HbbTV Op App Specification Update

15 February 2024 · Chris Poole

BBC
RESEARCH &
DEVELOPMENT

Why update the specification?

Two reasons

Learning from experience

Addressing limitations

Why update the specification?

What has changed?

Learning from experience: Lifecycle

- More flexible **update options** (cater for variants of op app)
- More **entry points** defined (reduce private extensions)
- Option for op app to **remain running** silently outside of TV viewing mode

Learning from experience: User experience

- Ability to show **overlaid UI** elements in additional cases
- "**Exit**" key handling
- Allow op app use of **terminal** parental PIN prompts

Addressing limitations

- **Dedicated** persistent storage
- Op app **installation** from a **CI+ CAM**
- **Communication** with regular apps
- IP / broadcast **linear channel equivalence**

Focus of this presentation

Linear channel features in HbbTV

2018 op app specification

	Broadcast channels	IP channels
Video and audio	✓	✓
Access services	✓	✓
Listed in op app UI	✓	✓
Listed in terminal UI	✓	✗
Can have associated regular HbbTV applications	✓	✗
Controllable through regular app or terminal UI	✓	?
Support for Javascript DASH player	N/A	?

Operator Application Presented Channels

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Operator Application Presented Channels

Responsibilities

TV responsible for:

- **Managing channel list**
- **Managing “current channel”**
- **Starting and stopping regular HbbTV applications**
- **When an Operator Application Presented Channel is selected:**
  - Calling the op app to start media playback
  - Calling the op app for other linear channel operations

Operator Application responsible for:

- **Implementing the APIs for op app channels**
- **When an Op App Presented Channel is selected:**
  - Finding and selecting the media for an IP channel
  - User authentication
  - DRM licence acquisition
  - Playback of the channel’s media (e.g. using a Javascript DASH player)
  - Rendering of the channel’s subtitles

Operator Application Presented Channels

Channel **discovery** and linkage to regular HbbTV apps

Service ID	Name	Related op-app	Related regular HbbTV app	…
tag:provider1.com,2024:S1	S1			
tag:provider1.com,2024:S2	S2	dvb://system.ait/945.2		
tag:provider2.com,2021:R1	R1	dvb://system.ait/945.2	http://example.com/redbutton	
tag:provider2.com,2021:R2	R2	dvb://system.ait/945.2		
tag:provider3.com,2023:X1	X1	dvb://system.ait/945.2		
tag:provider3.com,2023:X2	X2		http://hbapps.example/playalong	
tag:provider3.com,2023:X3	X3			

1

DVB I

or

2

Proprietary equivalent (bilateral agreement)

#	Channel	Op app presented channel?
1	S1	
2	S2	**YES**
3	R1	**YES**
4	R2	**YES**
5	X1	**YES**
6	X2	
7	X3	

TV channel list

or

3

By op app (transient only – not in channel list)

DVB I format

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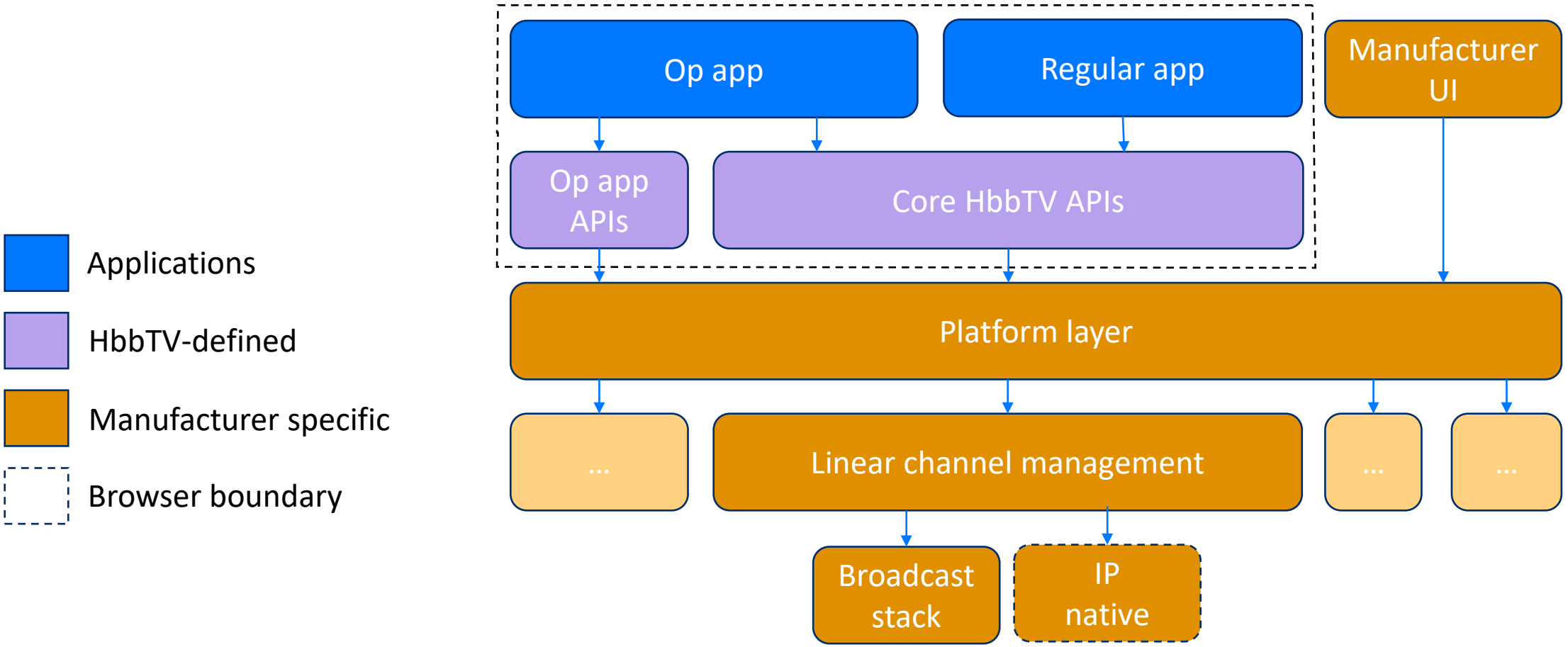
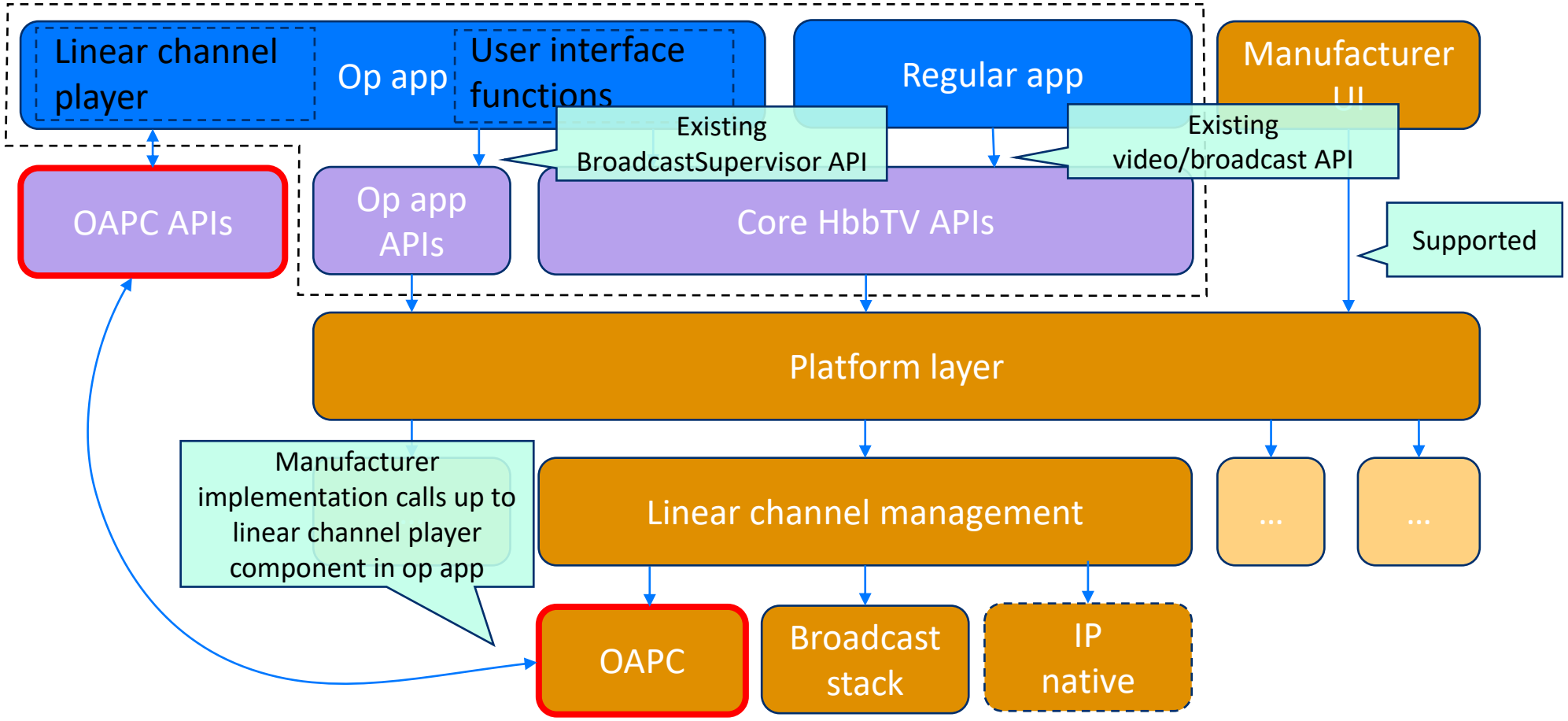
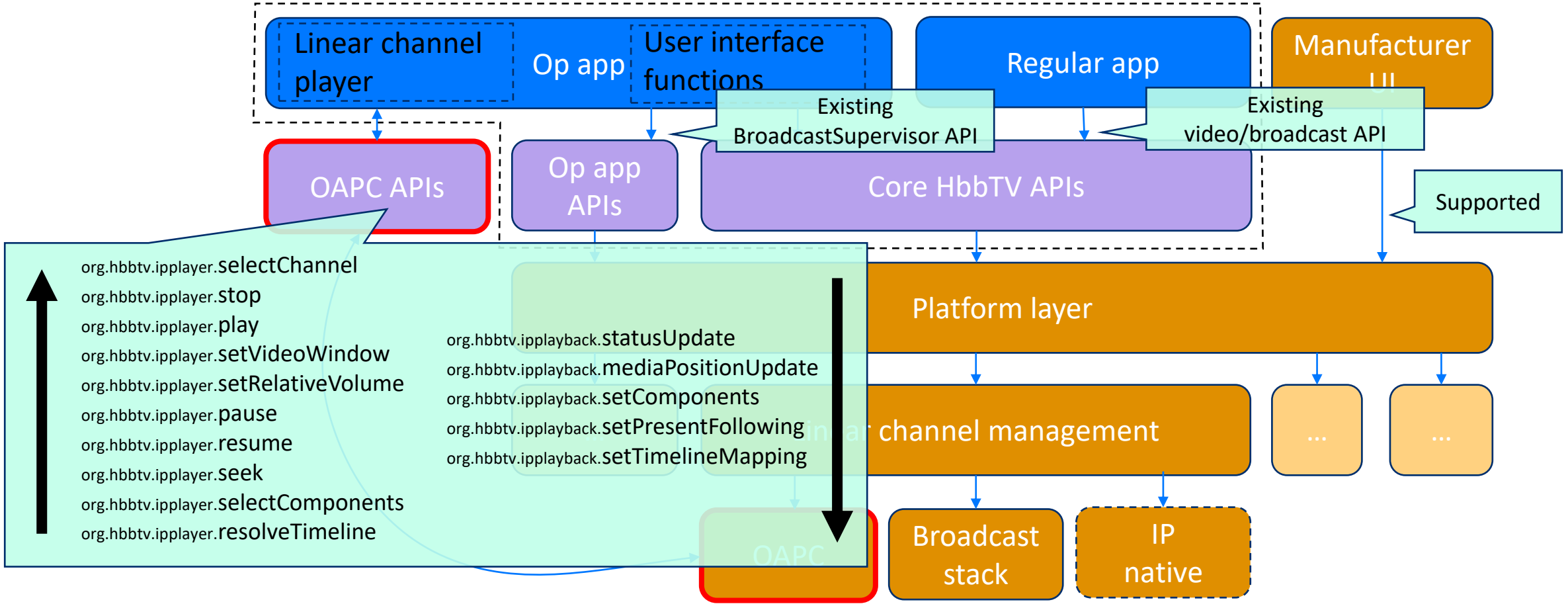
Control of linear channels – before



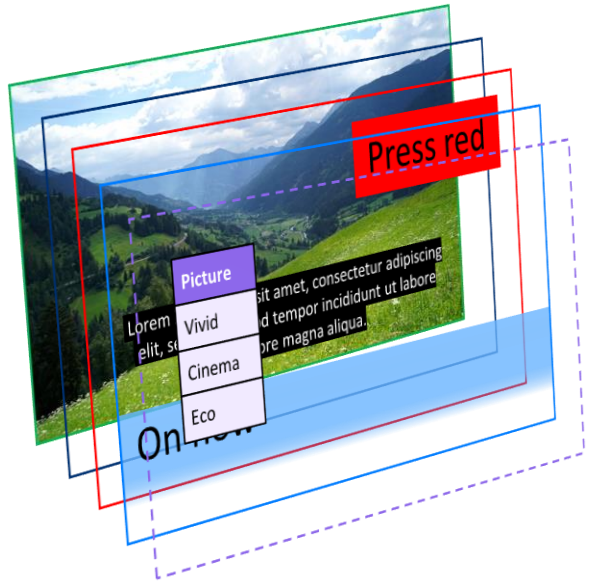
With Operator Application Presented Channels



With Operator Application Presented Channels

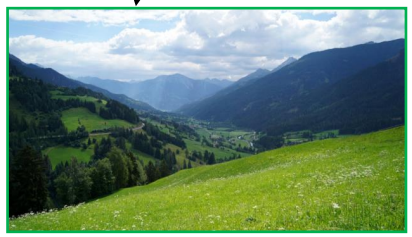


Graphics layers for op app presented channels

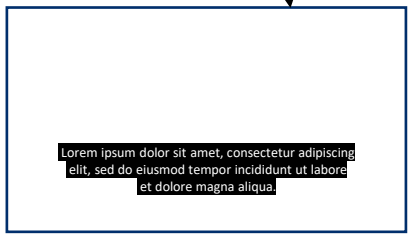


Op app “video window”

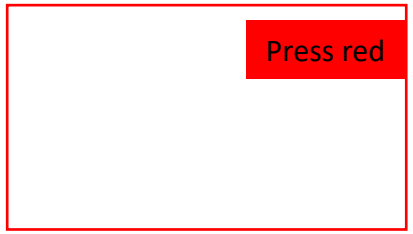
Op app “main window”



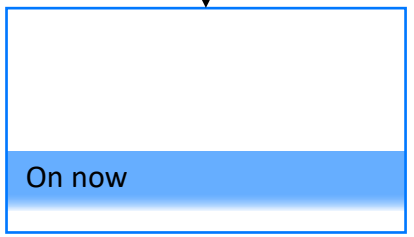
Video



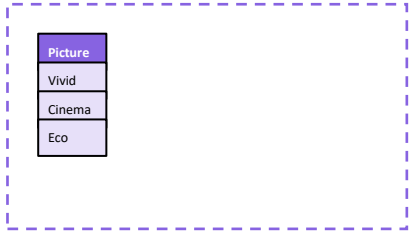
Op app subtitles



Regular HbbTV app



Op app UI



Terminal UI

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Linear channel features in HbbTV

Updated op app specification

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* with discovery option 1 or 2

Thank you.

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