Connected TV Applications for TiVo

OTT Video Player (HTML 5 Version)

Design Outline

3 Mar 2015

Changelog

Here are a list of changes that were made from the previous document titled "OTT_H5_7Jan2015.pdf"

1) Added playlist location numbers (eg. '1/5') and playlist duration value to status bar (page 3).

2) STOP button exits the player. Clarified on page 13.

3) Rules for including the loading spinner added. (page 8)

4) Behaviour for tick marks near the end of a video clarified. Tick marks at the end of the video are shown, but if it's less than 5 seconds from the end the playhead will not jump. (page 13).

5) Corrected description of the behaviour of the SKIP buttons. (page 13)

Overview

The OTT player shows video streamed by broadband ('Over-The-Top') on the TiVo box.

The design is meant to be familiar to TiVo users, but as OTT video has fewer video transport features than local disk recordings and MSO VOD this UI is slightly altered to reflect the differences. For example, when FAST FORWARD or REWIND is pressed on the remote the OTT video does not 'scan' but 'jumps once' forward or back in the stream.
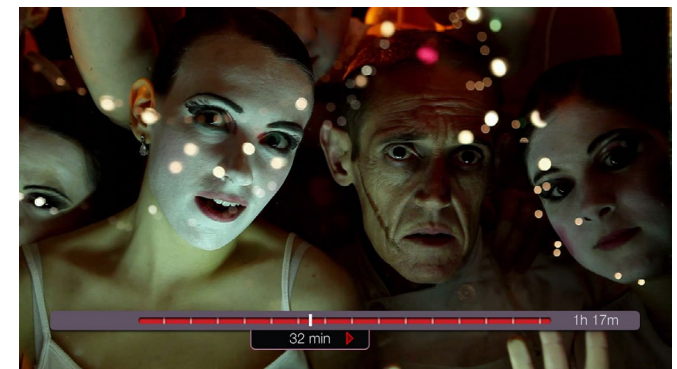
This player also differs in that it shows playlists of videos and can prompt the user at the end of a video (or playlist) so an editor (or content publisher) can direct viewers to a desired destination.
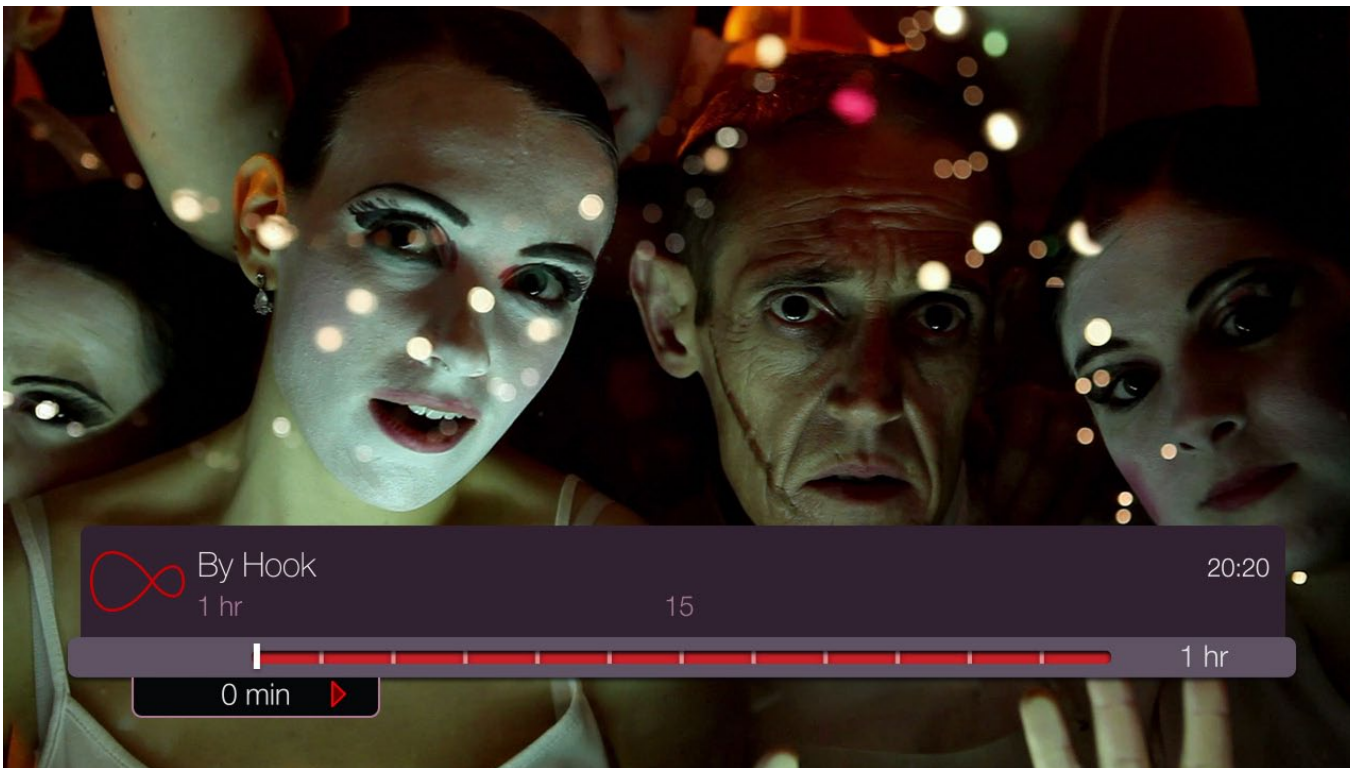
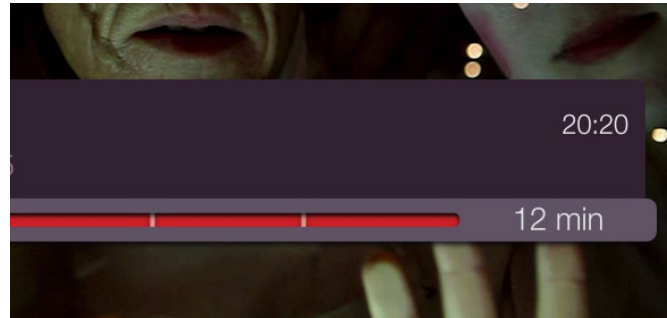1. When the video begins the overlay shows the status bar and the trickplay bar.
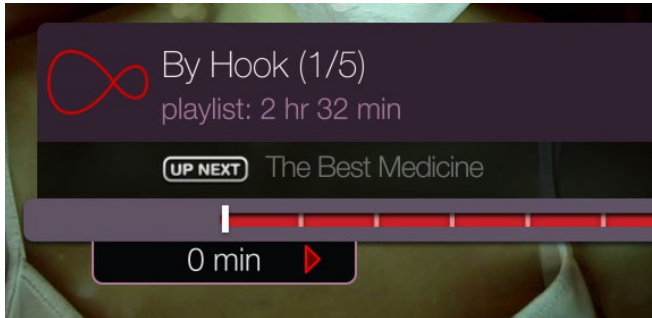

2. After a 5 seconds delay the overlay hides.

3. When the video is being controlled through the trickplay buttons only the trickplay bar overlay appears.

Single Videos vs. Video Playlists

The OTT player plays single videos or video playlists.

When a playlist is launched the overlay UI shows a black 'up next' bar in between the status bar and trick play bar which displays the title of upcoming video in the playlist. SKIP FWD and SKIP BACK buttons now allow the user to skip between assets. By default a playlist loops, but this can be turned off in favour of a post-roll action (eg. taking the user to another screen when the last video is done) or a post-roll prompt (eg. a pop-up window that appears at the end of a video asking the user what they want to do next).

Difference between a playlist and a single video: the playlist has the 'up next' bar that let's the user see the title of the upcoming video, a location number is shown at the end of the current title in parentheses (consisting of the current asset in relation to the number of assets in the playlist. Eg. '(1/5)'), and the total running time of the playlist is listed below the title on the status bar.
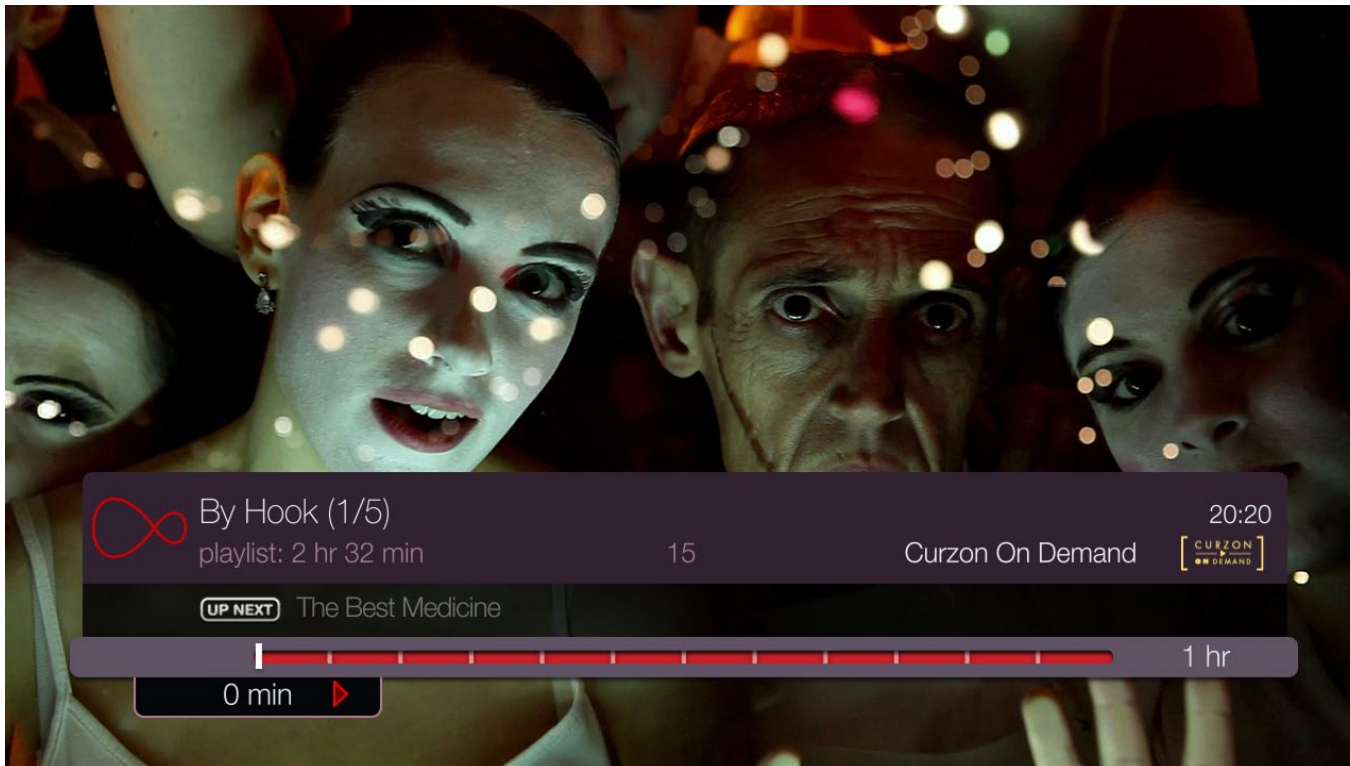
1. When a video playlist begins the overlay shows the status bar, the up next bar, and the trickplay bar.

2. After a 5 seconds delay the overlay hides.
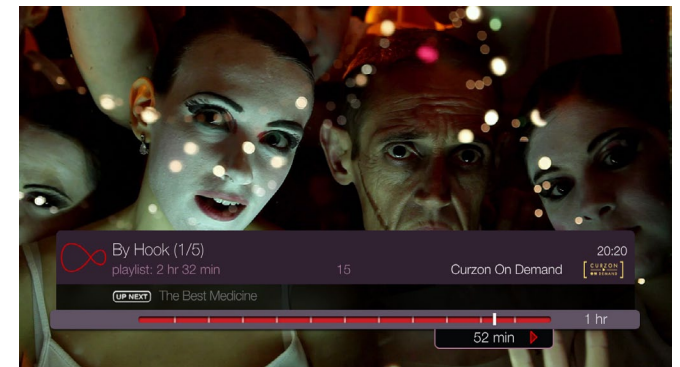
3. When INFO is pressed during the video the full overlay UI appears.

Video Transport Icons

Video transport, fast forward and rewind icons

A video on the local disk with multiple speed scanning

A video on MSO VOD with single speed scanning

A video served OTT with 'jump to tick'

OTT video 'jumps once' when the FAST FORWARD or REWIND buttons are tapped or held, as opposed to the 'scanning' that occurs with the MSO VOD player. This difference is represented by ghosted FAST FORWARD or REWIND icons (pictured above). The playhead jumps to the nearest tick mark when these buttons are pressed.
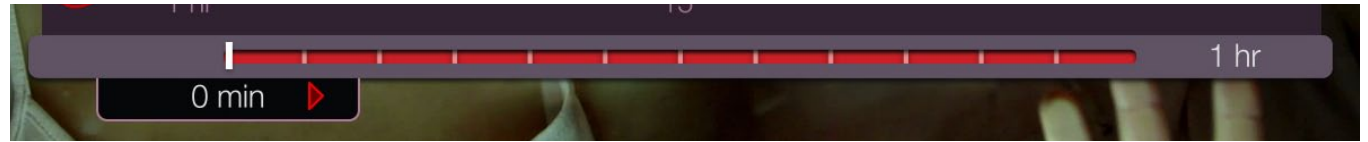
1. Playhead shows the play symbol (red triangle) while the video playing. Is triggered by PLAY, or by PAUSE if the video is already paused.
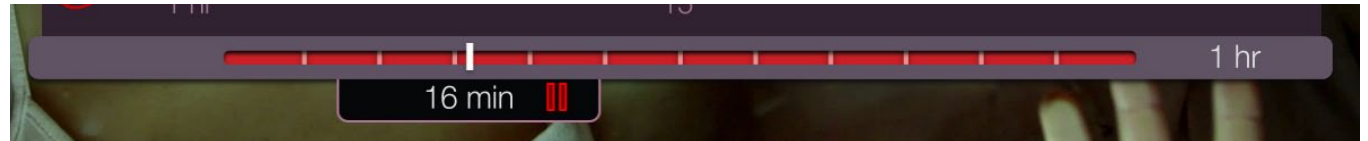
2. Playhead shows the pause symbol (red vertical bars) when the video is paused, triggered by PAUSE button.

3. Playhead shows ghosted fast forward symbol (2 triangles) when FFWD is pressed. Playhead advances to the next tick mark and the transport icon reverts to the play icon as the video resumes playing normally.

4. The reverse of above. Playhead shows ghosted rewind symbol (2 triangles) when RWD is pressed. Playhead advances to the previous tick mark and the transport icon reverts to the play icon as the video resumes playing normally.
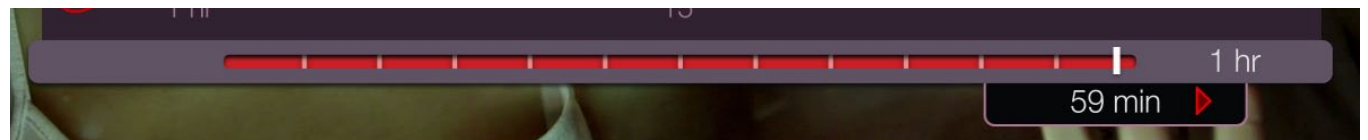
5. Pressing SKIP FWD or SKIP BACK while playing moves the playhead to the end or beginning of the video, respectively.

Tick Mark Placement

Differences with the MSO VOD Player

The VOD Player shows no tick marks below 15 mintues (see 'Zenith v151.
doc' sec 5.5.1). As the OTT player will often be used for short form videos (30
second adverts, for example) and the tick marks designate the jump-to points
when pressing FAST FWD and RWD, the OTT player has tick marks below 15
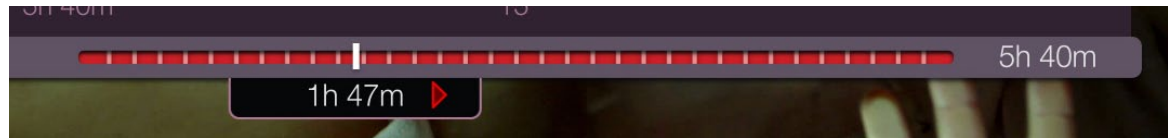minutes.

Rules

Where the periodic tick marks are placed depends on the duration of the
video. Most long videos will have 5 minute tick marks. Short videos (less than
15 minutes) will have 2 or 1 minute tick marks, and very short videos (less
than 5 minutes) will have 30 second tick marks.

Duration	Tick marks
0:01 min to 4:59 min	Every 30 seconds
5 min to 9:59 min	Every 1 minutes
10 min to 14:59 min	Every 2 minutes
15 min to 2:59:59 hr	Every 5 minutes
3 hr to 5:59:59 hr	Every 10 minutes
greater than 5:59:59 hr	Every 20 minutes

As a single logical statement:

If the duration is greater than 359 minutes
    then the ticks are placed every 20 minutes.
Else if the duration is greater than 179 minutes
    then the ticks are placed every 5 minutes.
If the duration is greater than 14 minutes
    then the ticks are placed every 5 minutes.
Else if the duration is greater than 9 minutes
    then the ticks are placed every 2 minutes.
Else if the duration is greater than 4 mintues
    then the ticks are placed every 1 minute.
Else the ticks are placed every 30 seconds.

Greater than 2:59:29 the ticks are placed every 10 minutes.
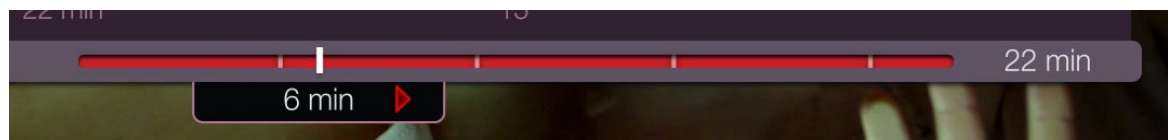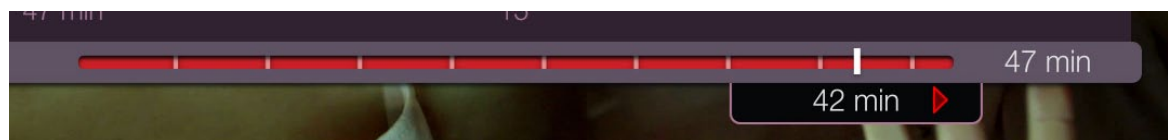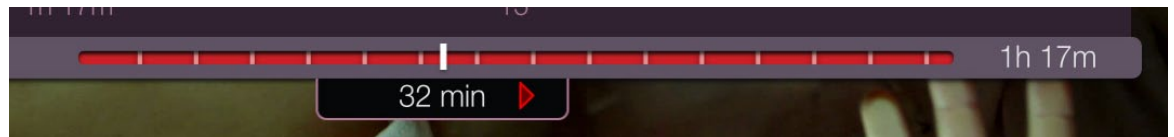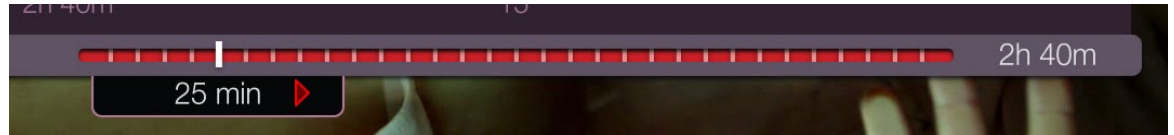
Greater than 14:59 the ticks are placed every 5 minutes.
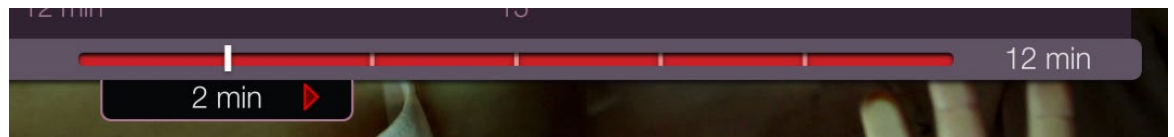
Greater than 9:59 the ticks are placed every 2 minutes.

Greater than 4:59 the ticks are placed every 1 minute.

Less than 5 minutes the ticks are placed every 30 seconds.

Media Time Display

When the time display shows one unit of time then its written as a number, a space, then the unit abbreviation, like one of the following:

<div align="center">

2 hr
35 min
17 sec

</div>

When the display shows two units together its written as a number, a one letter abbreviation, a space, and then another number and one letter abbreviation, like one of the following:

<div align="center">
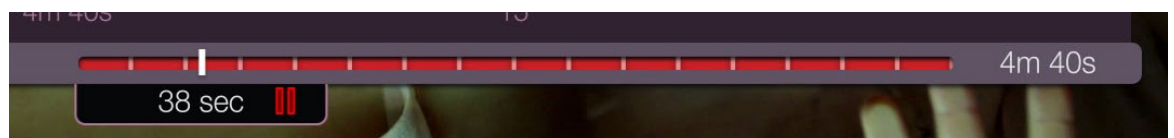
1h 17m
5m 33s

</div>

The total duration of the video will determine which units are displayed and their format. Long videos (over an hour) will show hours and minutes, medium length videos (10 minutes to an hour) will show only minutes, and shorter videos (under 10 minutes) will show minutes and seconds.

Time	Display	Example
1 sec to 59 sec	"# sec"	1 sec 59 sec
1 min to 9:59 min	if 0 seconds then "# min" else "#m #s"	4m 59s 1 min
10 min to 59:59 min	"# min"	5 min 59 min
greater than 1 hour	if 0 minutes then "# hr" else "#h #m"	1h 17m 2 hr

Put together as a single logical statement it would be (with '#' representing a number):

　　　if the duration is greater than 9:59 minutes (medium and long videos)
　　　　　then if the current time is greater than 59:59 minutes (on long videos)
　　　　　　　then if the current time has 0 minutes then write '# hr'
　　　　　　　else write '#h #m'
　　　　　else write '# min' (in the first hour of medium or long videos)

　　　else (for short videos)
　　　　　then if the current time is greater than 0:59 minutes (on short videos)
　　　　　　　then if the current time has 0 seconds then write '# min'
　　　　　　　else write '#m #s'
　　　　　else write '# sec' (in the first minute of short videos)

Note the units are different at the beginning of videos of different durations.

Most videos display the current time on the playhead in minutes.

On the hour the minutes are not displayed.

Shorter videos show seconds at the beginning, then the current time is in minutes and seconds.

Loader
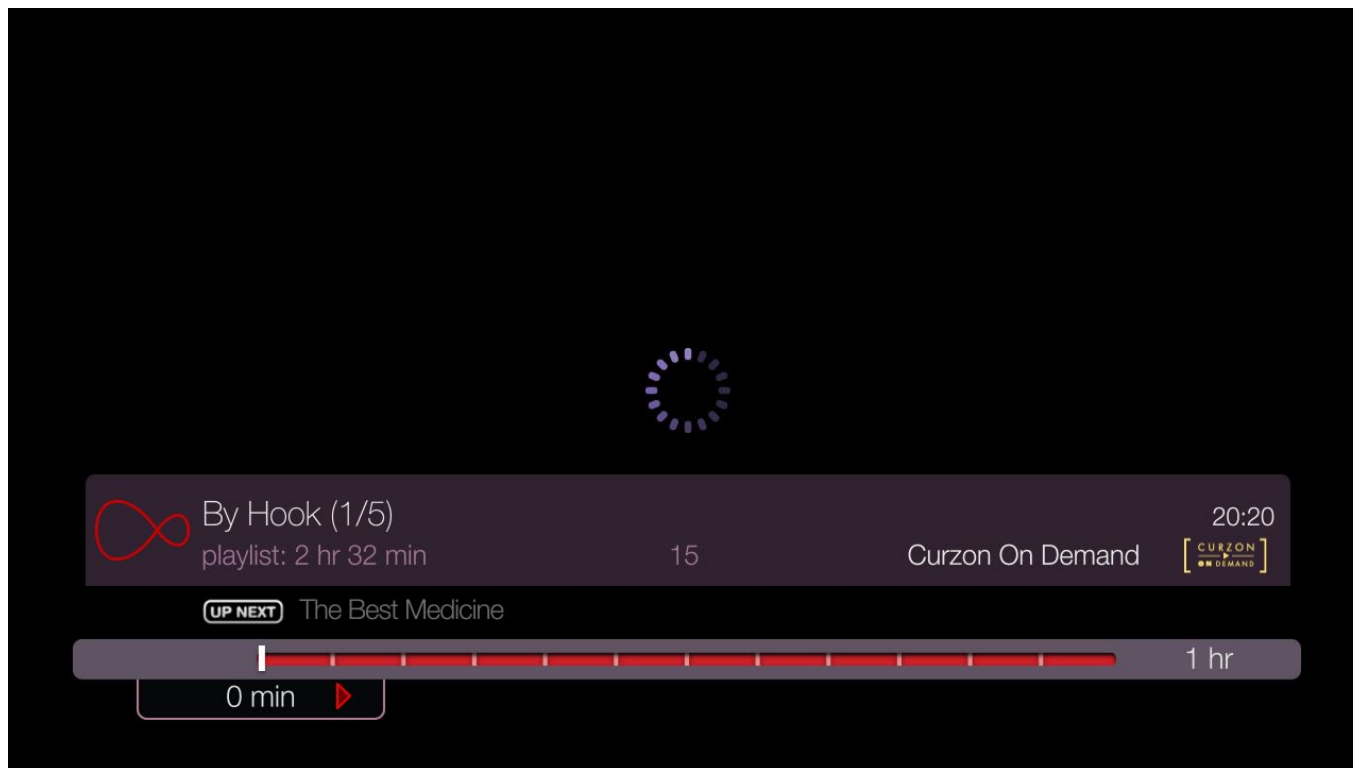
If the video stream takes longer than 3 seconds to start playing the app communicates to the user that it is still functioning by showing the loading spinner animtion, reassuring the user that the app is not frozen.

The timeout delay counter on the overlay UI does not start until the video begins to play, so the UI is visible during the loader.

Post-Roll Prompt and Post-Roll Action

Optionally a single video or a playlist can have a post-roll action, either set by a publisher (and triggered automatically from the user's perpective) or chosen by the user through a pop-up window.

The pop-up window will by default gives the user the option to play the video (or playlist) again or to stop playback and return to the launch point ('go back'). A publisher can customise the options and add additional buttons that take the user to other destinations on the TiVo service, including:
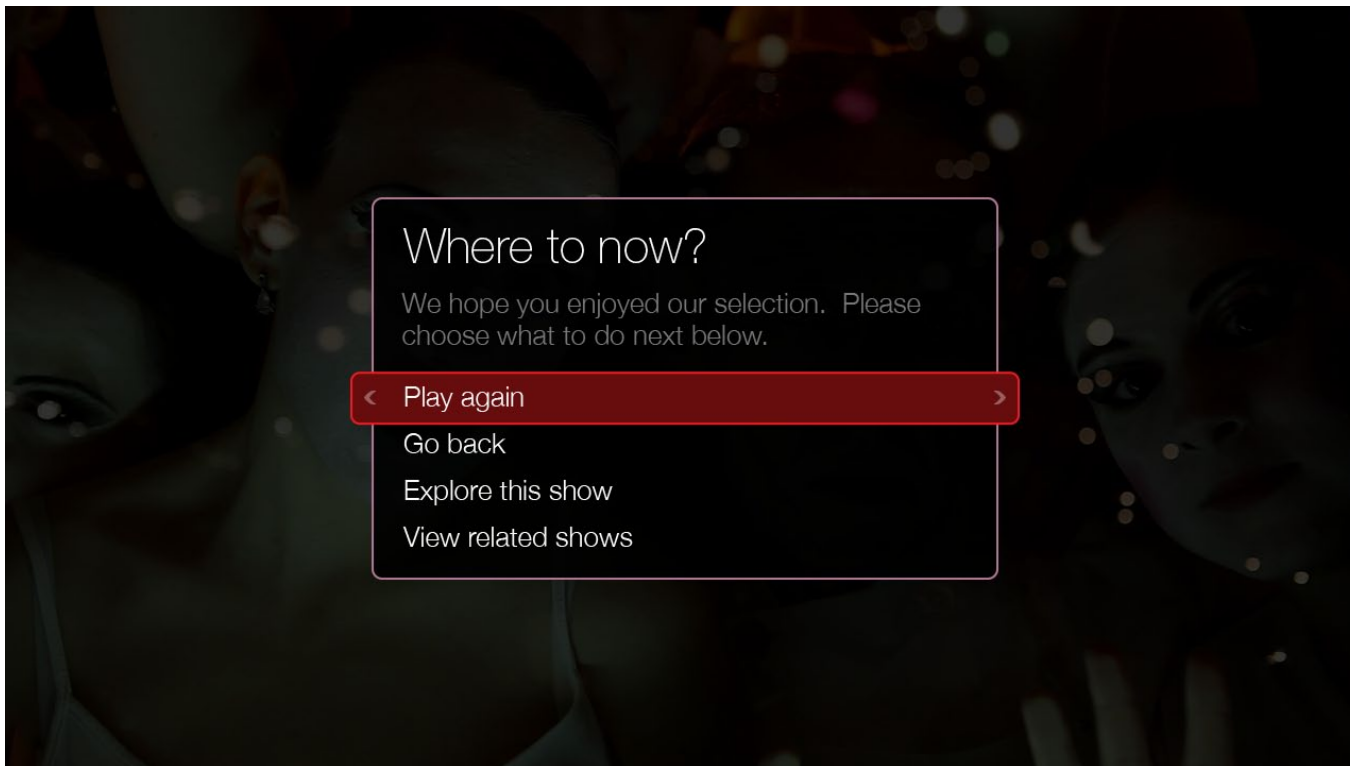
- launching an app.
- a VOD list screen (a VOD folder), focusing on a specific asset in the list.
- tuning into a linear channel.
- a Collections folder, focusing on a specific asset on the grid.
- a 'Get this Show' screen, focusing on a 'Get Series Link' or other menu item.

The width and messaging is customisable. Refer to Popup_17Nov2014.pdf for details on the Pop-up module UI.

Also, if a video is followed by a post-roll action the 'up next' bar is invisible (since there's no video after it). The pop-up window replaces the status bar, so only one overlay should be visible at one time.

Screen Saver
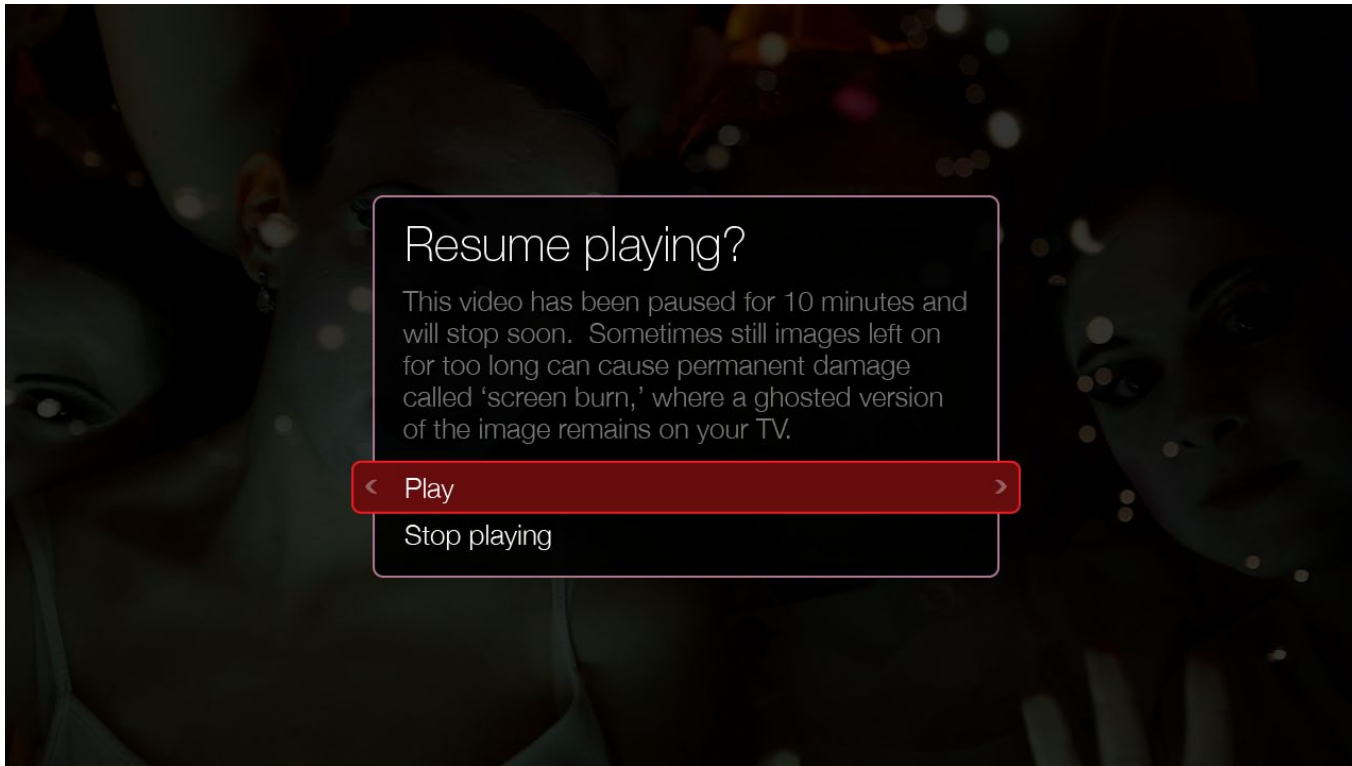
To help prevent screen burn the user will be prompted for action after 10 minutes of pausing. If the user is idle for a further minute the OTT player stops and the user is returned to the launch point.

Custom Metadata and Clock Display on the Status Bar
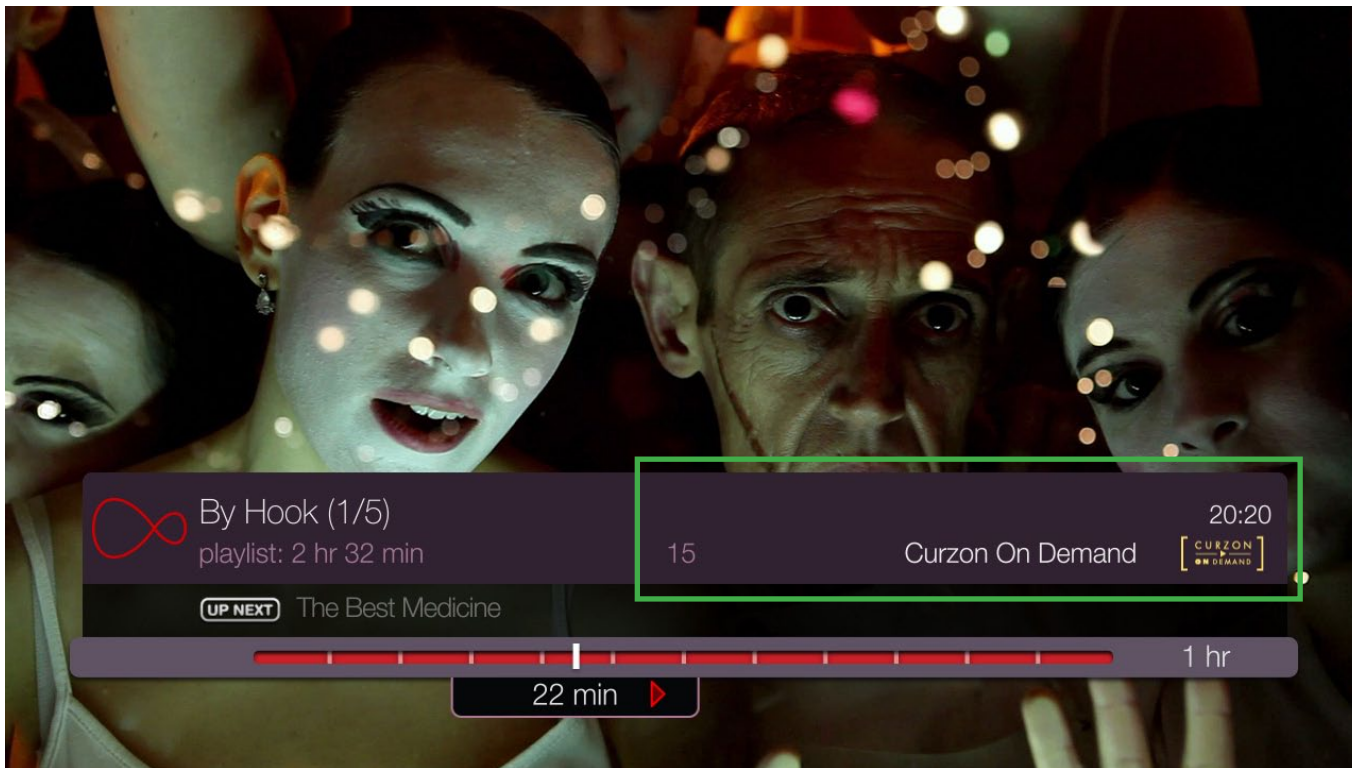
The relavant elements are highlighted in the green box.

The status bar always has a clock at upper right showing the current time (using a 24 hour clock displaying hours and minutes in the ISO 8601 format)

The status bar can optionally display a rating (such as a BBFC classification) and content partner branding.

The branding can consist of a name and a logo (size: 112 x 32 pixels) to express a brand association with a video asset.

Size and Positions of Elements

status bar
w 1130 h 105   w 920 h 26   w 410 h 26   w 912 h 26   w 60 h 26   w 380 h 26   logo   clock
x 75 y 440   x 184 y 460   x 184 y 502   x 274 y 556   x 608 y 502 x 683 y 502   w 112 h 32   w 70 h 26
                                                                                                      x 1074 y 498 x 1116 y 460

Video Title Helvetica Neue Light 26pt #ebebeb   00:00

Duration #ao7694   00   Brand Name #ebebeb

Video Title Helvetica Neue Light 26pt #6e6e6e

00 min

trickplay bar   up next bar   w 115 h 26   00 min   video transport icon   w 150 h 26
w 1155 h 38   w 1130 h 50   w 45 h 26   x 1054 y 601
x 63 y 595   x 75 y 545   playhead w 232 h 38

Behaviour

The full overlay UI, with the status bar above, next bar in the middle, and the trickplay bar below. Appears at the start of the video and when INFO, UP, RIGHT, DOWN, or OK are pressed.

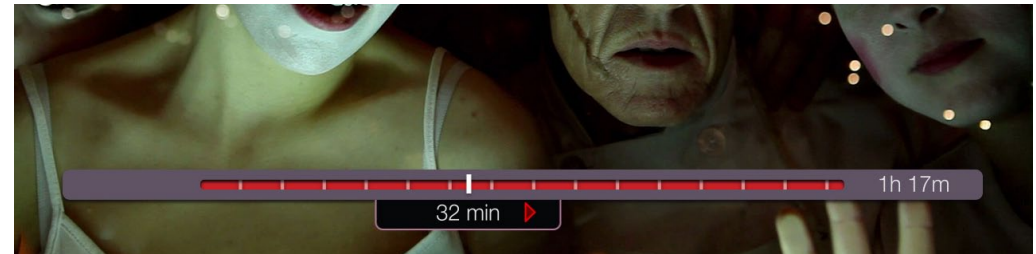The overlay UI showing only the trickplay bar, with the playhead reading 32 minutes. This appears when the trickplay buttons are pressed.

Condition	Button	Action
All	LEFT, STOP	Exits the player. The user is returned back to the previous screen where the OTT player was launched from.
If the player launches	n/a	The video (or the first video if a playlist) starts playing and the overlay UI timeout sequence begins, as follows: the full overlay UI (both trickplay bar and status bar) is visible. If the video takes a while to start streaming (and the screen is black) the overlay UI stays visible. Once the video has started playing a 5 second timeout count-down starts, after which the overlay UI hides. The countdown is reset if a user presses buttons described in the 'if UI is visible' section below.
If the video has been paused for 10 minutes	n/a	User is prompted by a pop-up window if they want to resume playing or stop the video (to prevent screen burn caused by a static image). If the user pressed OK on "resume playing" then the video continues playing. Else if OK is pressed on "Stop the video" or If the user remains idle for another 5 minutes then the player is exited and the user is returned back to the previous screen from where the OTT player was launched.
If a video ends	n/a	If a playlist then the next asset plays. If a post-roll link is set (and if a playlist and the video is the last in the playlist) then go to the destination (this may include looping a playlist, link back to the start), else if a post-roll pop-window is set (and if a playlist and the video is the last in the playlist) then display the pop-up. Else the user is returned back to the previous screen where the OTT player was launched from (this would occur at the end of a playlist if no post-roll link was set).
if the UI is hidden	TRICKPLAY *	Trickplay bar appears, and UI timeout countdown is reset. Video and UI react to the button pressed immediately (described below in the 'if UI is visible' section). If the STOP button is pressed then it exits the player, else it moves the playhead and current time display accordingly.
	INFO, UP, RIGHT, DOWN, or OK	Full overlay UI appears, and UI timeout countdown is reset (If it's a playlist this would include the 'up next' bar)
if the UI is visible	none for 5 seconds	UI hides (as user has been idle).
	CLEAR	Overlay UI hides immediately.
	PAUSE	If the video is playing then it pauses, else the video plays (in other words, the PAUSE button toggles between play and pause).
	PLAY	If the video is paused then the video plays, else if the video is playing the overlay UI hides immediately.
	REWIND	If there is a tick mark to the left of the current time then the playhead and video jump back to the tick and the video plays from there. Else jump to the beginning of the video and play from there.
	FAST FORWARD	If there is a tick mark to the right of the current time AND there is more than 5 seconds between the tick mark to the right and the end of the video then the playhead and video jump forward to the tick and the video plays from there. Else BONK.
	SKIP BACK	If the current video is not part of a playlist OR the playhead is past the 5 second mark (greater than 5 seconds) then the video and the playhead reset and play from the beginning. Else jump to the beginning of the previous asset in the playlist and start playing from its beginning.
	SKIP FORWARD	If the current video is not part of a playlist then skip to just before the end (1 minute before the end for videos over 10 minutes, 10 seconds before the end for video under 10 minutes). Else jump to and play the next asset in the playlist.

* TRICKPLAY is PLAY, STOP, PAUSE, REWIND, FAST FORWARD, SKIP BACK, SKIP FORWARD, and SLOW.