NEXTGEN TV RUN3TV Implementation Guidelines: Q-Bar Application

Version: 1.0 (Beta Release)

Date: June 1st, 2023

Doc: PNC-IG-0221

Revision history

Version	Date	Update
0.1 (Draft)	31 October 2022	Initial draft
0.2	MArch 10 2023	Several sections and related images updated. XML snippets removed
1.0 (Beta Release	June 1st, 2023	Release candiate

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Contents

1. Glossary

Glossary of unfamiliar words and acronyms.

Term	Definition

2. References

ID	Publisher	Document
1	ATSC	ATSC 3.0 Interactive Content, A344/1
2	DASH	DASH-IF IOP-5, v5.0.0 (2021-11)

3. Introduction

This document describes how a broadcaster can configure and customize the Q-Bar application. The document provides the details of styling the application, and providing metadata feeds in driving the application. Detailed description of how various content types are correctly declared in the feed is contained in a separate RSS Feed Specification document.

This document should be read in conjunction with the RSS feed specification document in order to understand full and correct implementation.

4.   Feature Support

The following table details the functionality supported in the Q-Bar application.

Feature	Supported
Custom Broadcaster Styling	Yes
BAAppear Key Handling	Yes
Current on air program information	Yes
Current on air program audio track selection	Yes
Emergency Alerts	Yes
On Screen Notifications	Yes
mRSS Feed Support	Yes
TV Guide of current channel via OTA Data	Yes
TV Guide of current channel via IP Data	Roadmap
VOD Playback	Yes, DASH, HLS, MP4
Fast Channels Streaming (SSAI w/o client reporting)	Yes, DASH, HLS
FAST Channels Streaming (SSAI with client reporting)	Roadmap - PoC under development
VastTag	Yes, preroll support only
Display Advertising	Yes
Display a full screen image - used for weather reporting.	Yes
Dynamic Ad Replacement	Roadmap - PoC under development

5. Application

This document describes how a broadcaster can configure and customize the Q-Bar application. The document provides the details of styling the application, and providing metadata feeds in driving the application.

5.1. Call To Action Trigger

When the application starts, the receiver provides information on the dedicated remote control key to use when accessing the interactive runtime application. The Q-BAR application incorporates this feature and displays the appropriate Call-To-Action to enter the application.

The following table lists the supported features of the call-to-action.

FeatureID	Description
cta-001	Display the receivers BAAppear Label and image if provided otherwise show the default RUN3TV BAAppear
cta-002	The label can be customized via the parameter ctaLabel and the BAAppear word shall be replaced by the application. E.g. `"ctaLabel": "PRESS <baAppearLabel>"`
cta-003	Display the broadcasters station's call sign, logical channel number and logo via the application configurations via the header attribute. `"header": {"id": "32.1", "name": "R3TV", "logo": "/london/run3tv/img/logo.png"}`
cta-004	Display the current program title being viewed; the associated description; the start, end and duration of the program. The application will not display the information when no schedule data is available from the receiver.
cta-005	Display the current viewing position of the live stream, using the schedule data otherwise display the viewing position in the center of the timeline.
cta-006	Display the audio button for track selection if multiple tracks are supported behind the service otherwise it's gray out and not selectable
cta -007	If the service is a Live_Radio or Live_App service, display the item/media:group/media:thumbnail if present otherwise display the Run3TV default service type images behind the CTA.

5.1.1.   Legacy Receiver Support - Default RUN3TV BAAppear Label

Application shall display the default Run3TV OK button image and the words "Press OK for more" as shown below.
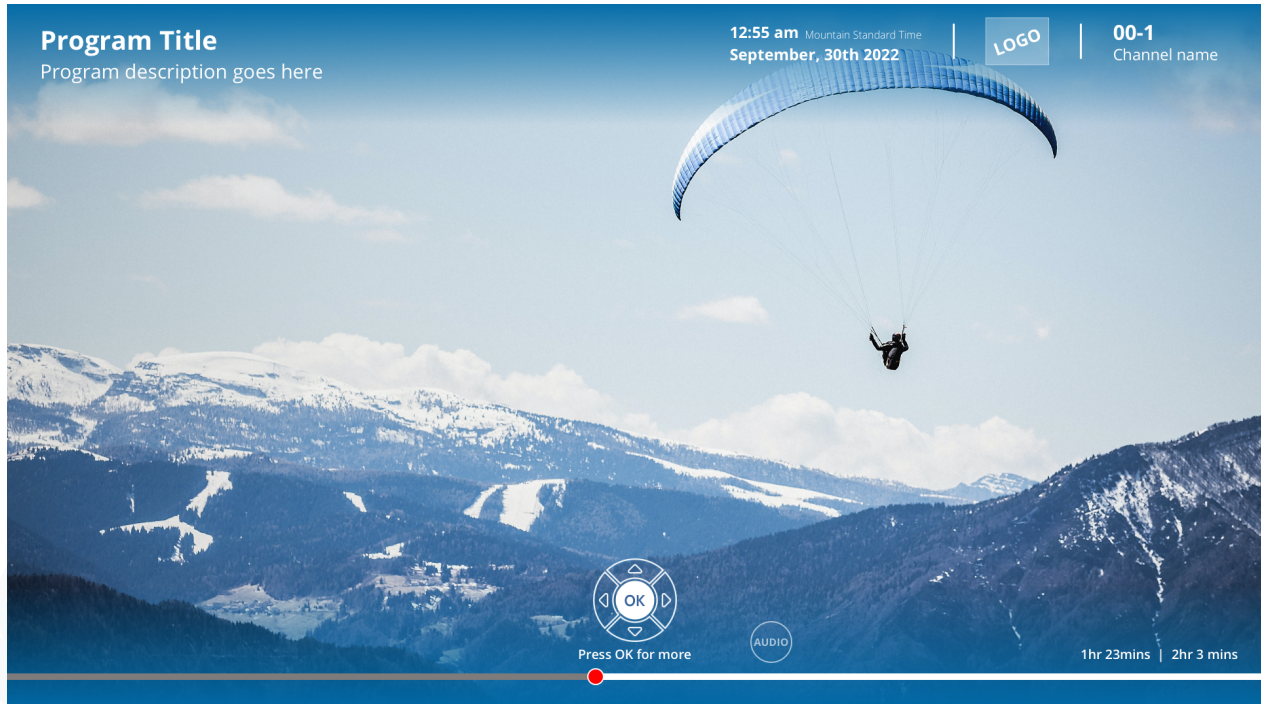
5.1.2.   Receiver supports BAAppear Label & Image

Application shall display the receivers BAAppear Image along with its associated BAAppear label. The example below shows BAAppear image + label provided by Sony receiver.
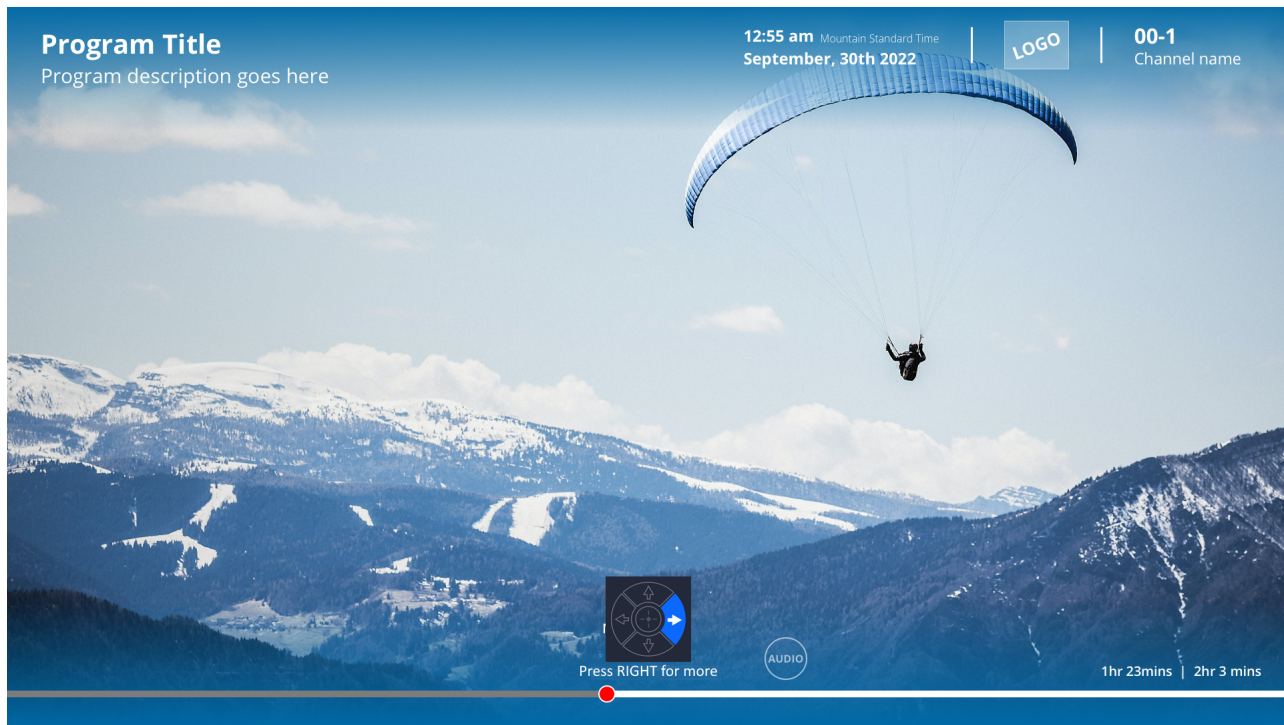
5.1.3.   Receiver only supports BAAppear Label

If the receiver does not support BAAppear image, then the application shall display the BAAppear text (label only) as the receiver does not support an image.
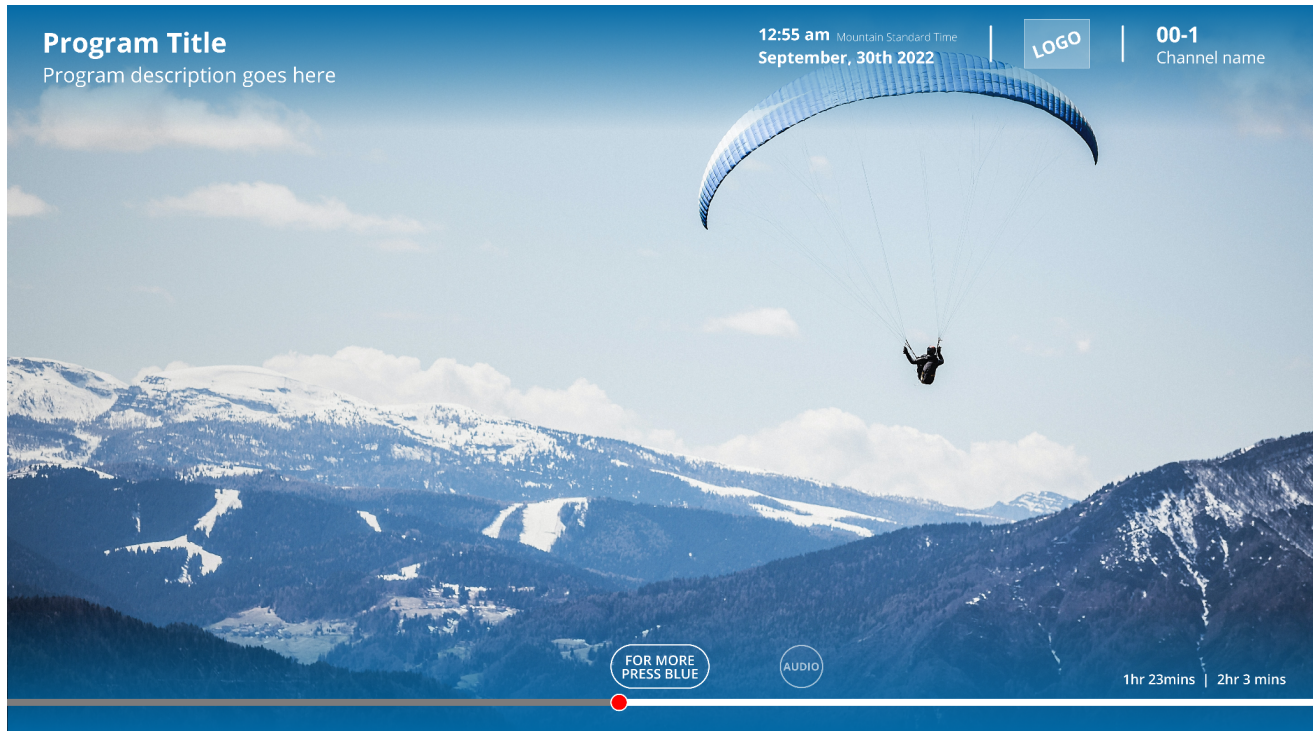
5.1.4.   Receiver does not support or is missing the scheduled program

Application shall display the Run3TV OK button image and the words "Press OK for more" with the live point in the center of the screen. <u>No Program title or description is shown</u>.

5.2. On Screen Notification

The on screen notification is displayed to the viewer when the application is loaded but no call to action is displayed. This provides a means for the viewer to enter into the application and link to the notification message.

<ROADMAP ITEM>

5.3. Different Content Items

The following section describes the different items in the content rail that can be displayed by the application required.

Here is a summary of the different supported content types.

- Live TV Service
- Live Radio Service
- Current Live TV Program
- Later Live TV Program
- Current Live Radio Program
- Later Live Radio Program
- Live Streaming Service
- Live Radio Streaming Service
- Video on Demand
- Audio on Demand
- Imagery Display
- Web Display
- Application Link
- Animated Display
- Advertising
- Promotional
- Alerts

5.3.1. Live TV Service Switch Content Item

A content item that will allow the user to switch to a different Live TV Channel (broadcast only) that is available on the receiver.

FeatureID	Description
live_tv_001	Use the title from the item xml to display a title

live_tv_002	Detect that the item is **LIVE_TV** using the following rules;
	
	`item/media:content/@medium = "video"`
	`AND`
	`item/media:content/@type = "application/dash+xml"`
	`AND`
	`item/media:content/@url = "<globalserviceid_value>"`
	`AND`
	`item/media:content/@expression = "ota"`
	`AND`
	`item/pubDate = null`
	`OR`
	`item/media:content/@duration = null`

live_tv_003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV **LIVE_TV** image.
live_tv_004	Display the second line with the following with the words in red: <live_tv_icon> | LIVE TV

	Note that the text color changes to RED upon selection
live_tv_005	A selection from the user shall inform the receiver to switch to the corresponding service.
live_tv_006	The live tv shall be presented in the rescaled video window.
live_tv_007	If the current service is the same as the requested service, then no service change is carried out, however if the live TV is not actively playing then the application shall start playing the live TV in the rescaled video window.
live_tv-008	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
live_tv-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
live_tv-010	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.2.   Live Radio Service Switch Content Item

A content item that will allow the user to switch to a different Live Radio Channel (Broadcast only) that is available on the receiver.
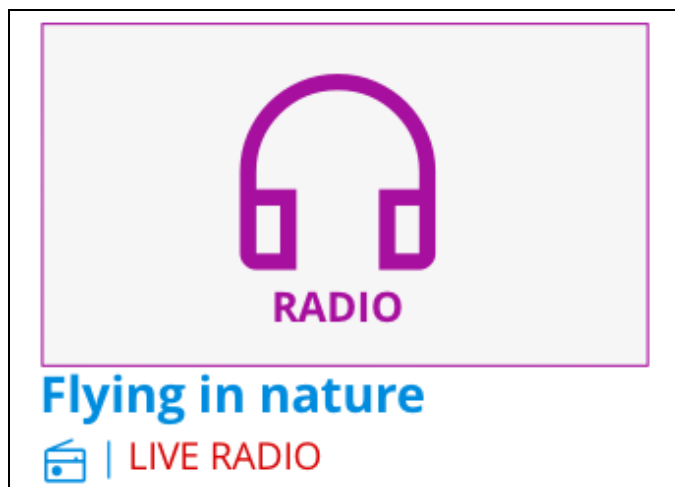

FeatureID	Description
live_radio-001	Use the title from the item xml to display a title

live_radio-002	Detect that the item is **LIVE_RADIO** using the following rules;
	
	`item/media:content/@medium = "audio"`
	`AND`
	`item/media:content/@type = "application/dash+xml"`
	`AND`
	`item/media:content/@url = "<globalserviceid_value>"`
	`AND`
	`item/media:content/@expression = "ota"`
	`AND`
	`item/pubDate = null`
	`OR`
	`item/media:content/@duration = null`

live_radio-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_Radio image.
live_radio-004	Display the second line with the following with the words in red. <live_radio_icon> | LIVE RADIO

	Note that the text color changes to RED upon selection
live_radio-005	A selection from the user shall inform the receiver to switch to the corresponding service.

live_radio-006	The live radio image shall be presented in the rescaled view of the window using the <media:content> contained in the <media:group> otherwise the default Run3TV shall be used.
	
	`item/media:content/@medium = "image"`
	AND
	`item/media:content/@type = "<supported_image>"`
	AND
	`item/media:content/@url = "<url>"`

live_radio-007	If the current service is the same as the requested service, then no service change is carried out, however if the live radio is not actively playing then the application shall start playing the live radio.
live_radio-008	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
live_radio-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
live_radio-010	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

Do audio using video tag for now

5.3.3. Current Live TV Program Content Item

A content item and/or a whole content rail display's Live TV content in the TV schedule for a specific broadcast service. The content time will show the program information and provide image support.

FeatureID	Description
livetv_now-001	Use the title from the item xml to display a title

livetv_now-002	Detect that the item is **LIVE_TV_ESG_NOW** using the following rules;
	
	```item/media:content/@medium = "video"```
	```AND```
	```item/media:content/@type = "application/dash+xml"```
	```AND```
	```item/media:content/@expression = "ota"```
	```AND```
	```item/media:content/@url = "<globalserviceid_value>"```
	```AND```
	```Time now is between (item/pubDate AND item/pubDate +```
	```item/media:content/@duration)```
	```AND```
	```item/media:content/@duration > 0```

livetv_now-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_TV_ESG image.

livetv_now-004	Display the second line with the following; Where the <starttime> is the relative to the timezone and the time from the item/pubDate using 12 hour clock appending am | pm, e.g. 12.30pm <live_tv_icon> | ON NOW | <starttime> Note that the text color changes to RED upon selection
livetv_now-005	A selection from the user shall inform the receiver to switch to the corresponding service.
livetv_now-006	The current live program shall be presented in the rescaled video window.
livetv_now-007	If the current service is the same as the requested service, then no service change is carried out, however if the live tv is not actively playing then the application shall start playing the live tv.
livetv_now-008	The top section of the Q-bar displays the following. <Title of the item>
livetv_now-009	Below the <Title>, the following information is displayed; <startTime> - <EndTime> | <Description> Times shall be displayed according to the Formatting rules described later in this document. See Formatting Rules section
livetv_now-010	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
livetv_now-011	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.4.   Current Live Radio Program Content Item

A content item and/or a whole content rail display's Live TV content in the TV schedule for a specific broadcast service. The content time will show the program information and provide image support.
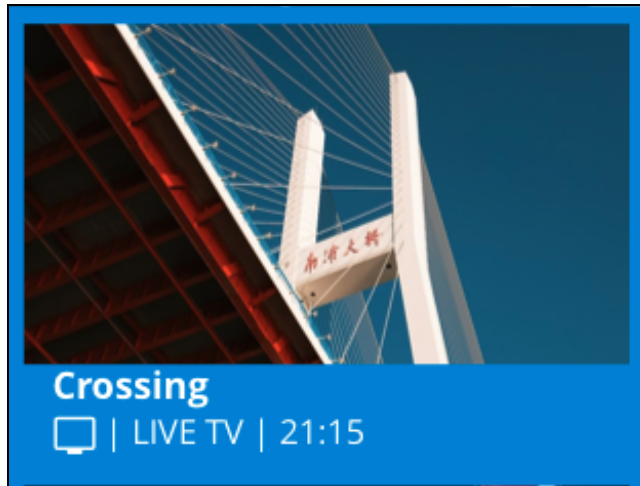
FeatureID	Description
liveradio_now-001	Use the title from the item xml to display a title

liveradio_now-002	Detect that the item is **LIVE_RADIO_ESG_NOW** using the following rules;
	
	`item/media:content/@medium = "audio"`
	`AND`
	`item/media:content/@type = "application/dash+xml"`
	`AND`
	`item/media:content/@expression = "ota"`
	`AND`
	`item/media:content/@url = "<globalserviceid_value>"`
	`AND`
	`Time now is between (item/pubDate AND item/pubDate +`
	`item/media:content/@duration)`
	`AND`
	`item/media:content/@duration > 0`

liveradio_now-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_TV_ESG image.
liveradio_now-004	Display the second line with the following; Where the <starttime> is the relative to the timezone and the time from the item/pubDate using 12 hour clock appending am | pm, e.g. 12.30pm <live_tv_icon> | ON NOW | <starttime> Note that the text color changes to RED upon selection

liveradio_now-005	A selection from the user shall inform the receiver to switch to the corresponding service.
liveradio_now-006	If the current service is the same as the requested service, then no service change is carried out, however if the live tv is not actively playing then the application shall start playing the live tv.
liveradio_now-007	The top section of the Q-bar displays the following. <Title of the item>
liveradio_now-008	Below the <Title>, the following information is displayed; <startTime> - <EndTime> | <Description> Times shall be displayed according to the Formatting rules described later in this document. See Formatting Rules section
liveradio_now-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
liveradio_now-010	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.5.   Later Live TV Program Content Item

A content item and/or a whole content rail display's Live TV content in the TV schedule for a specific broadcast service. The content time will show the program information and provide image support.
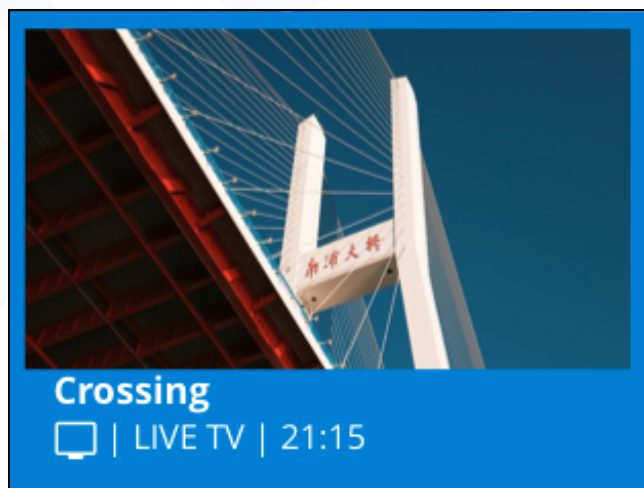
FeatureID	Description
livetv_later-001	Use the title from the item xml to display a title of the content

livetv_later-002	Detect that the item is **LIVE_TV_ESG_LATER** using the following rules;
	
	 `item/media:content/@medium = "video"`
	 `AND`
	 `item/media:content/@type = "application/dash+xml"`
	 `AND`
	 `item/media:content/@expression = "ota"`
	 `AND`
	 `item/media:content/@url = "<globalserviceid_value>"`
	 `AND`
	 `Time now is < item/pubDate`
	 `AND`
	 `item/media:content/@duration > 0`

livetv_later-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_TV_ESG_later image.
livetv_later-004	Display the second line with the following; Where the <starttime> is the relative to the timezone and the time from the item/pubDate using 12 hour clock appending am | pm, e.g. 12.30pm <live_tv_icon> | ON LATER | <starttime>
livetv_later-005	A selection from the user shall display the item/media:group/media:thumbnail in the resized window and display the title and description of the program.

livetv_later-006	Top title should show the following using 12 hour clock appending am | pm, e.g. 12.30pm; <Title of the item> <Description> [only past the current day ddd] <starttime> - [[only past the current day ddd], <endtime> Times shall be displayed according to the Formatting rules described later in this document. See Formatting Rules section

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.6. Later Live Radio Program Content Item

A content item and/or a whole content rail display's Live TV content in the TV schedule for a specific broadcast service. The content time will show the program information and provide image support.
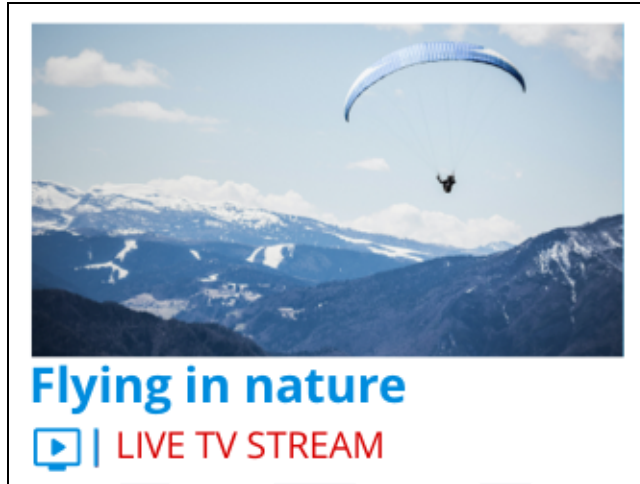

FeatureID	Description
liveradio_later-001	Use the title from the item xml to display a title of the content
liveradio_later-002	Detect that the item is **LIVE_RADIO_ESG_LATER** using the following rules;

<table>
<tr>
<td></td>
<td>

```
item/media:content/@medium = "audio"
AND
item/media:content/@type = "application/dash+xml"
AND
item/media:content/@expression = "ota"
AND
item/media:content/@url = "<globalserviceid_value>"
AND
Time now is < item/pubDate
AND
item/media:content/@duration > 0
```

</td>
</tr>
<tr>
<td>liveradio_later-003</td>
<td>Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_TV_ESG_later image.</td>
</tr>
<tr>
<td>liveradio_later-004</td>
<td>Display the second line with the following;
Where the <starttime> is the relative to the timezone and the time from the item/pubDate using 12 hour clock appending am | pm, e.g. 12.30pm

<live_tv_icon> | ON LATER | <starttime></td>
</tr>
<tr>
<td>liveradio_later-005</td>
<td>A selection from the user shall display the item/media:group/media:thumbnail in the resized window and display the title and description of the program.</td>
</tr>
<tr>
<td>liveradio_later-006</td>
<td>Top title should show the following using 12 hour clock appending am | pm, e.g. 12.30pm;

<Title of the item>
<Description>
[only past the current day ddd] <starttime> - [[only past the current day ddd], <endtime>

Times shall be displayed according to the Formatting rules described later in this document. See Formatting Rules section</td>
</tr>
</table>

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.7. Live TV Streaming Services Content Item

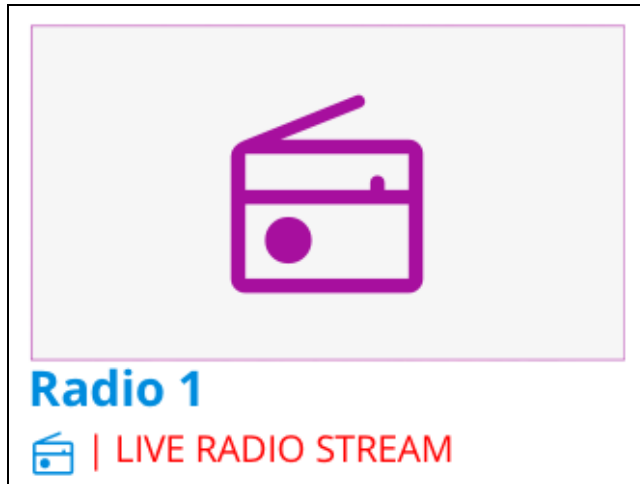A content item can present a live streaming channel (IP stream).

FeatureID	Description
livetv_stream-001	Use the title from the item xml to display a title

livetv_stream-002	Detect that the item is **LIVE_TV_STREAM** using the following rules;
	
	`item/media:content/@medium = "video"`
	`AND`
	`item/media:content/@type = "<hls_mime> OR <dash_mime>"`
	`AND`
	`item/media:content/@url = "<url>"`
	`AND`
	`item/media:content/@expression = "nonstop"`
	`OR`
	`item/media:content/@duration = 0`

livetv_stream-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_Stream image.
livetv_stream-004	Display the second line with the following with the words in red. ; <live_TV_Stream_icon> | IP TV STREAM Note that the text color changes to RED upon selection
livetv_stream-005	A selection from the user shall inform the receiver to stop playing the live tv,

	switch to the streamed channel.
livetv_stream-006	The live streaming service shall be presented in the rescaled view of the window.
livetv_stream-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
livetv_stream-008	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
livetv_stream-009	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.8. Live Radio Streaming Services Content Item

A content item can present a live radio streaming channel (IP Stream).

FeatureID	Description
liveradio_stream-001	Use the title from the item xml to display a title

liveradio_stream-002	Detect that the item is **LIVE_RADIO_STREAM** using the following rules;
	
	 `item/media:content/@medium = "audio"`
	 `AND`
	 `item/media:content/@type = "<hls_mime> OR <dash_mime>"`
	 `AND`
	 `item/media:content/@url = "<url>"`
	 `AND`
	 `item/media:content/@expression = "nonstop"`
	 `OR`
	 `item/media:content/@duration = 0`

liveradio_stream-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Live_Radio_Stream image.
liveradio_stream-004	Display the second line with the following with the words in red. ; <live_Radio_Stream_icon> | IP RADIO STREAM Note that the text color changes to RED upon selection
liveradio_stream-005	A selection from the user shall inform the receiver to stop playing the live tv, switch to the streamed radio channel.

liveradio_stream-006	The live radio image shall be presented in the rescaled view of the window using the <media:thumbnail> contained in the <media:group> otherwise the default Run3TV shall be used.
liveradio_stream-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
liveradio_stream-008	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
liveradio_stream-009	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.9. Video on Demand Content item

A content item can present a video on demand content item.

FeatureID	Description
vod-001	Use the title from the item xml to display a title
vod-002	Detect that the item is **VOD** using the following rules; ```item/media:content/@medium = "video" AND item/media:content/@type = "<hls_mime> OR <dash_mime> OR <mp4_mime>" AND item/media:content/@url = "<url>" AND item/media:content/@expression = "full" OR item/media:content/@duration > 0```
vod-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV VOD image.
vod-004	Display the second line with the following; <play_icon> | ON DEMAND | <duration>
vod-005	A selection from the user shall inform the receiver to stop playing the live tv, switch to the on demand (video or audio) content.

vod-006	The vod content shall be presented in the rescaled view of the window. Add audio Add step to go to full screen
vod-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item>
vod-008	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
vod-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
vod-010	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.10. Audio on Demand Content item

A content item can present audio on demand content items, e.g. Podcasts, music content etc.

FeatureID	Description
aod-001	Use the title from the item xml to display a title
aod-002	Detect that the item is **AUDIO_ONDEMAND** using the following rules; ``` item/media:content/@medium = "audio" AND item/media:content/@type = "<hls_mime> OR <dash_mime> OR <mp4_mime> OR <mpeg_mime>" AND item/media:content/@url = "<url>" AND item/media:content/@expression = "full" OR item/media:content/@duration > 0 ```
aod-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV VOD image.
aod-004	Display the second line with the following; <headphones_icon> | ON DEMAND | <duration>
aod-005	A selection from the user shall inform the receiver to stop playing the live tv, switch to the VOD content.

aod-006	The audio on demand content shall be presented in the rescaled view of the window.
aod-007	The image shall be presented in the rescaled view of the window using the <media:thumbnail> contained in the <media:group> otherwise the default Run3TV shall be used.
aod-008	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
aod-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
aod-010	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.11. Imagery Content item

A content item can be presented as an image to display any specific content category. An example of this is creating a weather feed with multiple stills to show the weather ahead and using GIFs to create a radar like loop.
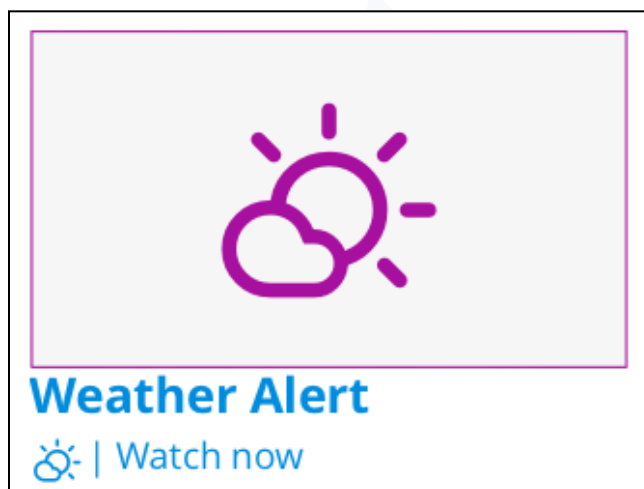
FeatureID	Description
img-001	Use the title from the item xml to display a title

img-002	Detect that the item is **IMAGE** using the following rules;
	
	`item/media:content/@medium = "image"`
	`AND`
	`item/media:content/@url = "<url>"`
	`AND`
	`item/media:content/@type = "<supported_image>"`
	
	See RSS specification document for supported image types

img-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV GALLERY image.
img-004	Display the second line with the following; <image_icon> | IMAGERY

img-005	A selection from the user shall inform the receiver to stop playing the live tv, switch display the image content.
img-006	The imagery content shall be presented in the rescaled view of the window.
img-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item>
img-008	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
img-009	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.12.   Web Display content items can be displayed in full screen with custom layout and design. The user is not able to interact with the web page at this time.

FeatureID	Description
web-001	Use the title from the item xml to display a title

web-002	Detect that the item is **WEB_DISPLAY** using the following rules;
	
	 ```item/media:content/@medium = "document"```
	 ```AND```
	 ```item/media:content/@url = "<url>"```
	 ```AND```
	 ```item/media:content/@type = "text/html"```

web-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Web Display image.
web-004	Display the second line with the following; <webpage_icon> | DISPLAY
web-005	A selection from the user shall inform the receiver to stop playing the live tv, switch display the web page content.
web-006	The web display content shall be presented in the rescaled view of the

	window.
web-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
web-008	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
web-009	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.13.   Application linking content item can be a link to another Run3TV Application, 3rd Party Run3TV Framework application or a smart TV application.
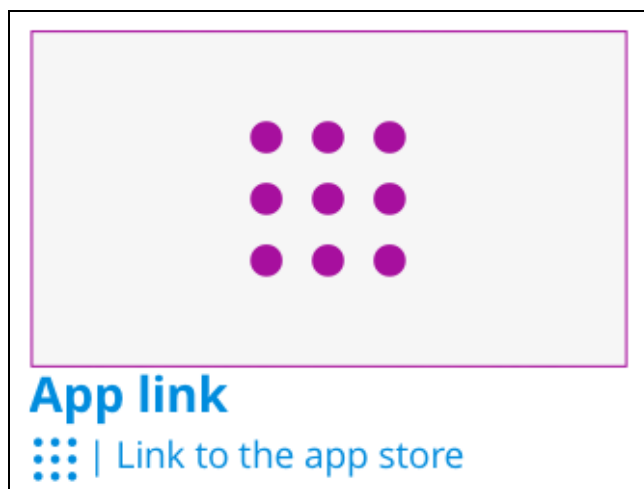
FeatureID	Description
app-001	Use the title from the item xml to display a title

app-002	Detect that the item is **LOCAL_RUN3TV_APPLICATION** using the following rules;
	
	`item/media:content/@medium = "document"`
	`AND`
	`item/media:content/@type = "run3tv/local"`
	`AND`
	`item/media:content/@url = "<url>"`

app-003	Detect that the item is **REMOTE_A344_APPLICATION** using the following rules;
	
	`item/media:content/@medium = "document"`
	`AND`
	`item/media:content/@type = "run3tv/remote"`
	`AND`
	`item/media:content/@url = "<url>"`

app-004	Detect that the item is **NATIVE_APPLICATION_<manufacturer>** using the following rules; `item/media:content/@medium = "executable"`

	AND
	`item/media:content/@type = "run3tv/<manufacturer>"`
	AND
	`item/media:content/@url = "<url>"`

app-005	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV App Display image.
app-006	Display the second line with the following; <app_icon> | LAUNCH APP
app-007	A selection from the user shall inform the receiver to stop playing the live tv, launch the application.
app-008	The framework shall process in the order signaled in the feed.
app-009	A LOCAL_RUN3TV_APPLICATION shall be launched and the current application shall be unloaded.
app-010	A REMOTE_A344_APPLICATION shall cause the framework to launch the application using the A344 APIs.
app-011	Any matching NATIVE_APPLICATIONS shall use the bespoke method defined by that receiver manufacturer.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.14.   Animated content item can be shown using Lottie content.

App link

::: | Link to the app store
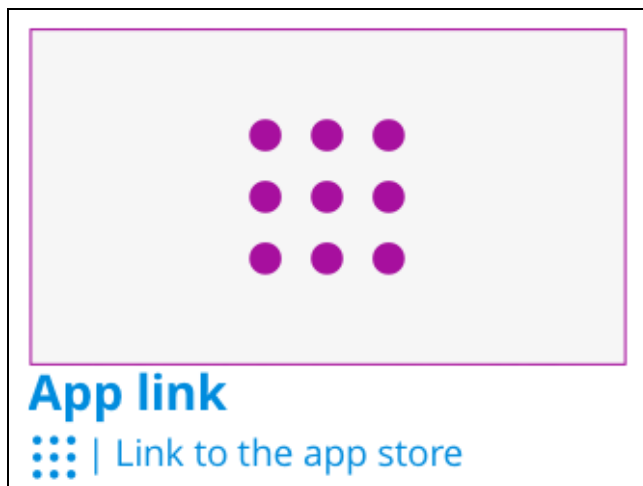
FeatureID	Description
ani-001	Use the title from the item xml to display a title

ani-002	Detect that the item is **LOTTIE_APPLICATION** using the following rules;
	
	`item/media:content/@medium = "document"`
	`AND`
	`item/media:content/@type = "application/json+lottie"`
	`AND`
	`item/media:content/@url = "<url>"`

ani-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV Animated Display image.
ani-004	Display the second line with the following; <Animation_icon> | ANIMATION
ani-005	A selection from the user shall inform the receiver to stop playing the live tv, launch the animation.
ani-006	The web display content shall be presented in the rescaled view of the window.
ani-007	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
ani-008	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.

ani-009	User is able to return from Full screen mode to a scaled video window mode.

To see an example of how this is implemented in xml, please refer to the RSS Feed Specification document.

5.3.15.   Advertising, Promotional and Sponsorship Content item

A content item can be presented as a display advertising item, or a promotional content item or a sponsorship content item.

FeatureID	Description
ads-001	Use the title from the item xml to display a title

ads-002	Detect that the item is **ADVERTISEMENT** or **PROMOTION** or a **SPONSORSHIP** based if a <media:category> exists with the RUn3TV schema.
	
	`item/media:category != null`
	`AND`
	`item/media:category/@scheme =`
	`"https://run3tv.org/mrss/category_schema"`

ads-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV default display image. .
ads-004	Display the second line with the following; <Ad|PROMO|SPONSOR_icon> | <media:category>/@label [| <based on the type of content]
ads-005	Top right hand badge is inserted depending on the type of category.
ads-006	A selection from the user shall inform the receiver to stop playing the live tv, launch the content item. .
ads-007	The web display content shall be presented in the rescaled view of the window.
ads-008	When highlighted the following is shown in the top section of the Q-bar. <Title of the item> <synopsis>
ads-009	While watching in a scaled video window, a further selection from the user shall invoke full screen mode.
ads-010	User is able to return from Full screen mode to a scaled video window mode.

Advertisement
Ⓢ | ADVERTISEMENT | 4 min

```
<media:group>
 <media:content medium="video" type="video/mp4" url="https://server.com/ad.mp4" />
 <media:category scheme="https://run3tv.org/mrss/category_schema" label="Advertisement" />
</media:group>
```


Promo 1
📢 | PROMOTION | 4mins

```
<media:group>
 <media:content medium="video" type="video/mp4" url="https://server.com/ad.mp4" />
 <media:category scheme="https://run3tv.org/mrss/category_schema" label="Promotion" />
</media:group>
```

```
<media:group>
 <media:content medium="video" type="video/mp4" url="https://server.com/ad.mp4 />
 <media:category scheme="https://run3tv.org/mrss/category_schema" label="Sponsorship" />
</media:group>
```
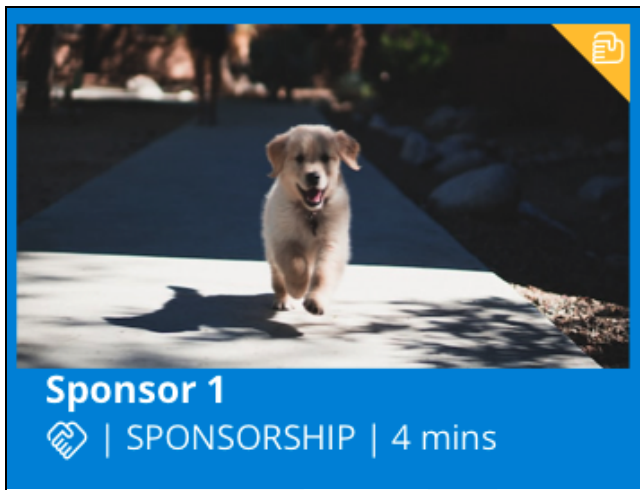
5.3.16. Alert Content item

The alert content uses values based on A331 and repeated below. The icons used are based on the type of alert and the priority listed.

ALERT CATEGORY	Symbol	ALERT PRIORITIES				
		MAXIMUM 4	HIGH 3	MODERATE 2	LOW 1	MINOR 0
ADVISORY *Urgent Advisory (e.g. from a newsroom) that does not fit into the categories below.*	⚠	⚠	⚠	⚠	⚠	⚠
HEALTH *Health related (including environmental), including infectious disease information (e.g COVID instructions), pollen and other environmental health hazards.*	🛡	🛡	🛡	🛡	🛡	🛡
WEATHER *Urgent meteorological information and updates.*	⛅	⛅	⛅	⛅	⛅	⛅
EMERGENCY *General emergency and public safety information, including fire, geological and other situations.*	🚨	🚨	🚨	🚨	🚨	🚨
SCHOOL *Urgent information related to schools/educational institutions, including school closures, reopenings, in-school emergencies, and other important information.*	🎓	🎓	🎓	🎓	🎓	🎓
COMMUNITY *Urgent information of local relevance, including utility/infrastructure issues, sanitation, government closures, etc.*	📍	📍	📍	📍	📍	📍
TRANSIT *Urgent Transit/Transport/Traffic information, such as road closures, major traffic incidents,*	🚍	🚍	🚍	🚍	🚍	🚍

public transit delays, etc.						
OTHER *Messages not categorizable above, such as test or "heartbeat" messages.*	⊘	⊘	⊘	⊘	⊘	⊘

FeatureID	Description
alerts-001	Use the title from the item xml to display a title

alerts-002	`item/media:category != null`
	`AND`
	`item/media:category/@scheme =`
	`"https://run3tv.org/mrss/category_schema"`

alerts-003	Display the thumbnail from the <media:thumbnail> if provided otherwise show the default Run3TV default alert display image. .
alerts-004	Display the second line with the following; <Alert_Category_Icon> | <media:category/@label>
alerts-005	Top right hand badge is inserted depending on the type of category.
alerts-006	A selection from the user shall inform the receiver to stop playing the live tv, launch the content item. .
alerts-007	The web display content shall be presented in the rescaled view of the window.
alerts-008	

```
<media:group>
  <media:content medium="video" type="video/mp4" url="https://server.com/ad.mp4 />
```

```
 <media:category scheme="https://run3tv.org/mrss/category_schema"
label="Alert">WEATHER/4</media:content>
</media:group>
```
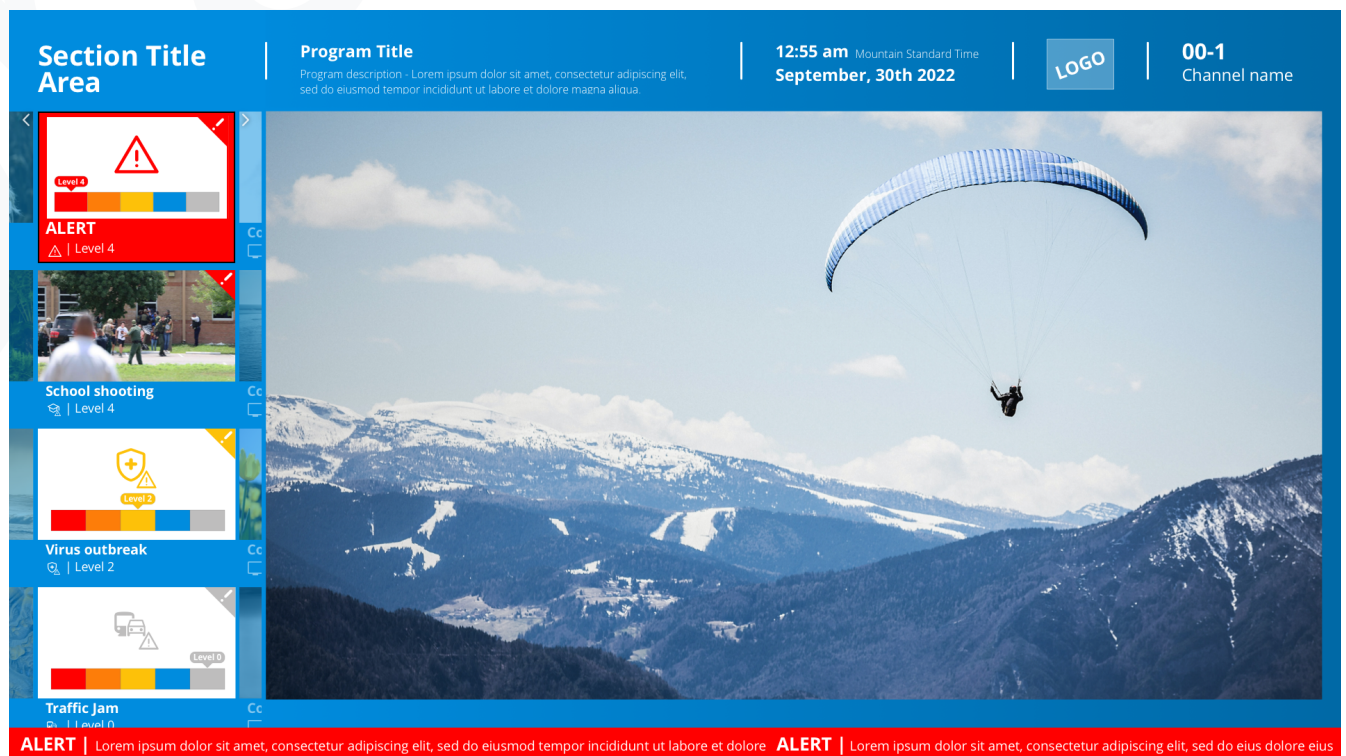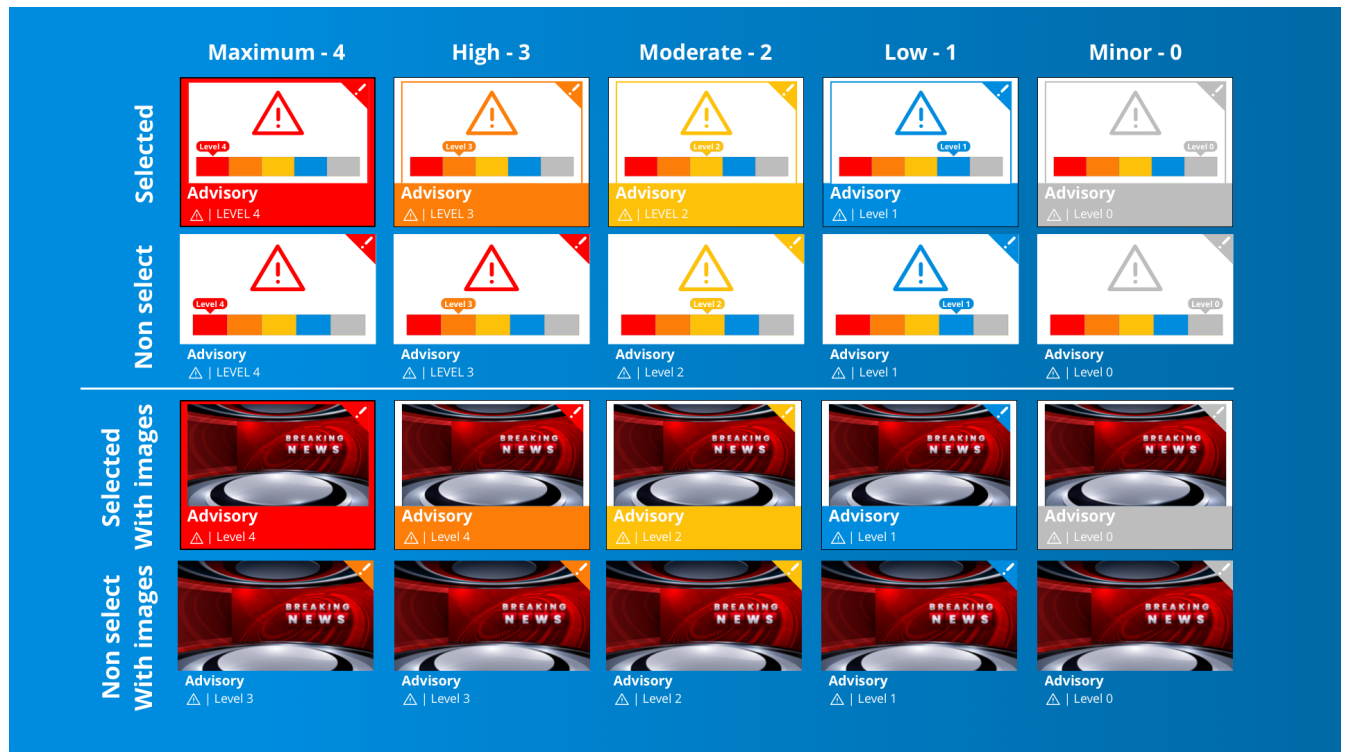
5.4. Formatting Rules

5.4.1.   Displaying DATE

The current date shown in the top display section of Q-bar shall be presented as follows:

Assuming today is Monday the 13th March 2023

Mon, March 13, 2023

5.4.2.   Displaying Time

The time shown in the Q bar application depends on the type of content being displayed and where it is being displayed.

5.4.2.1.   Live TV, Live Radio (Broadcast)

In vertical rail; only the relevant badge and label is displayed. Start time, end time or duration is NOT displayed.

Format: <icon><label>

In the top section of Q-bar, Only the start time and end time are displayed along with relevant day as follows:

Format: <starttime> - <endtime>

If today is Monday for example, then the following rules apply:

11:45am - 12:15pm
4:20pm - 5:15pm
11.30pm - Tue, 1.30am
Tue, 1.30am - 1.30pm
Tue, 11.30pm - Wed, 1.30am

Note: Seconds are not shown in the top section of Q-bar

5.4.2.2.   VOD Content - Video and / or Audio

In vertical rail; the relevant badge, label and duration is displayed.

In the top section of Q-bar; the relevant badge, label and duration is displayed.

Format: <icon><label> | <duration>

The rules for duration in both cases (vertical rail and top section) are as follows:

If total duration is under 10 minutes, then use the format:

m:ss

Examples:

0:30
1:30
9:48 (meaning the VOD content is 9 minutes and 48 seconds long)

If total duration is more than 10 mins but less than 1 hour, then use the format:

mm:ss

Examples:

10:03
45:23
59:55 (meaning the VOD content is 59 minutes and 55 seconds long)

If total duration is more than 1 hour, then use the format:

h:mm:ss

1:00:30

1:23:45 (meaning the VOD content is 1 hour, 23 minutes and 45 seconds long)

The same rules apply when displaying the duration of a VOD content on the player bar (right hand side corner)

5.4.2.3.   ESG Data

In vertical rail; only the relevant badge and label is displayed. Start time, end time or duration is NOT displayed.

Format: <icon><label>

In the top section of Q-bar, Only the start time and end time are displayed along with relevant day as follows:

If today is Monday for example, then the following rules apply:

11:45am - 12:15pm

4:20pm - 5:15pm
11.30pm - Tue, 1.30am
Tue, 1.30am - 1.30pm
Tue, 11.30pm - Wed, 1.30am

Note: Seconds are not shown in the top section of Q-bar

5.4.2.4.   Live Stream delivered via IP Channel

<u>In vertical rail</u>; only the relevant badge and label is displayed. Start time, end time or duration is NOT displayed.

Format: <icon><label>

<u>In the top section of Q-bar</u>, Only the start time is displayed along with relevant day as follows:

Format: <Ddd - starttime>

If today is Monday for example, then the following rules apply:

Mon - 11:45am
Sun - 03:30 am

Note: Seconds are not shown in the top section of Q-bar

5.4.2.5.   Imagery (Static Images or animated GIFs)

<u>In vertical rail</u>; only the relevant badge and label is displayed.

Format: <icon><label>

<u>In the top section of Q-bar</u>, No start time, end time or duration are displayed

Format: Nothing to display here

5.4.2.6.   HTML Application (Internal and / or external)

<u>In vertical rail</u>; only the relevant badge and label is displayed.

Format: <icon><label>

<u>In the top section of Q-bar</u>, No start time, end time or duration are displayed

Format: Nothing to display here or should we display app name in the second line? I think we should

5.4.2.7. Animated Advertising and Promotional Content

<u>In vertical rail</u>; only the relevant badge and label is displayed.

Format: <icon><label>

<u>In the top section of Q-bar</u>, No start time, end time or duration are displayed

Format: Nothing to display here or should we display app name in the second line? I think we should

5.5. Information Crawler

An information crawler can be displayed within the application by defining an entry in the application configuration file. Information like News, Weather, Sports and financial data can be displayed. The crawler is not clickable and is only presentational.

FeatureID	Description
info-001	Broadcaster can define a path for the information crawler in the application configuration under the attribute `ticker`
info-002	The header of the ticker is taken from the feeds /channel/title element otherwise it is overridden by the parameter ticker.title
info-003	The /channel/item[]/title shall be used to display the ticker text.
info-004	The speed of the ticker can be configured within the application configuration file under the attribute ticker.speed in seconds.
info-005	Inline HTML formatting tags can be used in the title to provide additional custom formatting.
info-006	Once all the items have been displayed, on the next loop a refreshed feed is requested at the end of the /channel/ttl or at the end of the polling interval as defined in the application configuration.

info-007	When the application exits to full screen TV, polling is reset. The next request to display the information ticker a new feed request is made to get the latest information.

In the example below, it is shown as a thin BLUE strip at the bottom of the screen.
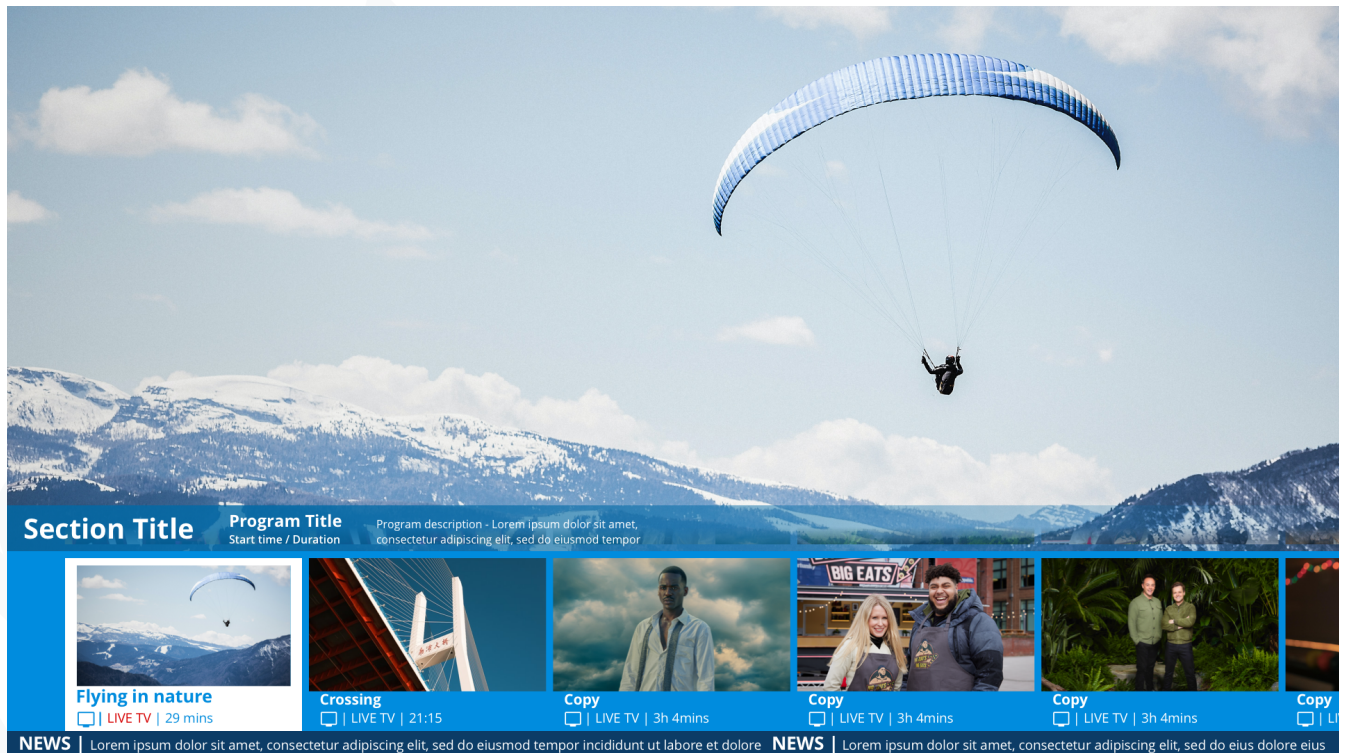
5.6. Alert Crawler

An alert crawler is displayed when an Alert is received over the air. The crawler is not clickable and is only presentational.

FeatureID	Description
alert-001	When an AEAT is sent, then the alert crawler is displayed.
alert-002	
alert-003	
alert-004	

alert-005	
alert-006	
alert-007	
alert-008	
alert-009	

In the example below, it is shown as a thin RED strip at the bottom of the screen.
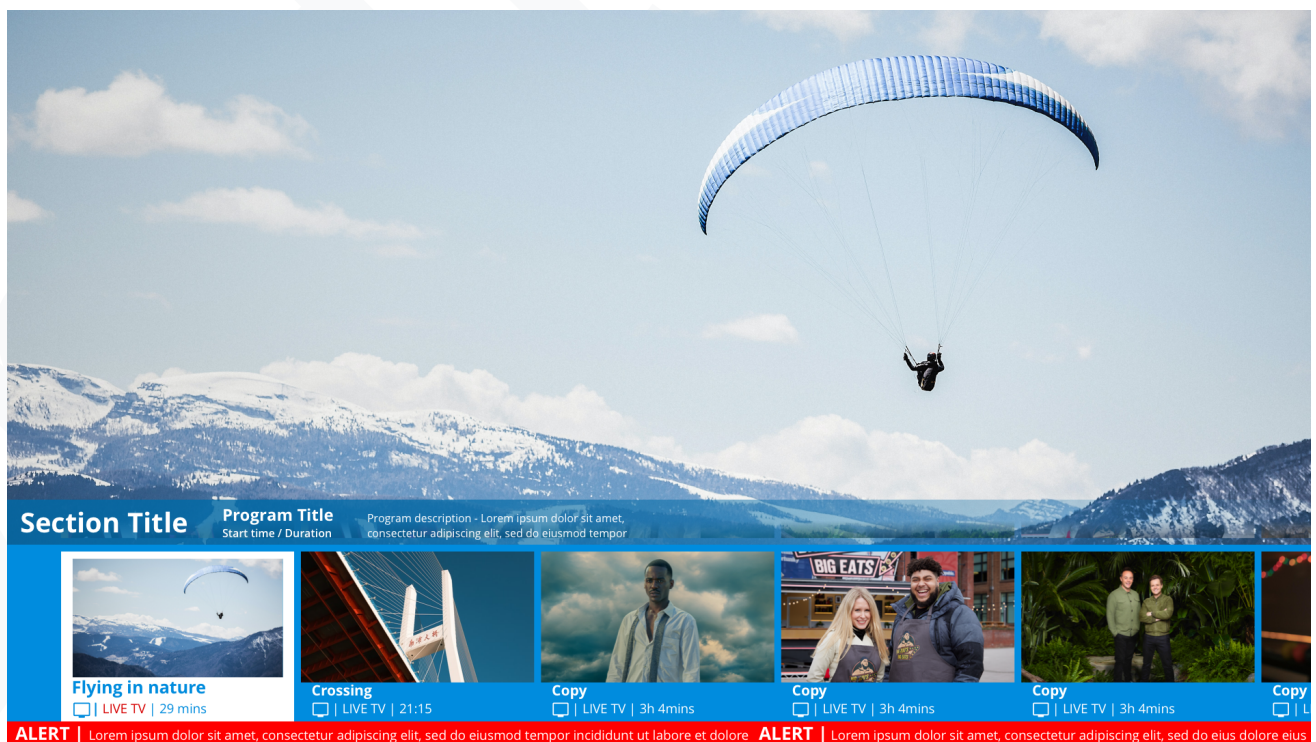
Section Title Area

Program Title
Program description - Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

12:55 am Mountain Standard Time
September, 30th 2022

LOGO

00-1
Channel name

Copy
| LIVE TV | 3h 4mins

Copy
| LIVE | 3h 4mins

Copy
| LIVE | 3h 4mins

Copy
| LIVE | 3h 4mins

ALERT | Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore   **ALERT |** Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eius dolore eius

---

Section Title Area

Program Title
Program description - Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

12:55 am Mountain Standard Time
September, 30th 2022

LOGO

00-1
Channel name
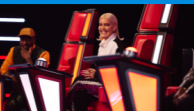
Copy
| LIVE TV | 3h 4mins

Copy
| LIVE | 3h 4mins

Copy
| LIVE | 3h 4mins

Copy
| LIVE | 3h 4mins

NEWS | Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore   **NEWS |** Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eius dolore eius

Example during playback of vod content
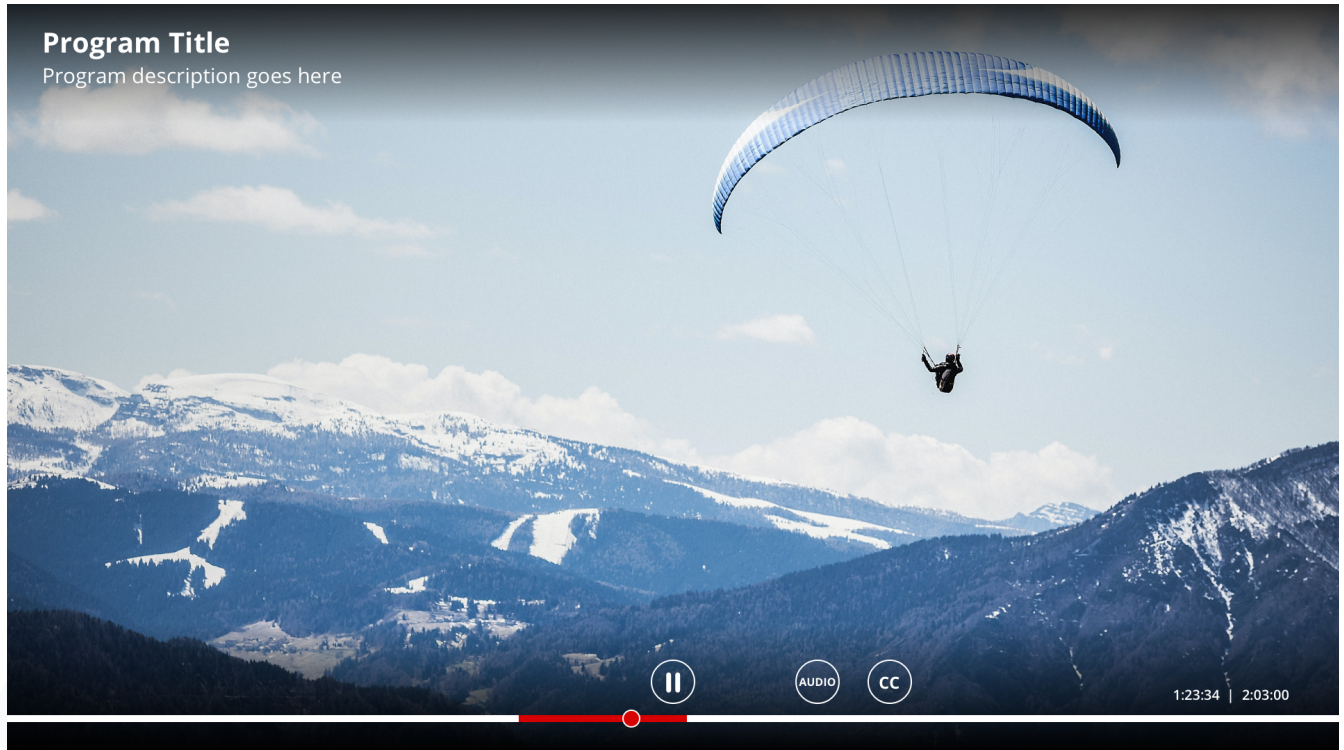
5.7. Alert Content Rail

An alert content rail is displayed when an Alert is received over the IP via the RSS.

FeatureID	Description
alert-001	Broadcaster can define a path for the information crawler in the application configuration under the attribute `alert`
alert-002	The header of the ticker is taken from the feeds /channel/title element otherwise it is overridden by the parameter ticker.title
alert-003	The /channel/item[]/title shall be used to display the ticker text.
alert-004	The speed of the alert can be configured within the application configuration file under the attribute alert.speed in seconds.
alert-005	Inline HTML formatting tags can be used in the title to provide additional custom formatting.
alert-006	A new content rail is displayed at the top level when there is one or more items in

	the ALERT RSS feed. theor at the end of the polling interval as defined in the application configuration.
alert-007	The QBAR will poll the feed based on the /channel/ttl if present otherwise use the polling value in the configuration.
alert-008	When there are no items in the alerts RSS then the alert content rail is not shown. Polling should continue for RSS defined feeds and if items are present then its' display again.

In the example below, it is shown as a thin RED strip at the bottom of the screen.
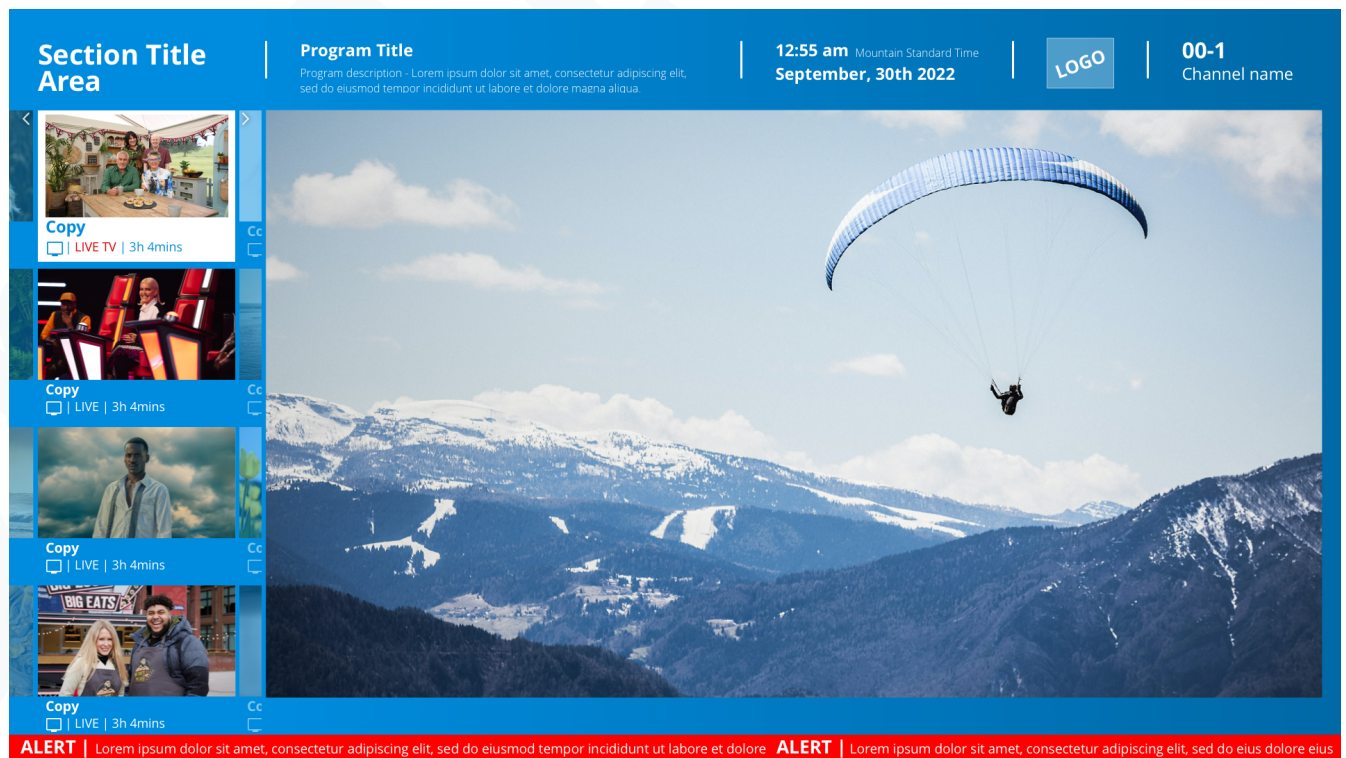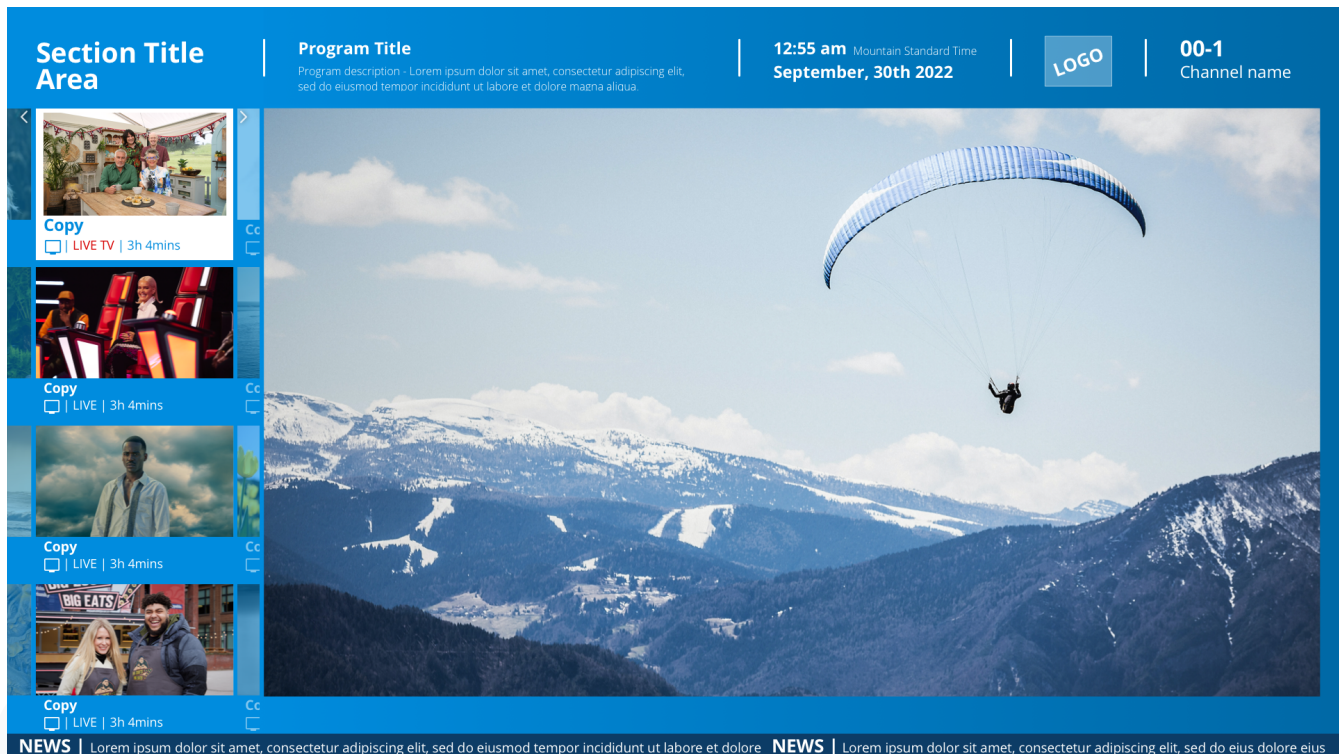
5.8. Standard Run3TV Player Application

A standardized video player application is included in the starter kit. The core functionality of the player application is similar to the one offered in the previous releases. However certain enhancement have been introduced in an attempt to standardize the player behavior when dealing with different types of contents.i .e Live Stream, VOD, Advertisement or Promotional video.

5.8.1. Player Controls Screens

The behavior of the player bar and its associated control keys may change depending on the content being displayed.

5.8.1.1. For VOD Content

When playing in full screen mode with the player time-bar in hidden state:

- Pressing the SELECT key displays the player time-bar with the Play / Pause icon selected by default.

- Pressing the RIGHT ARROW key skips the video forward by 10 seconds. A little icon is momentarily displayed on the right hand side of the screen to indicate that the user has skipped forwards.
- Pressing the LEFT ARROW key skips the video backwards by 10 seconds. A little icon is momentarily displayed on the left hand side of the screen to indicate that the user has skipped backwards.
- Pressing the ARROW UP key displays the player bar with the current video position highlighted.
- Pressing the ARROW UP key again highlights the Play / Pause icon. In this position, pressing the ARROW RIGHT key allows user to select other attributes like CAPTIONS, SUBTITLES (if available and supported)

The time-bar for VOD content is usually displayed using BLUE colour

5.8.1.2.   For LIVE Content

When playing in full screen mode with the player time-bar in hidden state:

- Pressing the SELECT key displays the player time-bar with the Play / Pause icon selected by default.
- Pressing the ARROW UP key displays the player bar with the current video position highlighted.
- Pressing the ARROW UP key again highlights the Play / Pause icon. In this position, pressing the ARROW RIGHT key allows user to select other attributes like CAPTIONS, SUBTITLES (if available and supported)
- Pressing the RIGHT ARROW key may not skip the video forwards immediately. If the live stream has been paused for some time, then this function may work. In such a case, a little icon is momentarily displayed on the right hand side of the screen to indicate that the user has skipped forwards.
- Pressing the LEFT ARROW key may not skip the video backwards. If the live stream has been paused for some time, then this function may work. In such a case, a little icon is momentarily displayed on the left hand side of the screen to indicate that the user has skipped backwards.

The time-bar for LIVE content is usually displayed using RED colour

5.8.1.3.   For Advertisements and Promotional Content

When playing in full screen mode with the player time-bar in hidden state:

- Pressing the SELECT key displays the player time-bar with the Play / Pause icon selected by default.
- Pressing the ARROW UP key displays the player bar with the current video position highlighted.

- Pressing the ARROW UP key again highlights the Play / Pause icon. In this position, pressing the ARROW RIGHT key allows user to select other attributes like CAPTIONS, SUBTITLES (if available and supported)
- Pressing the RIGHT ARROW shall not skip the video forwards.
- Pressing the LEFT ARROW key may not skip the video backwards. If the video has been paused for some time, then this function may work. In such a case, a little icon is momentarily displayed on the left hand side of the screen to indicate that the user has skipped backwards?

The time-bar for an advertisement or promotional video is usually displayed using YELLOW colour

The follow section describes the different assets required

FeatureID	Description
player-001	Present the title of the content item
player-002	Presents the description of the content item.
player-003	Provides the current position and total duration of VOD content
player-004	Provides Pause / Play icons
player-005	Provides icons for Subtitles / Captions if available and supported
player-006	A visual indication of when user skips forwards / backwards

5.8.2. VOD Content

FeatureID	Description
vod-001	Broadcaster can define a path for the information crawler in the application configuration under the attribute `ticker`

The time-bar for VOD content is usually displayed using BLUE colour

Program Title
Program description goes here

10 | ❚❚ | 10 | NEXT ITEM | AUDIO | CC | 1:23:34 | 2:03:00

5.8.3. Live Stream Content

FeatureID	Description
player-001	Broadcaster can define a path for the information crawler in the application configuration under the attribute `ticker`

The time-bar for LIVE content is usually displayed using RED colour

Example of a live stream.
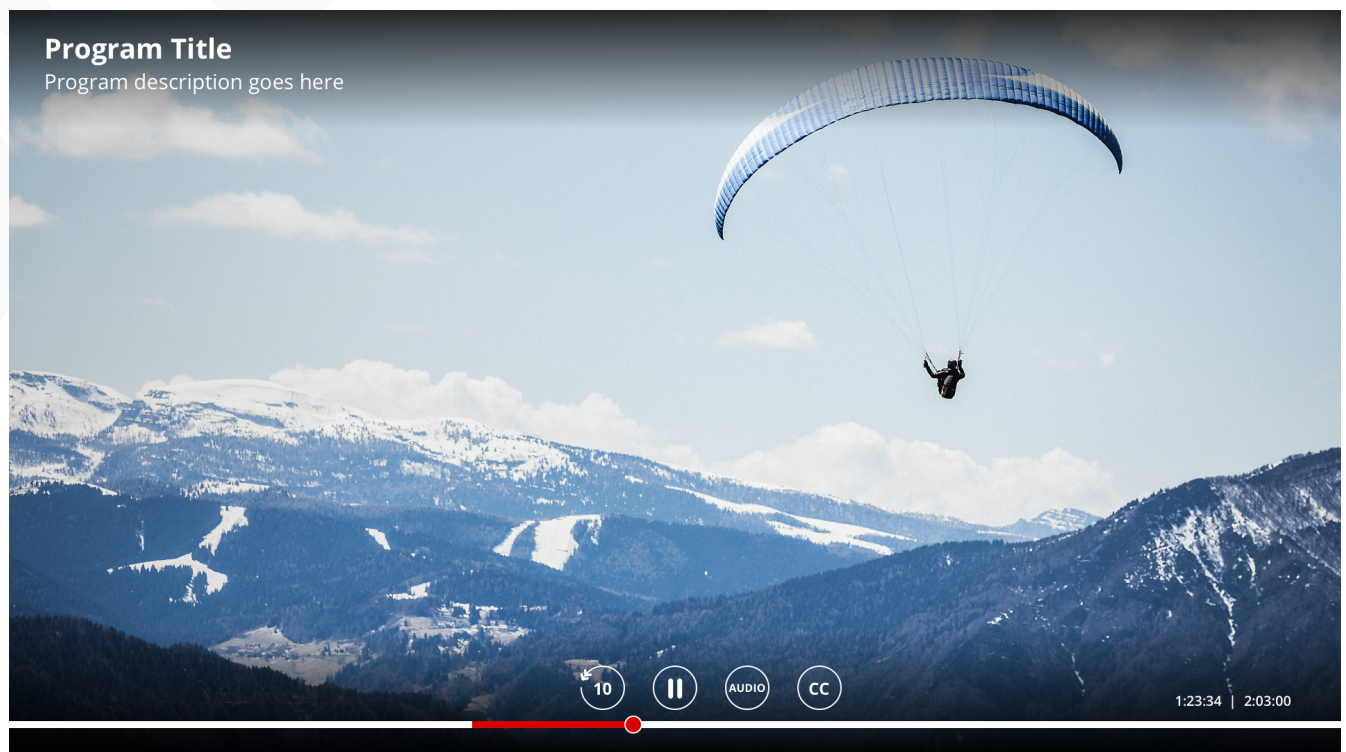
5.8.4. Advertising Content

FeatureID	Description
adplayer-001	Broadcaster can define a path for the information crawler in the application configuration under the attribute `ticker`

The time-bar for an advert is usually displayed using YELLOW colour
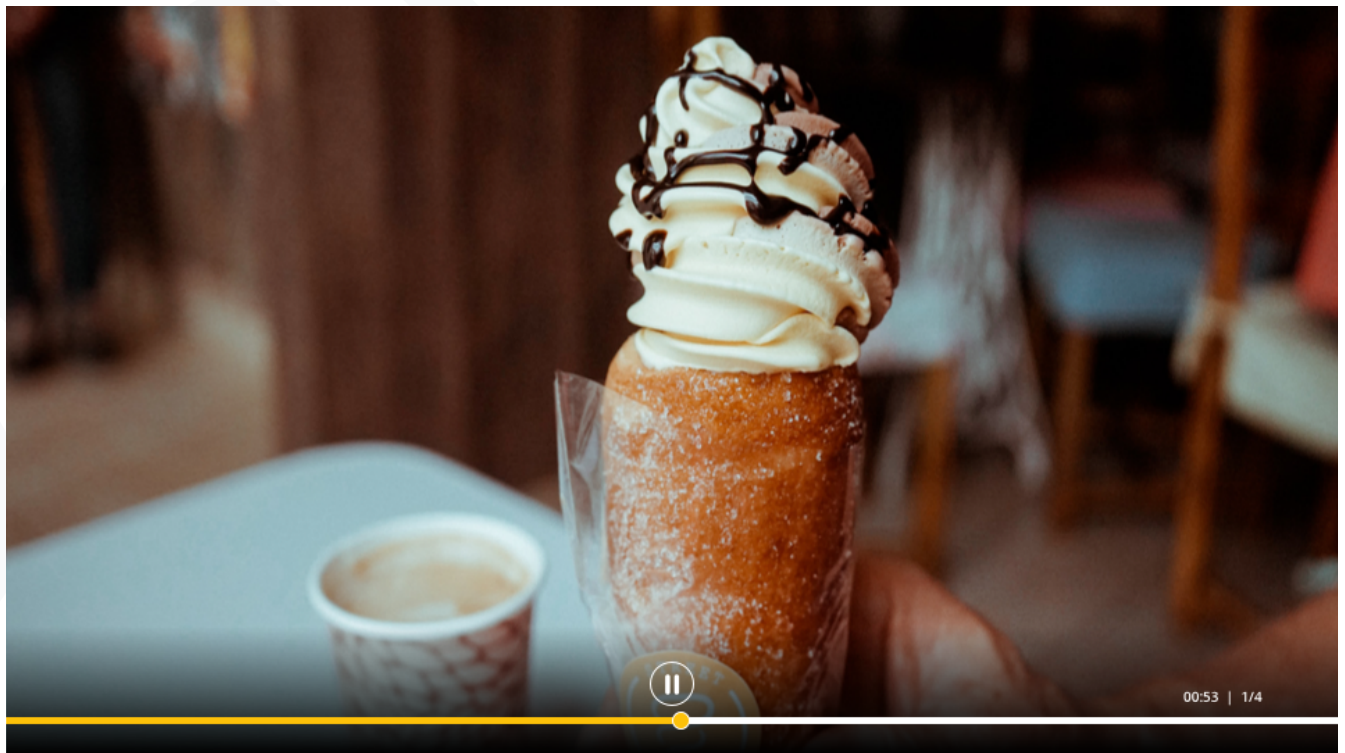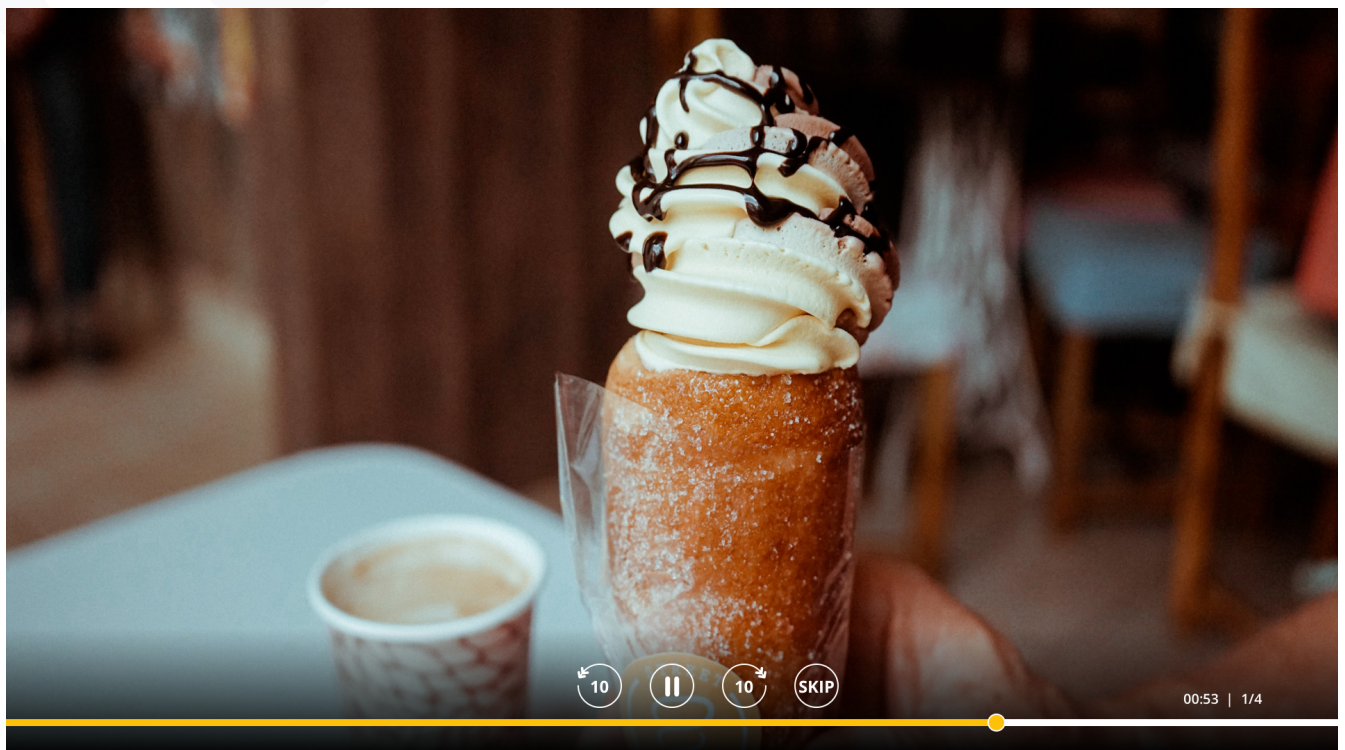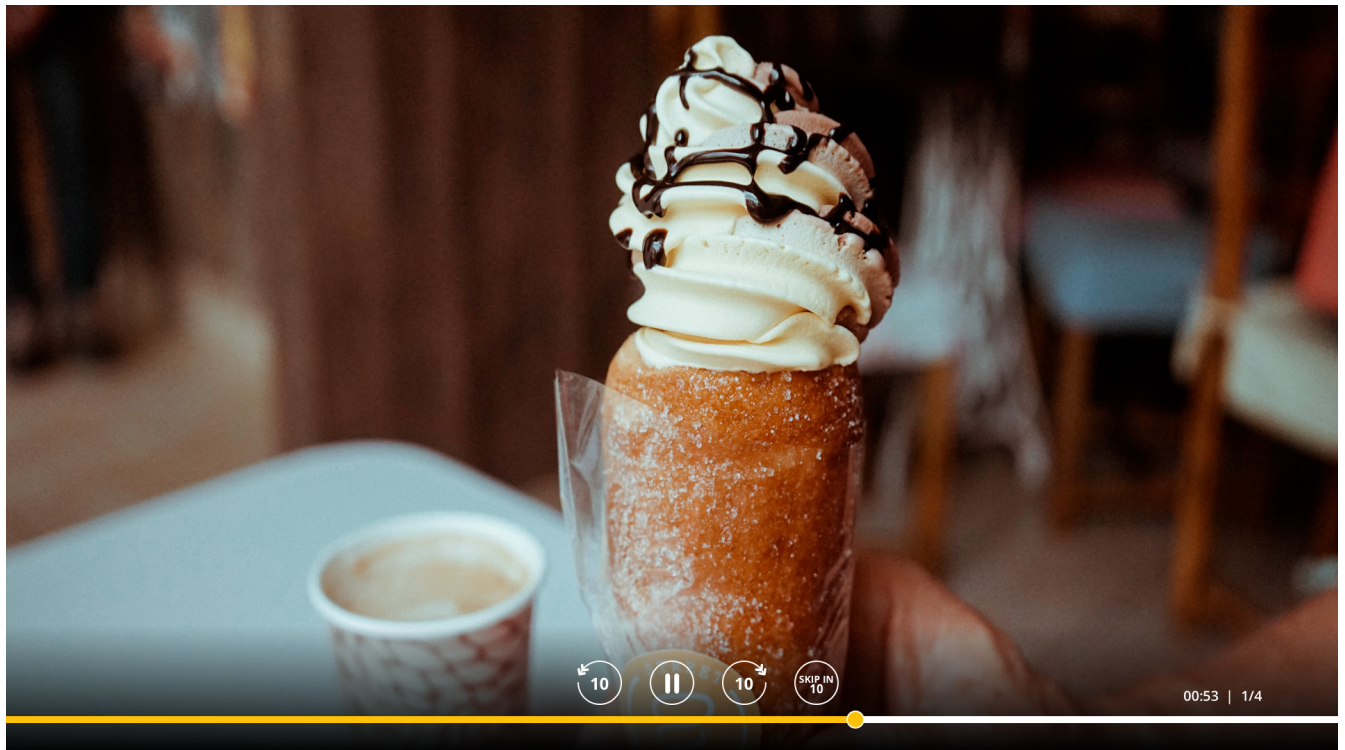
5.9. Broadcaster Customisation

The following section describes the different assets and properties that can all be configured by the Broadcaster in a single 'config.json' file.

5.9.1. Broadcaster Logo

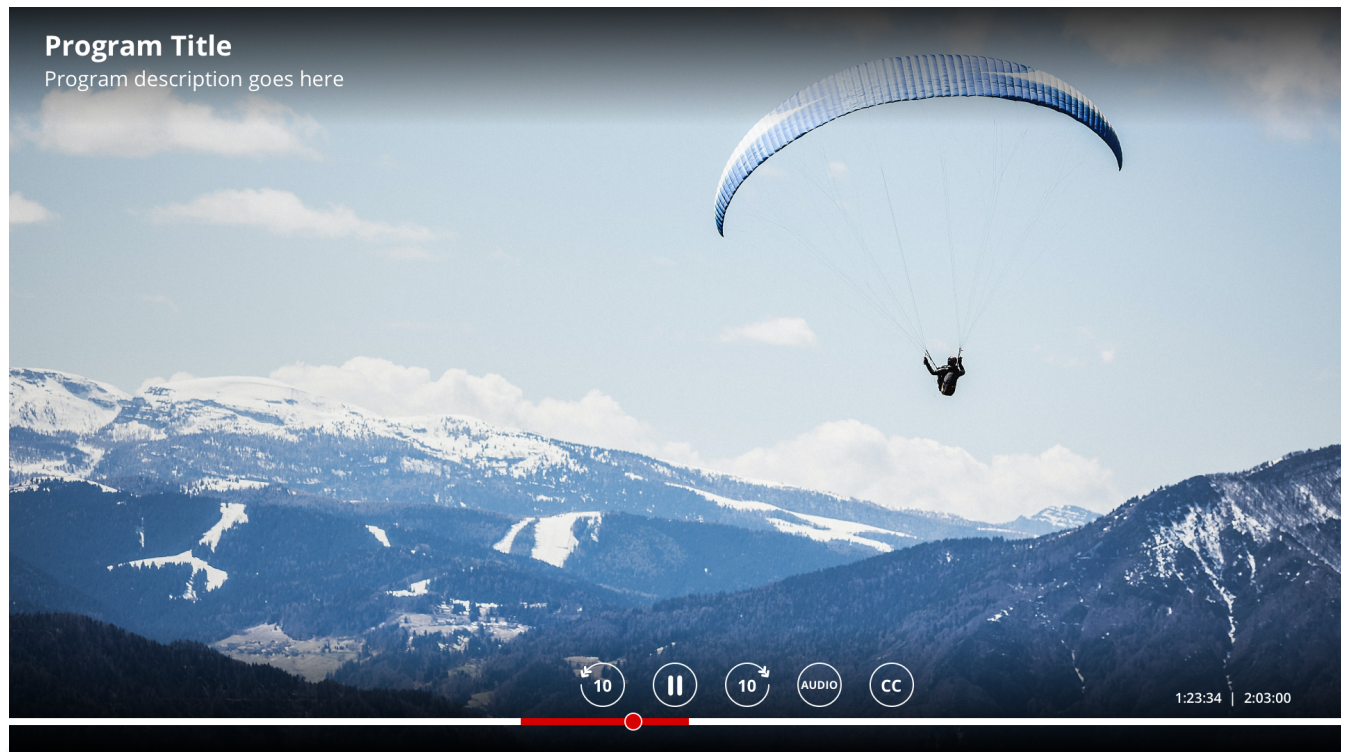The recommended logo size is 80px x 50px. This can be configured in the header section

Example:

```
"header": {"id": "SRV1", "name": "ID-1", "logo": "/london/Station-3/q-bar/img/channel.png"},
```

5.9.2. Broadcaster ID and NAME

This can be configured in the header section of config.json file.

Example:

```
"header": {"id": "SRV1", "name": "ID-1", "logo": "/london/Station-3/q-bar/img/channel.png"},
```

5.9.3. Font Family and Font size

These can also be configured in the 'style' section of config.json file.

Example:

```
"--font-family": "\"Open Sans\", sans-serif",

"--title-font-size": "24px",

"--description-font-size": "20px",
```

The process of installing new / custom fonts is as follows:

Copy the appropriate font file in 'ttf' format in **/font/** folder. Then add a corresponding block in the 'style.css' file in order to call your desired font. The snippet below is added to 'stye.css' file and shows 'Ubuntu Medium' font being used as the desired font.

Example:

```
@font-face {

    font-family: 'Ubuntu Medium';

    font-style: normal;

    font-weight: 400;
```

```
    src: url(fonts/Ubuntu-Medium.ttf) format('truetype');

}
```

5.9.4.   Default and Focus Font Colour

These can also be configured in the 'style' section of config.json file.

Example:

"--font-color": "#fff",

"--focus-font-color": "#008CDE",

5.9.5.   Bar and Focus Background colours

These can also be configured in the 'style' section of config.json file.

Example:

"--bar-bg-color": "#008CDE",

"--focus-bg-color": "#fff",

5.9.6.   Bar Gradient

These can also be configured in the 'style' section of config.json file.

Example:

"--gradient-color-start": "#008CDE80",

"--gradient-color-end": "#008CDE10"

Notice that the colour used here is the same as bar-bg-color (008CDE) but the gradient has been set to vary from 10% to 80% along the length of the bar.

6. Application Configuration

This section covers the application specific configurations. Most of these have already been discussed in the section above.

6.1. Application Configuration File

As mentioned in the previous section, most aspects of the application design can be configured by editing a single file called 'config.json. The following table explains all configurable elements

Attribute	Description	Example
gaId	The Google Analytics property identifier	`"gaId": "G-MXP1YLWM3C"`

timeouts	The number of seconds for the different timeouts	`"timeouts": {`
		`        "trigger" : 10,`
		`        "inactivity" : 30,`
		`        "player" : 5`
		`    },`

style	The location of the style to be applied to the application. See section 5.7 (above) for further details
	
	Optional Root object to adjust the style of the document
	
	Supported Extensions
	Standard URLs (URL, local and relative paths)
	Replacement Run3TV Tags
		`"style":`
		`"/london/wdrb/css/style.css",`
		`":root": {}`

ctaLabel	If the manufacturer provides a bespoke button to start the Run3TV Application then the TAG <baAppearLabel> will be replace with this word, otherwise the default word/graphic is OK.
	
	Supported Extensions
	Replacement Run3TV Tags
	Language options
		`"ctaLabel": "PRESS <baAppearLabel> FOR MORE",`
		
		`"ctaLabel": {"en": "PRESS <baAppearLabel> FOR MORE", "es": "Pressiona <baAppearLabel> para más"}`

design	Indicates to the application which design to apply when rendering.	`"design": "vbar",`

	vbar = vertical mode hbar = horizontal mode Defaults to hbar	
header	Provides header information to display on the trigger and vertical bar. See Header Attribute table below.	`"header": {"id": "32.1", "name": "WDRB", "logo": "/london/wdrb/imgs/channel.png"},`
feeds	An array of feeds to present	`"feeds": [ .. ]`
ticker	A single feed to be used as a ticker	`"ticker": { <feed> }`
alert	A single feed to be used as a alert	`"alert": { <feed> }`
debug	Signaling to add support to debug the application	`"debug": {"showVersion": false, "enableConsole": false }`

Definition of the Header attribute

Attribute	Description	Example
lcn	The Major and Minor channel number	`"lcn": "32.1"`
name	The name of the service	`"name": "WDRB"`
logo	The logo of the station **Supported Extensions** *Standard URLs (URL, local and relative paths)* *Replacement Run3TV Tags*	`"logo": "/london/wdrb/imgs/channel.png"`

Definition of the Timeouts attribute

Attribute	Description	Example

trigger	Optional parameter indicating the number of seconds before the trigger is hidden and live tv is shown. Defaults to 10s	`"trigger" : 10`
inactivity	Optional parameter indicating the number of seconds of inactivity before the application returns to live tv Defaults to 10s	`"inactivity" : 30,`
player	Optional parameter indicating the number of seconds before the player bar is hidden and content is shown Defaults to 5s	`"player" : 5`

Definition of the root Object

Attribute	Description	Example

root	*Provides style overrides.*
	See X section for more information.
		`"root": {`
		
		  `..`
		
		`}`

Definition of the Feeds attribute

Attribute	Description	Example
title	*Optional* title that overrides the title defined in the mRSS feed under the channel attribute. **Supported Extensions** *Language options.*	`"title": "Latest News"`
polling	*Optional* attribute (in seconds) that overrides the polling interval from the feed tag /channel/ttl	`"polling": 60`
feedType	Provides the type of feed that should be presented on the content rail.	`"feedType": "mrss"`

Attribute	Description	Example
	- mrss - esg - aeat Note: If not information is provided then the content rail will not be shown.	

url	The location of the mRSS content feed and support for ESG Programs List.
	
	If feedType = esg then the URL is the globalserviceId
	
	Supported Extensions
	Standard URLs (URL, local and relative paths)
	Replacement Run3TV Tags
	Language options.
		`"url": "/london/wdrb/test.atom"`
		`Or`
		`"url": { "en" :`
		`"/london/wdrb/test-en.atom" , "es"`
		`: "/london/wdrb/test-es.atom"`

controls	This optional object provides additional controls in relation to content playback	`"controls" : { }`
ads	This is an optional object to provide information of ads to be presented when showing the content.	`"ads" : { }`

Definition of the Controls Object

Attribute	Description	Example
autoPlay	*Optional* Once the content item is selected, then the player will automatically start playing without the user pressing the OK button.	`"autoPlay": False`
autoPlayNext	*Optional* time in seconds after the current video playback has finished then the next item shall play until the end of the feed is reach	`"autoPlayNext": True`
playerFullscreen	*Optional* After the user has pressed the OK button, the player will go fullscreen rather than a preview.	`"playerFullscreen": False`

Definition of the Ads Object

Attribute	Description	Example

vastTag	*Optional* URL providing the vastTag xml to use for ads playback.
	
	Supported Extensions
	Standard URLs (URL, local and relative paths)
	Replacement Run3TV Tags
		`"vastTag":`
		`"https://v.mdhv.io/teqaAnCJrOHg0XX`
		`EBCuNcQcYIEth"`

Attribute	Description	Example
	Language options.	

6.2. Example Configuration File

,

```xml
<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:atom="http://www.w3.org/2005/Atom" xmlns:media="http://search.yahoo.com/mrss/"
version="2.0">
 <channel>
  <title>News</title>
  <link>https://server.com/index.html</link>
  <language>en-us</language>
  <pubDate>Mon, 02 Apr 2018 16:19:56 -0700</pubDate>
  <lastBuildDate>Mon, 02 Apr 2018 16:19:56 -0700</lastBuildDate>
  <description>Description to go here.</description>
  <ttl>5</ttl>
    <item>
      <title>Live_TV</title>
      <description>Live TV Channel Description</description>
      <guid>201</guid>
      <category>News</category>
       <media:group>
        <media:content medium="video" type="application/dash+xml" expression="ota"
url="https://doi.org/10.5239/BCC1-49C1"></media:content>
       </media:group>
      <media:thumbnail url="/london/img/Live_TV.png" width="300" height="169"
attr="Live_TV"></media:thumbnail>
    </item>
  </channel>
</rss>
```