to be played from the live stream. It can be "NONE", "AUTO" or a valid PID.

It is used when the input is a live IP stream.

The default value is "NONE".

SMS: Settings structure

4.1.14.12 AudioDelayInMilliseconds

This is the audio delay to apply when playing audio and video.
It is used when the input is a live IP stream.
The default value is 0 milliseconds.

4.1.15 MultiProjectors

The *MultiProjectors* section defines settings for the master or for the slave projectors of a multiple projectors setup.

On a master projector:

```
<MultiProjectors>
  <Master IsEnabled="true" ExtendedScreen="MAIN" PlayedFrames="BOTH"/>
  <Slaves>
    <Slave IpAddress="172.30.1.2" ExtendedScreen="LEFT" PlayedFrames="BOTH"/>
    <Slave IpAddress="172.30.1.3" ExtendedScreen="RIGHT" PlayedFrames="BOTH"
      IsLtcOutputEnabled="true"/>
  </Slaves>
</MultiProjectors>
```

On a slave projector:

```
<MultiProjectors>
  <Slave IsEnabled="true" ExtendedScreen="RIGHT" PlayedFrames="BOTH"
    IsLtcOutputEnabled="true"/>
</MultiProjectors>
```



Note: MultiProjectors settings should only be updated on the master projector. The master will automatically configure the slave settings.

4.1.15.1 Master

This defines the master projector settings. It should only be found in the master projector settings and not in the slave projectors settings

4.1.15.1.1 IsEnabled

This enables or disables the multi-projectors functionality on the master.
"true" means enabled.
"false" means disabled and is the default value.

4.1.15.1.2 ExtendedScreen

This defines what content screen the projector will play. The value is open but shall match one of the screens defined for the Barco Escape content.
Default value = "MAIN".

4.1.15.1.3 PlayedFrames

This defines what content the projector will play.

SMS: Settings structure

"LEFT" means the left-eye frames of a 3D content.

"RIGHT" means the right-eye frames of a 3D content.

"BOTH" means both frames are played.

4.1.15.2 Slave

This defines one slave projector settings. It should only be found in the master projector settings and not in the slave projectors settings

4.1.15.2.1.1 IpAddress

This is the IP address of the slave projector.

4.1.15.2.1.2 IsLtcOutputEnabled

This enables the LTC output signal on a slave projector. The LTC output is disabled by default because the connection is used for a proprietary sync signal. Only the last slave of the sync daisy chain can enable this output.

Default value = "false".