

BBC

Design + Engineering

BBC iPlayer

Architecting for TV

David Buckhurst



David Buckhurst

davidbuckhurst

BBC Engineering Manager for

Overview

Repositories 26

Stars 18

Followers

Pinned repositories

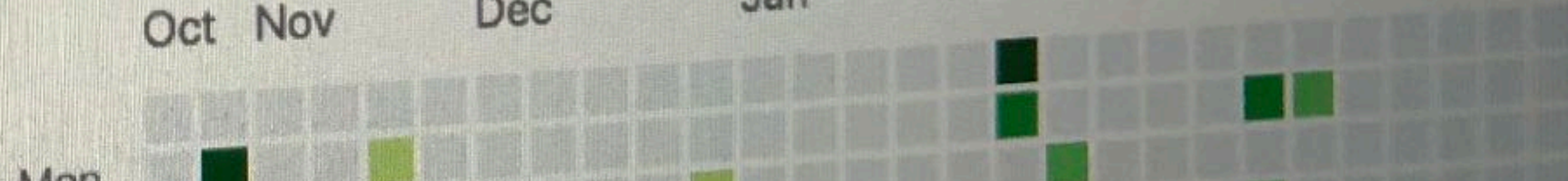
numberbonds

Numberbonds game for primary school children

JavaScript 1

187 contributions in the last year

Oct Nov Dec Jan Feb Mar Apr





The Studios

Melia CityUK







ELIZABETH THE SECOND

by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of Our other Realms and Territories Queen,
Head of the Commonwealth, Defender of the Faith:

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING!

WHEREAS on the 20th December 1926 by Letters made Patent under the Great Seal, Our Royal Predecessor His Majesty King George the Fifth granted to the British Broadcasting Corporation ("the BBC") a Charter of Incorporation:

AND WHEREAS on various dates by Letters made Patent under the Great Seal, further Charters of Incorporation and Supplemental Charters have been granted to the BBC, the last such Charter having been granted to the BBC on the 1st May 1996 ("the 1996 Charter");

AND WHEREAS the period of incorporation of the BBC under the 1996 Charter will expire on the 31st December 2006 and it has been represented to Us by Our right trusty and well beloved Counsellor Tessa Jowell, Our Principal Secretary of State for Culture, Media and Sport, that it is expedient that the BBC should be continued for the period ending on the 31st December 2016 and that the objects, constitution and organisation of the BBC should be reformed so as to enable the BBC still better to serve the interests of Our People:

AND WHEREAS in view of the widespread interest which is taken by Our People in services which provide audio and visual material by means of broadcasting or the use of newer technologies, and of the great value of such services as means of disseminating information, education and entertainment, We believe it to be in the interests of Our People that there should continue to be an independent corporation and that it should

provide such services, and be permitted to engage in other compatible activities, within a suitable legal framework:

NOW KNOW YE that We by Our Prerogative Royal and of Our especial grace, certain knowledge and mere motion do by this Our Charter for Us, Our Heirs and Successors will, ordain and declare as follows:

INCORPORATION AND PURPOSES

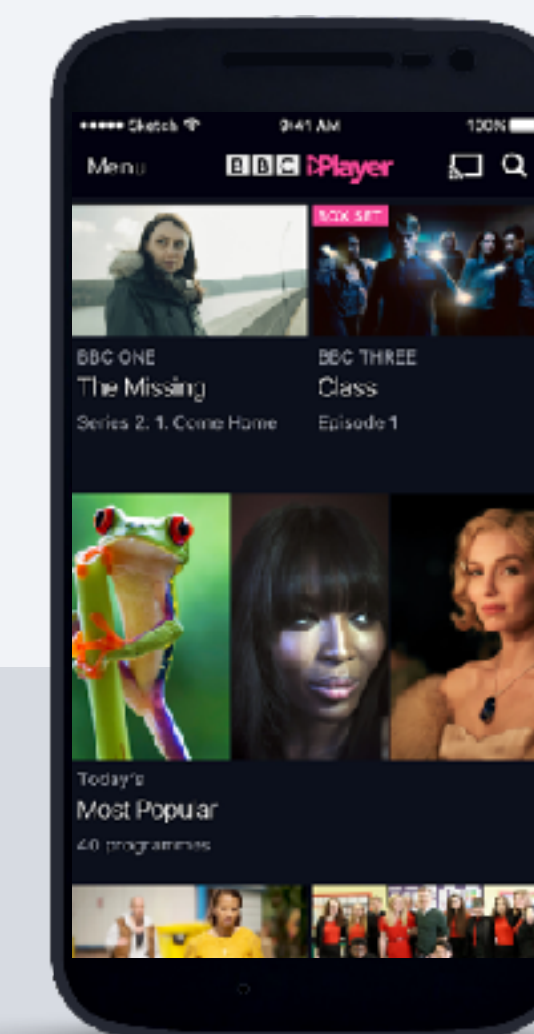
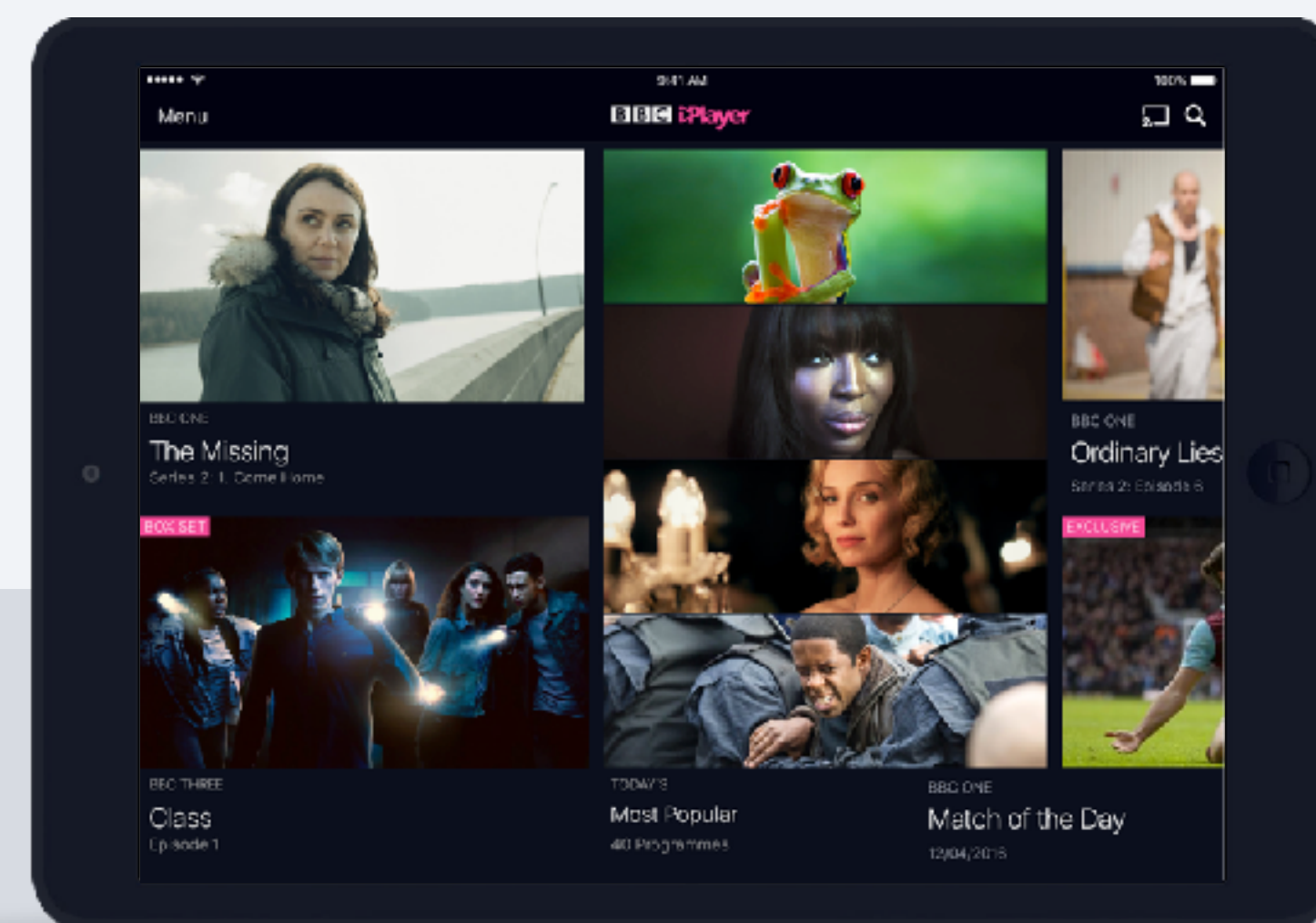
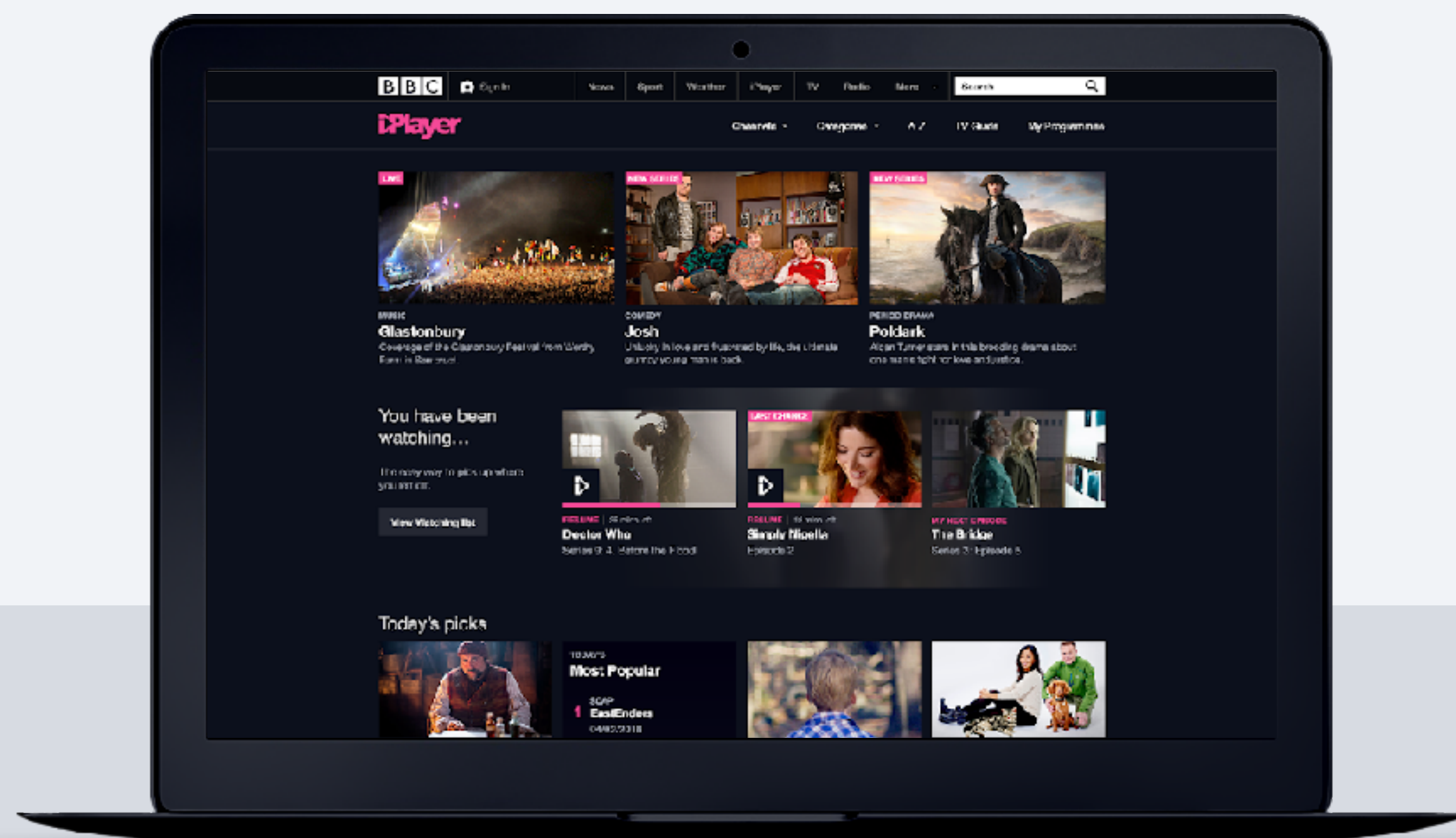
1. Incorporation of the BBC

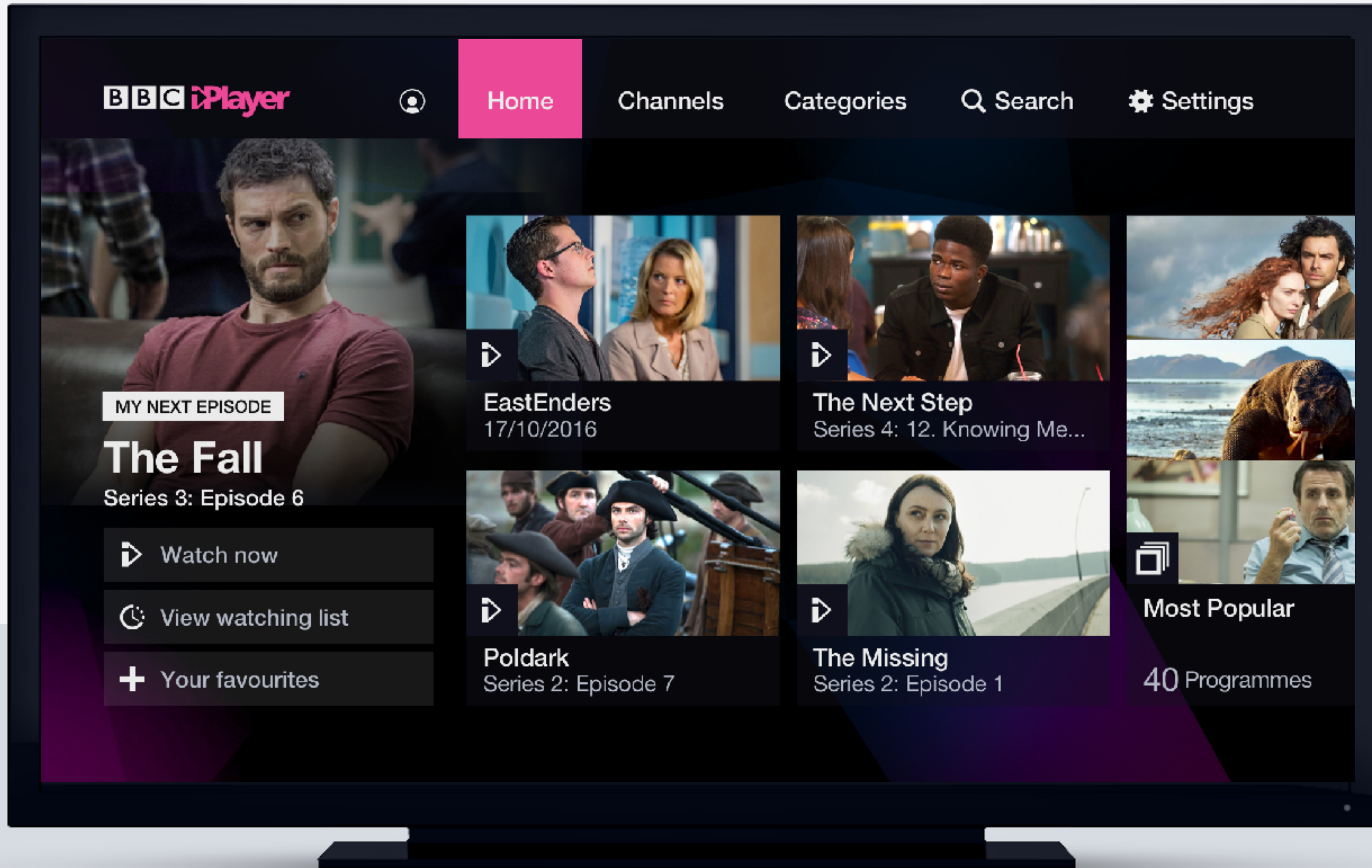
- (1) The BBC shall continue to be a body corporate by the name of the British Broadcasting Corporation.
- (2) The members of the BBC Trust and the Executive Board shall be the members of the Corporation, but membership of the Corporation shall not enable any individual to act otherwise than through the Trust or the Board to which he belongs (see article 8).
- (3) Additional and technical provisions about the BBC's corporate nature and powers are contained in article 47.



01

What's a TV app?





PRESS



BBC

100

Tuesday 11 Sep

⬆️ Kylie Minogue Live in
Hyde Park



News Index 102

Sport Index 300

Weather 400

Travel 430

Lottery Results 555

INDEX 199

Stocks and shares: Get the
latest market data p220

To exit, press TEXT

@verconnell

Presumably someone will remind
Lockwood northern cities
Liverpool Manchester Leeds
Newcastle York all voted Remain

ARE VOTERS TIRED

BBC LOCAL RADIO

Welcome to
BBC Radio Manchester

Press GREEN to hide screen.

Your essential companion
to local life.

News, sport, weather and
travel where you live.

For news, sport, travel,
and weather, press **RED**.

BBC One

Most Popular

Fri 1 (Today)

Thu 31

Wed 30

Tue 29

Mon 28

Sun 27

Sat 26

Fri 25

EastEnders



31/03/2011

Waterloo Road

Would I Lie To You?

Crimewatch

Question Time

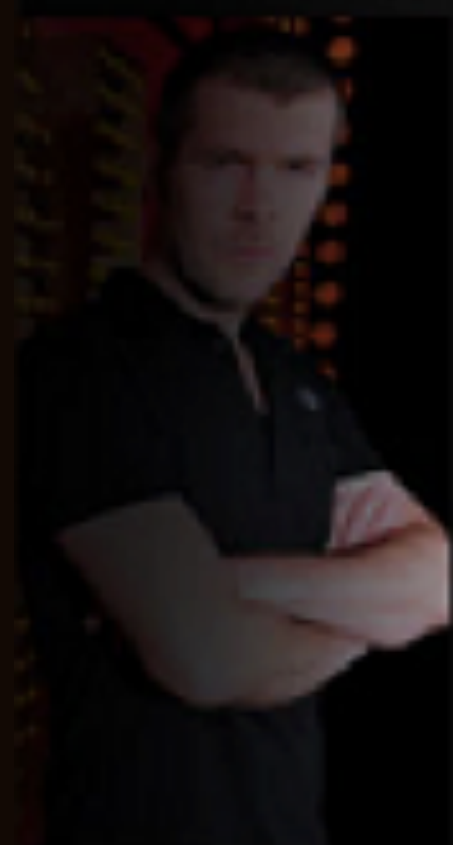
MasterChef

● Home

● Help

● Back

● Search



Eastenders
20/02/2012



Top Gear
28/12/11



Doctor Who
The Doctor, The Widow and the...



Casualty
25/12/11...



Russell Howard's...
29/12/11



CHANNELS SEARCH LAST PLAYED **FEATURED** MOST POPULAR FAVOURITES FOR

TV Radio

Help Settings Exit



MY NEXT EPISODE

The Fall

Series 3: Episode 6

Watch now

View watching list

Your favourites



EastEnders
17/10/2016



The Next Step
Series 4: 12. Knowing Me...



Poldark
Series 2: Episode 7

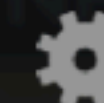


The Missing
Series 2: Episode 1



Most Popular

40 Programmes



4 hours ago



Watch: WSL leaders Arsenal and Man City both...

Women's Football

LIVE



Watch: Tennessee Titans v Los Angeles Chargers

American football

LIVE



Watch pool: IPA Tour 5 - British Open

Other Sports



Back to

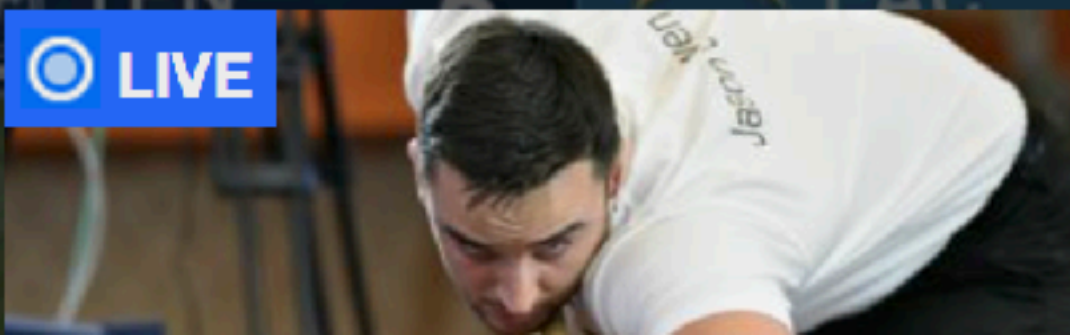
Tennessee Titans v Los Angeles Chargers

Live Sport

LIVE



LIVE



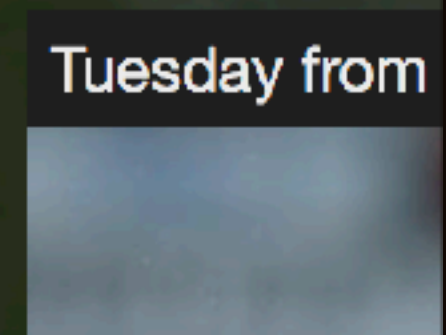
LIVE



Today from 18:00



Tuesday from



Tory MPs oppose fishing policy extension

🕒 2 hours ago | Scotland politics

Scottish Conservatives could vote down a Brexit deal if it included extending the Common Fisheries Policy (CFP).

The policy sets out fishing rules across the EU to manage fish stocks and fleets by setting quotas.

Moray MP Douglas Ross said Scotland's 13 Conservative MPs would not support a deal that included staying part of the CFP beyond 2020.

His concerns follow indications that the policy could be extended to allow more time for a final Brexit deal.



☰
Primark fire a 'turning point' for...

🕒 10 hours ago | Northern Ireland




☰
Man loses part of ear in 'nasty' attack

🕒 3 hours ago | Wiltshire



☰
Stolen church steeple to replace...


🕒 16 hours ago




Mayans M.C.
Series 1: 1. Perro / Oc



La La Land



Jerk
Series 1: Episode 1



The Greatest Da
Series 1: Episode

Continue watching...



Resume
Louis Theroux
Behind Bars



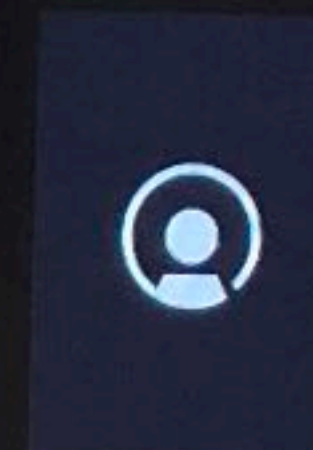
Resume
The Artist



Resume
Bodyguard
Series 1: Episode 6



Resume
Killing Eve
Series 1: 1. Nice Face



David

Box Sets



Killing Eve
Series 1: 1. Nice Face



Bodyguard
Series 1: Episode 1



Two Pints of Lager and
Series 1: 1. Fags, Shags a...



The Long Song
Series 1: Episode 1




Outnumbered
Series 1: Episode 1



Inside
Series

Most Popular

Press green  to watch from start

BBC
iPlayer

Featured



TV+PLUS

BBC
iPlayer

BBC
NEWS

BBC
SPORT

itv



my5

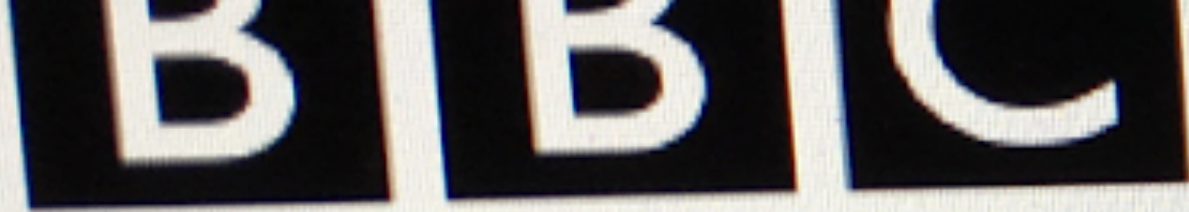
NOW TV

NETFLIX


prim

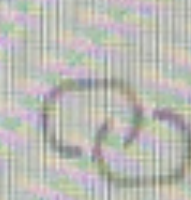
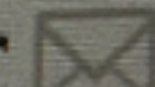
02


Bet on TV





Open source code used on public facing serv

 London

 <http://www.bbc.co.uk/opensc>  a

 **Repositories** 6,570

 **People** 1,428

 **Teams** 2

oplayer for tv

14 results for repositories matching **oplayer for tv**

BBC Television Certification





..... TV
Application
LAYER

UI
BUILDER

COMPONENTS

WIDGETS

ABSTRACTIONS

LIFECYCLE

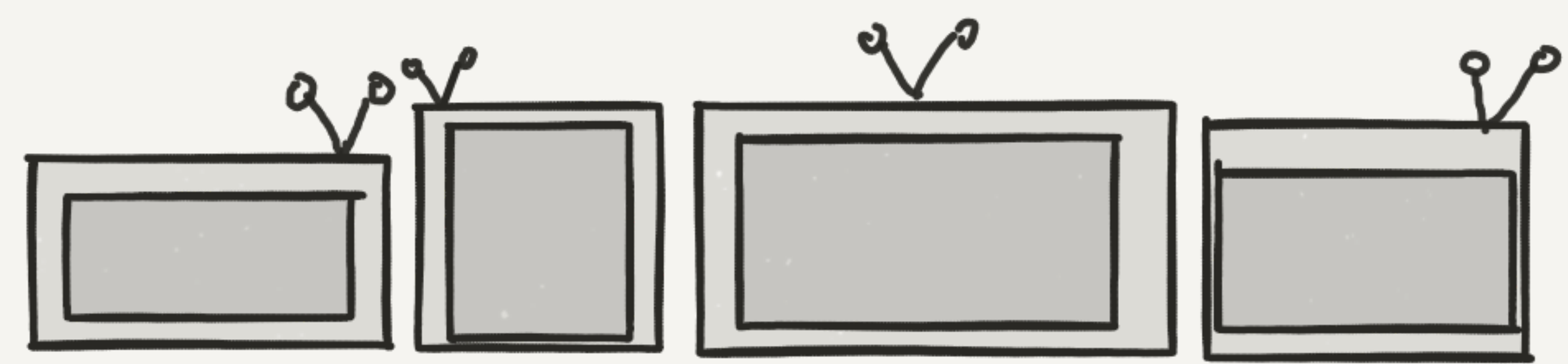
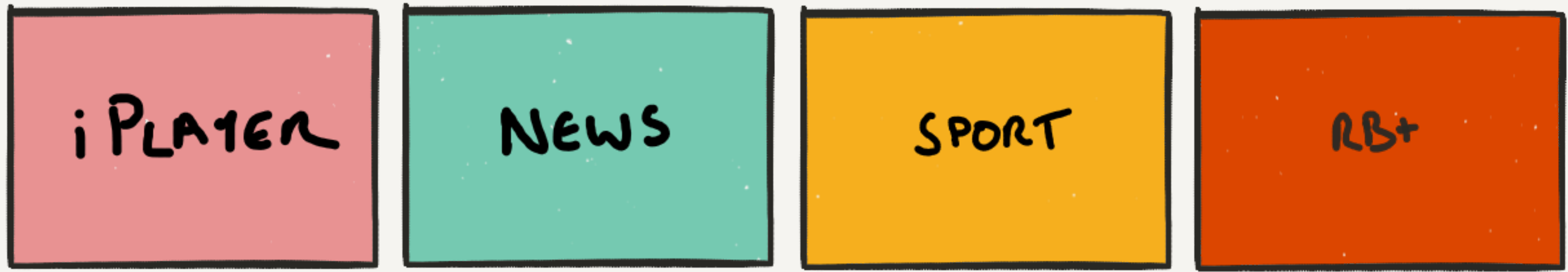
VIDEO
PLAYBACK

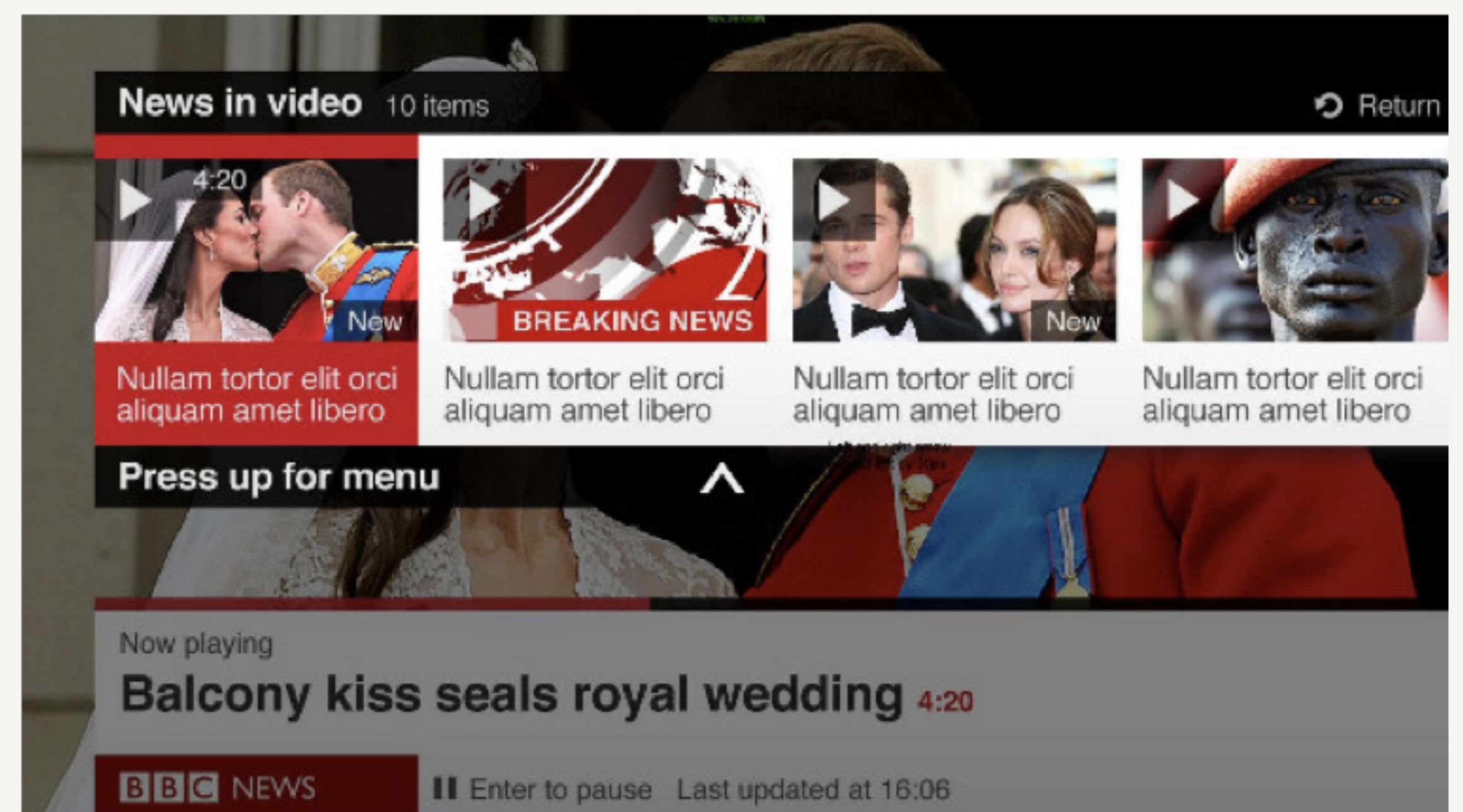
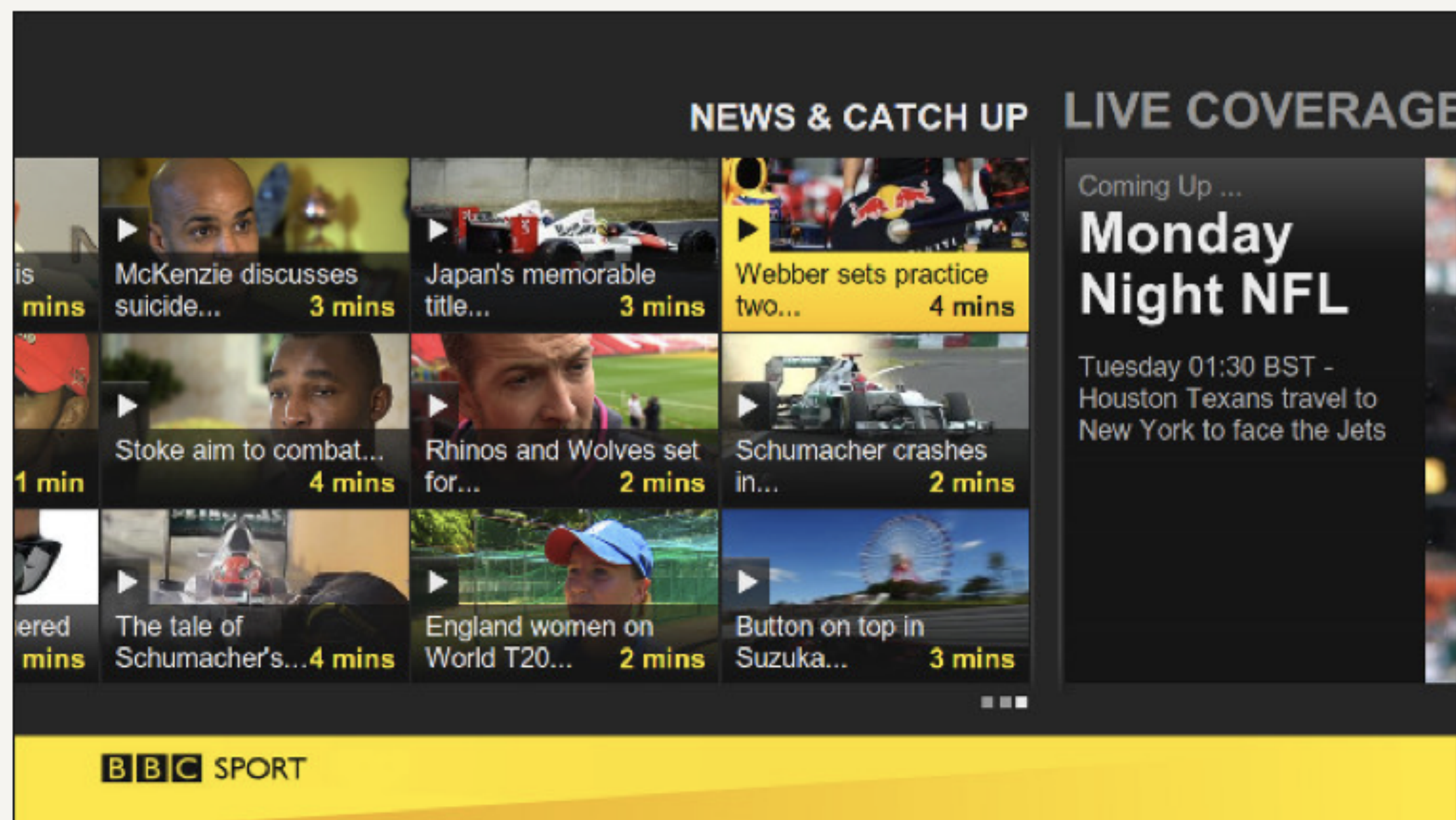
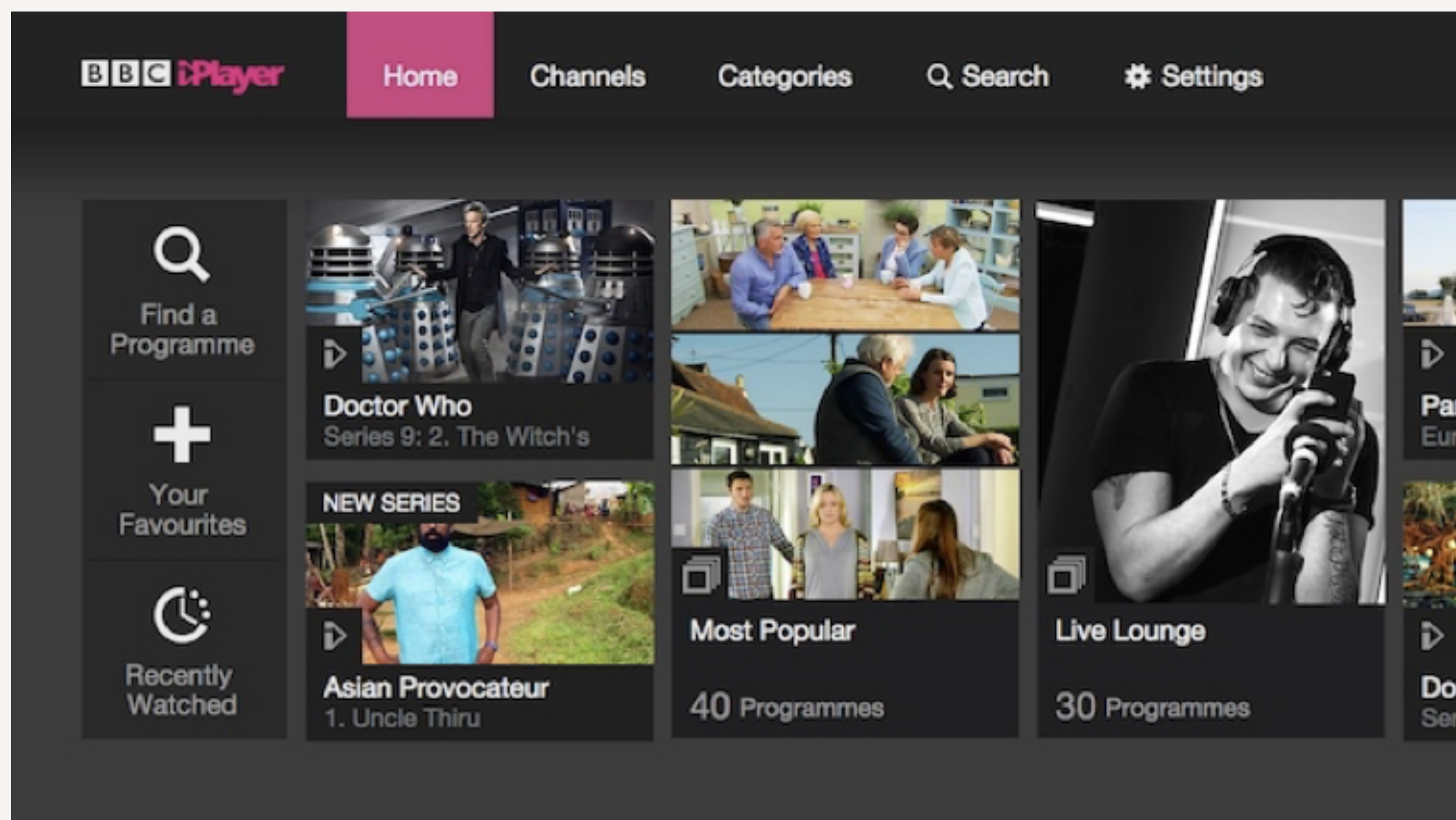
KEYBINDING

DOCTYPE

ANIMATION

NETWORKING







Search or jump to...



Pull requests

Issues

Marketplace

Explore



bbc / tal

Unwatch

150

★ Unstar

482

Fork

139

Code

Issues 48

Pull requests 2

Projects 0

Insights

Settings

TV Application Layer <http://bbc.github.com/tal>

Edit

javascript

tv-applications

Manage topics

README.md



TAL -- TV Application Layer

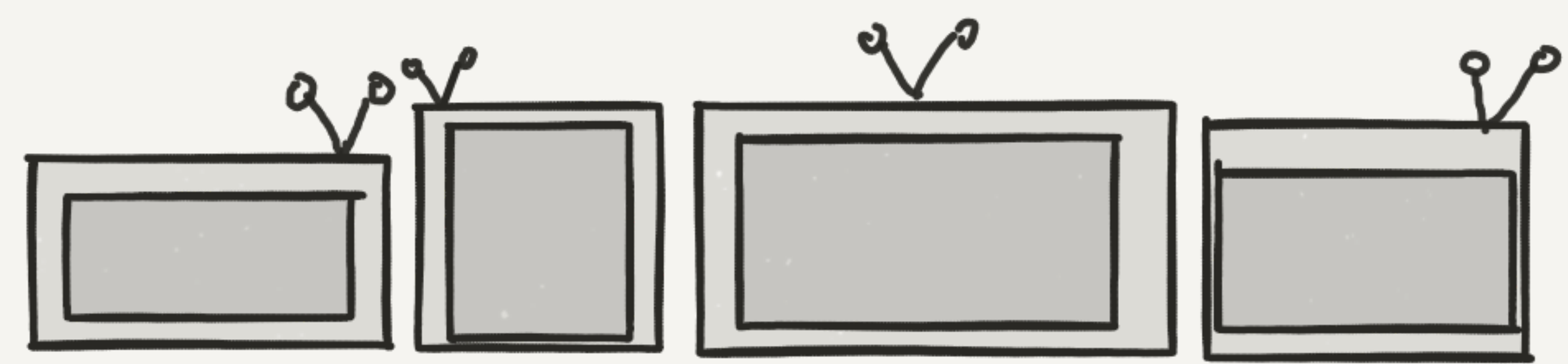
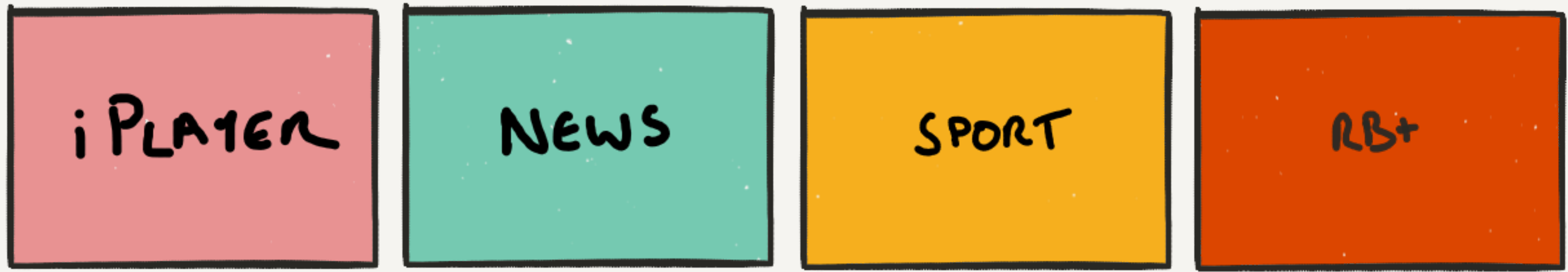


build

passing

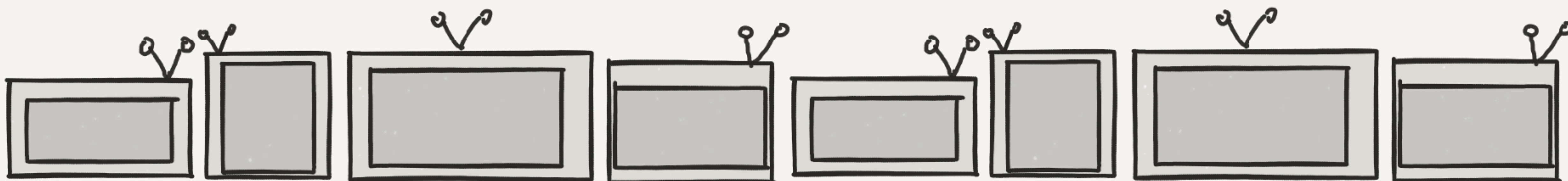
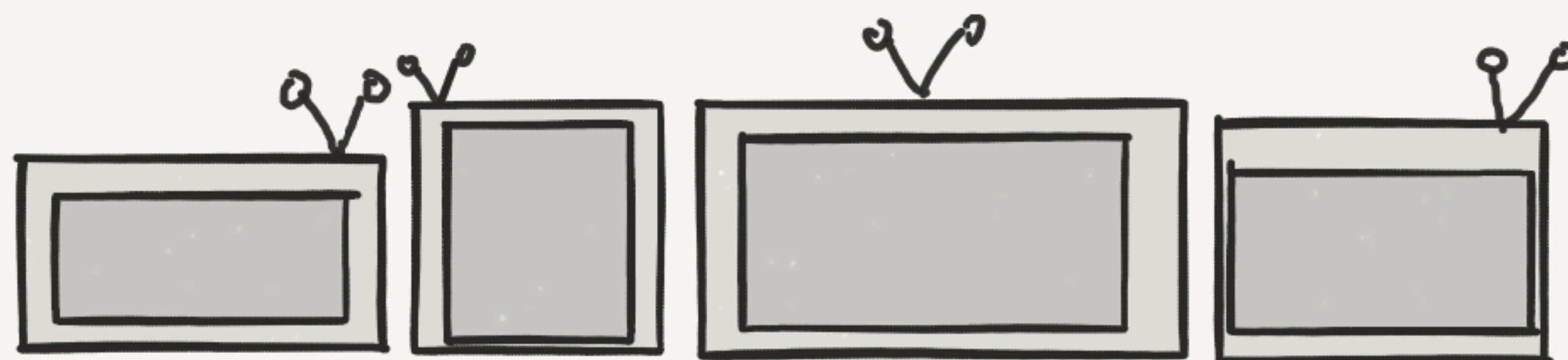
npm package

10.0.0



03

The TV Platform



iPLAYER

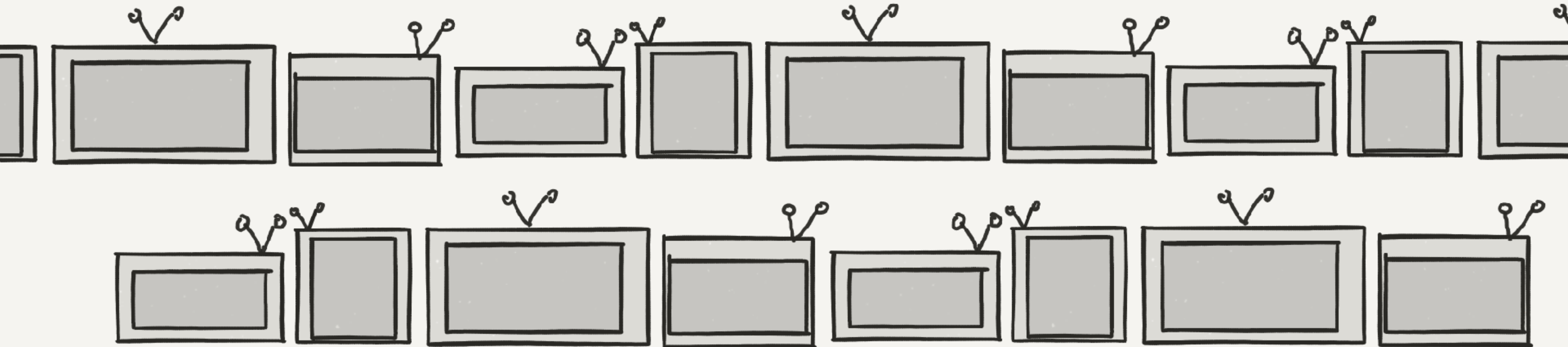
NEWS

SPORT

RB+

T.A.P.

T.A.L.

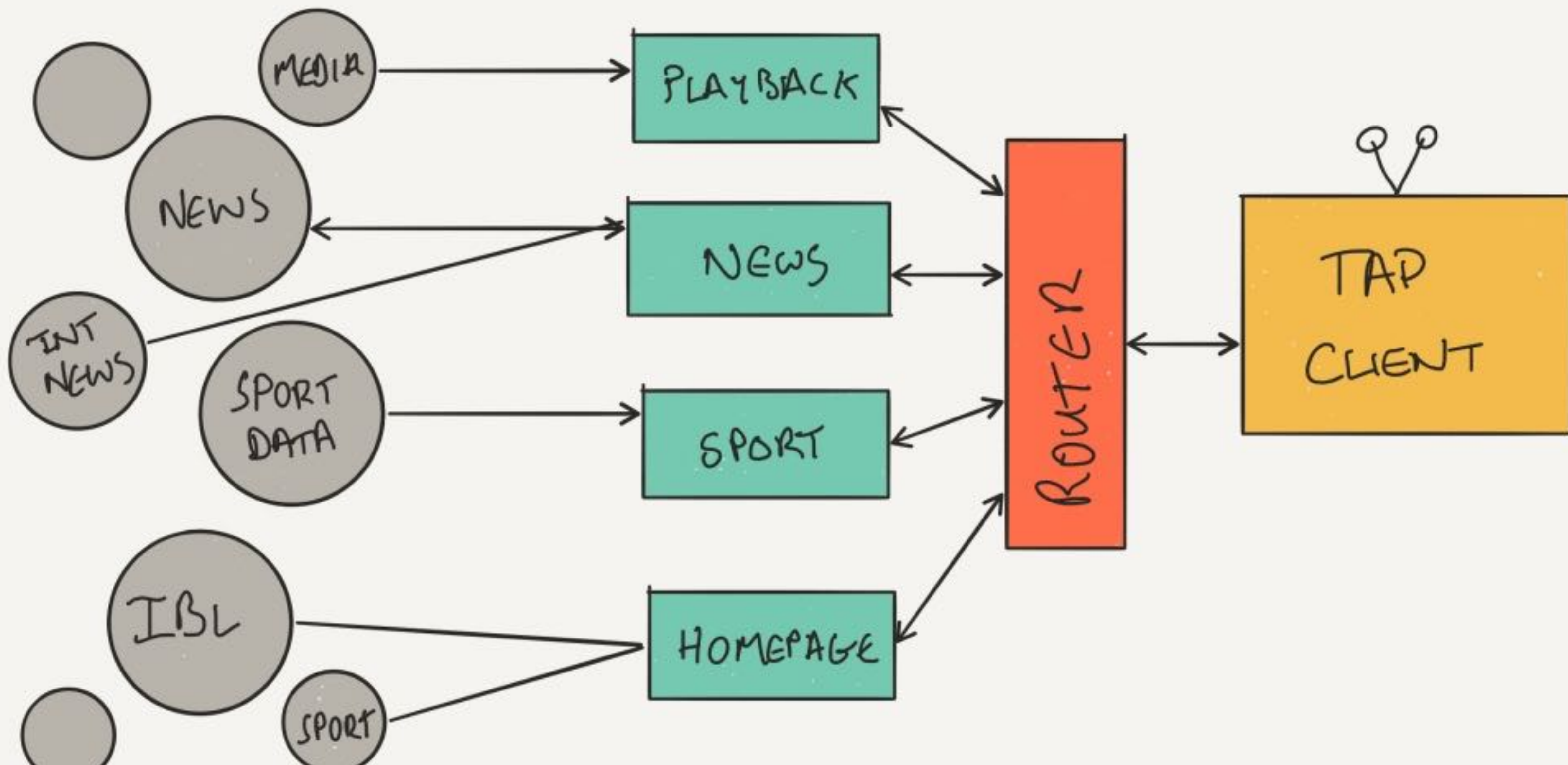


Technical Principal S.01

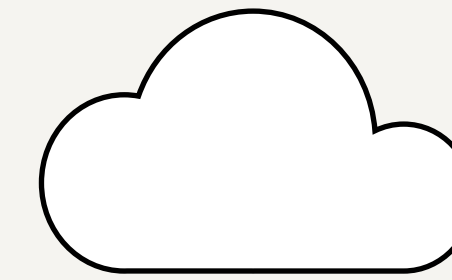
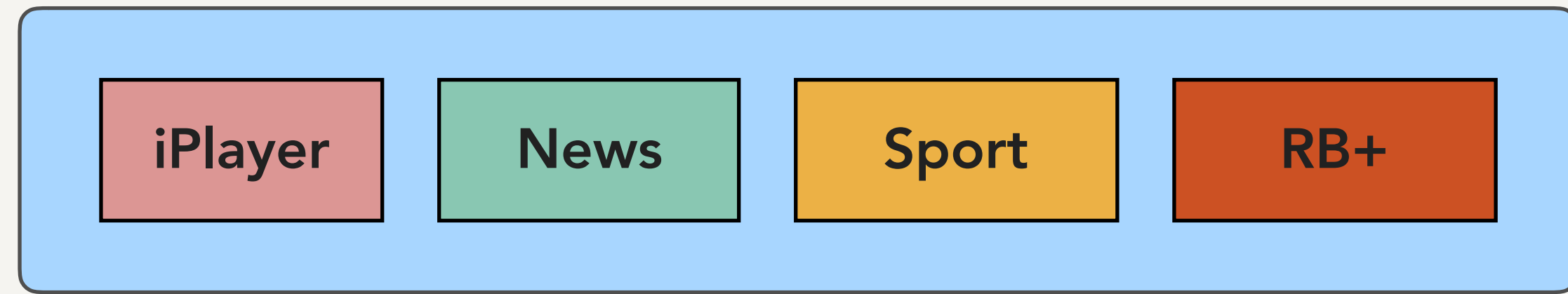
The logic for our products and systems is executed in the most consistent runtime environment available, avoiding the need for runtime abstraction and logical duplication wherever possible.

BBC DATA

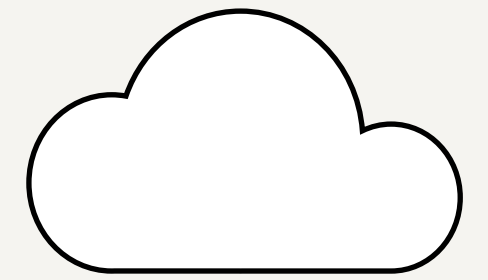
MOUNTAINS



TAP Client

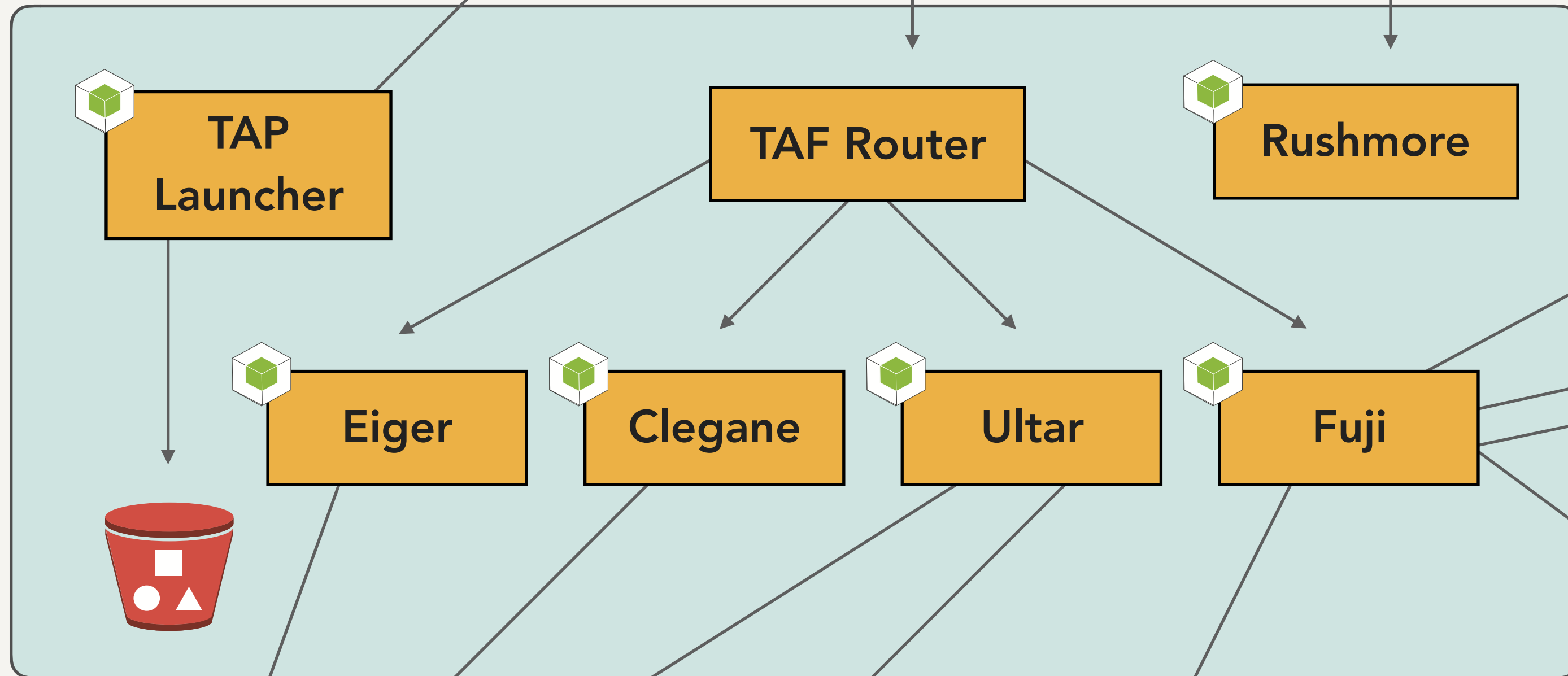


Media
Selector

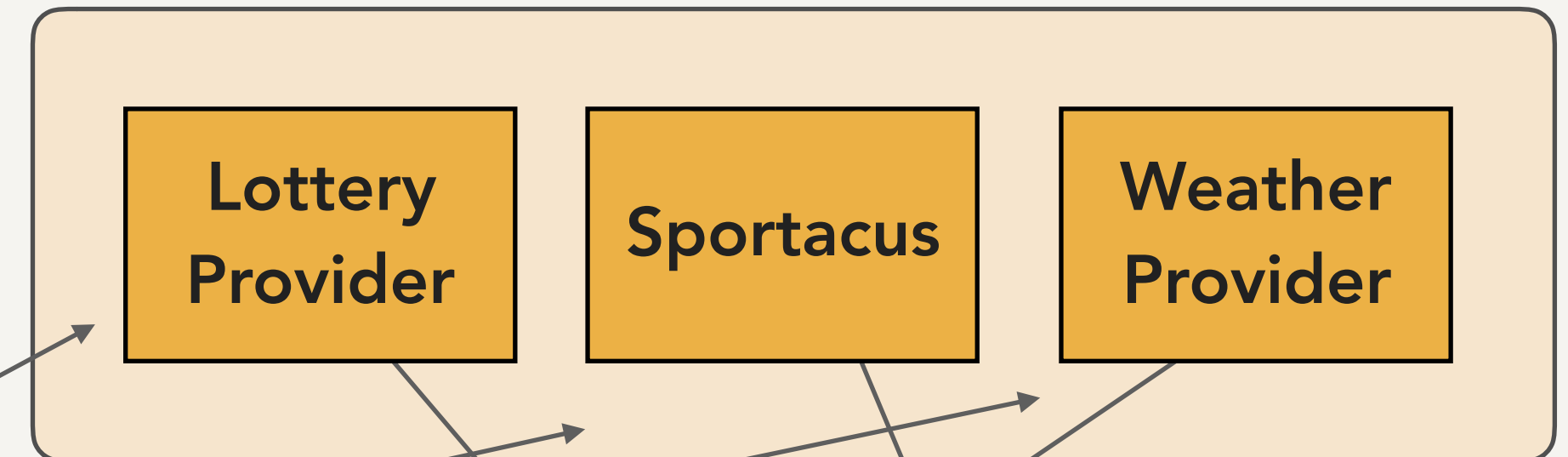


CDNs

Amazon Web Services



On Premise Data Centres



iPlayer Business Layer

MVT Provider

Programme
Metadata

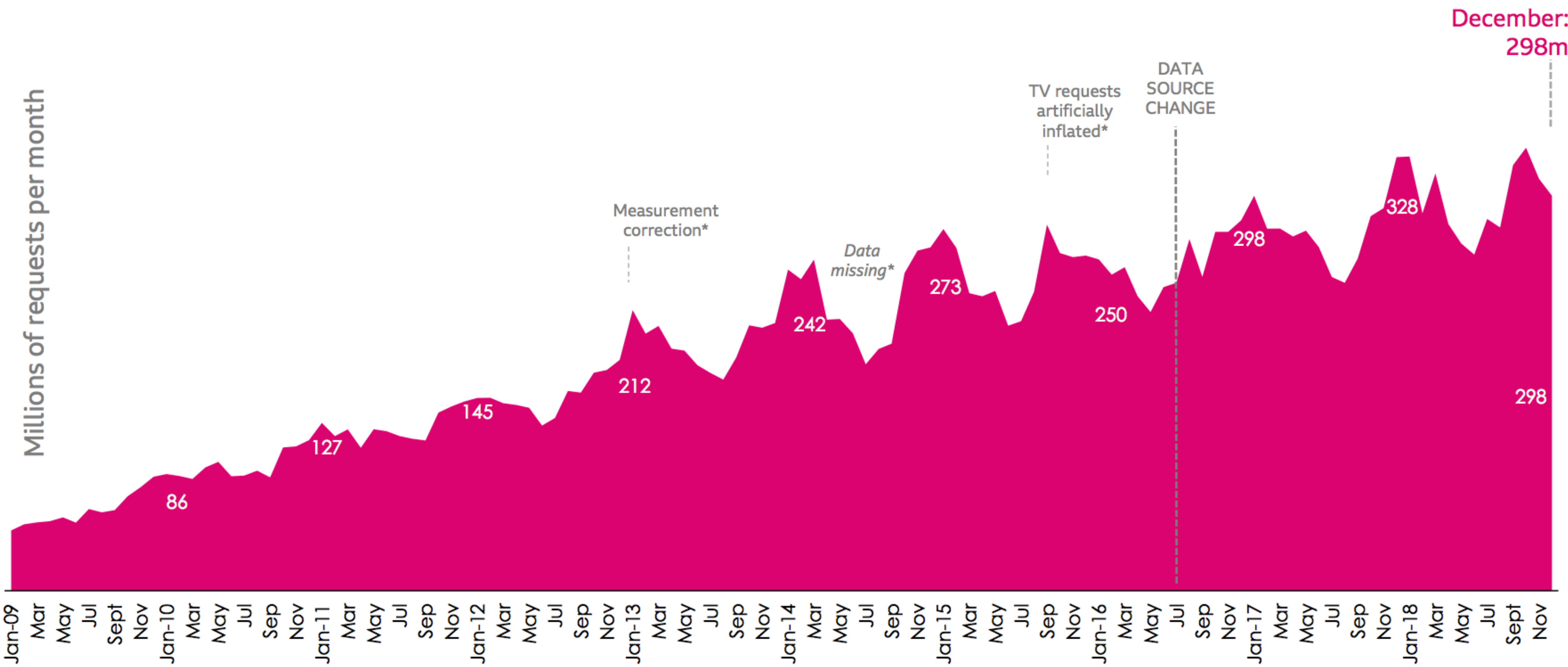
Location Services

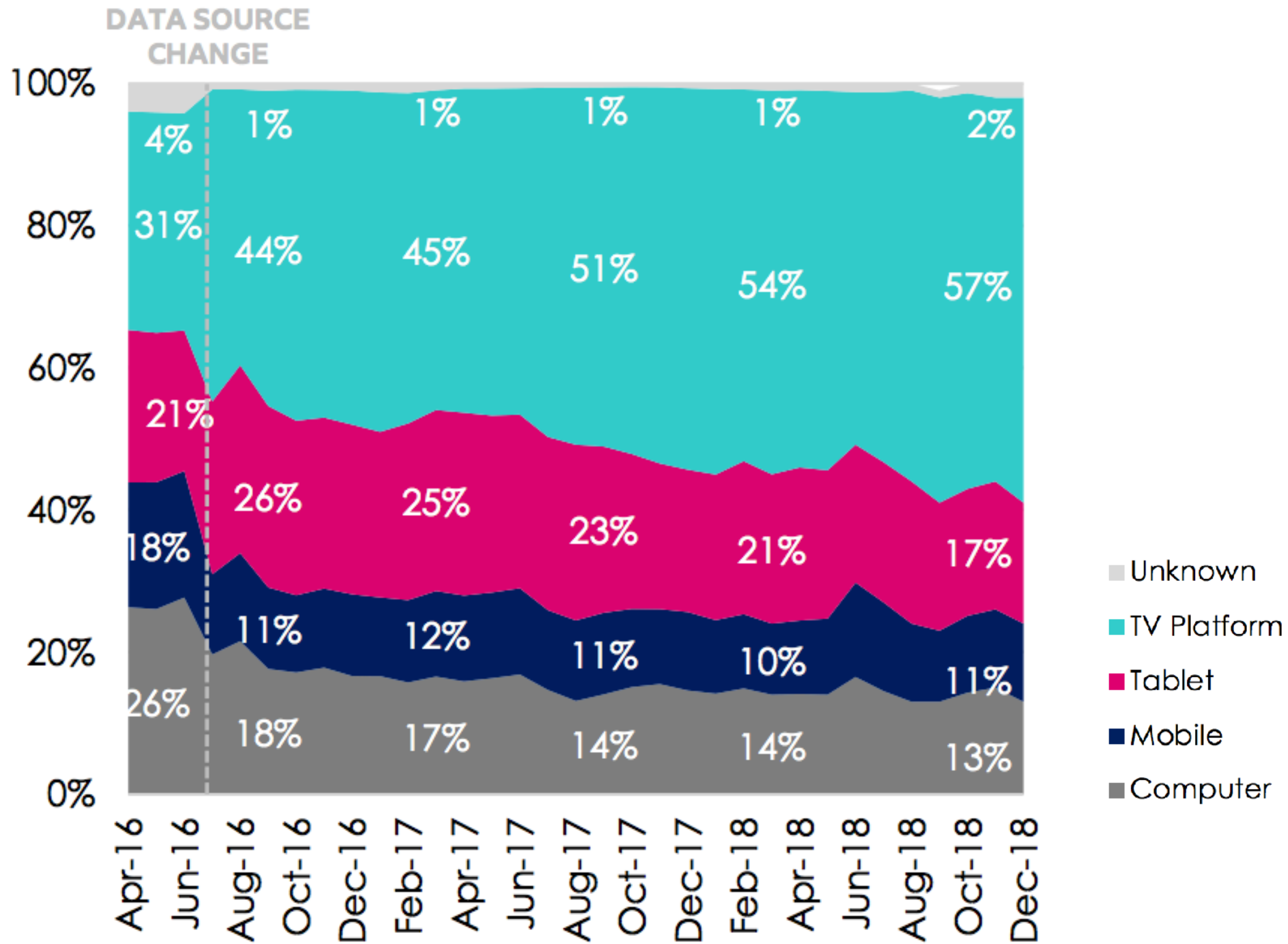
Publishing
Store

Partners

04

TV Takes the Lead





Tenets:

1. Where possible we use off the shelf libraries
2. Performance must be improved
3. We can't start from scratch

1. Capability

2. Performance

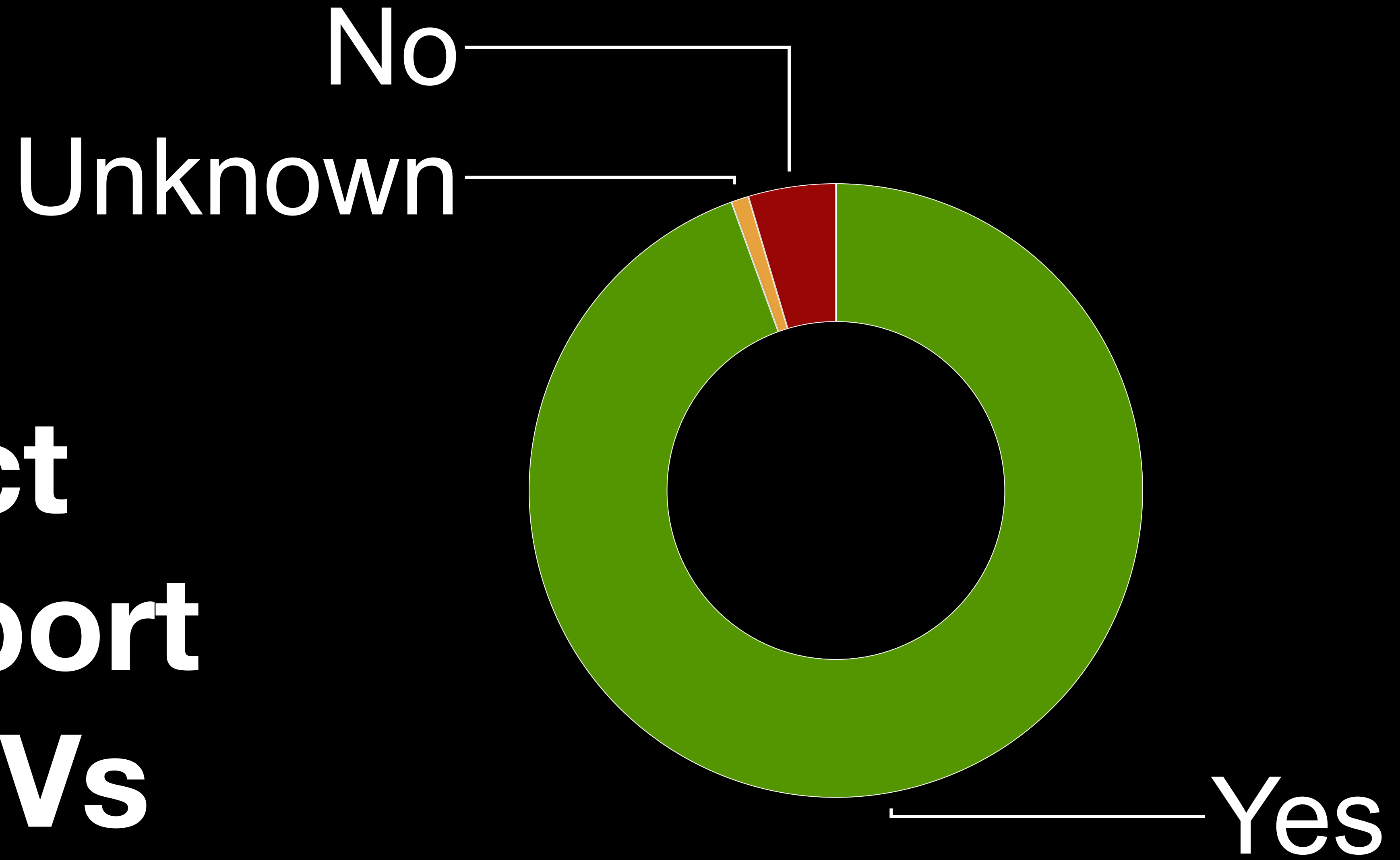
1. Capability

2. Performance

BBC iPlayer

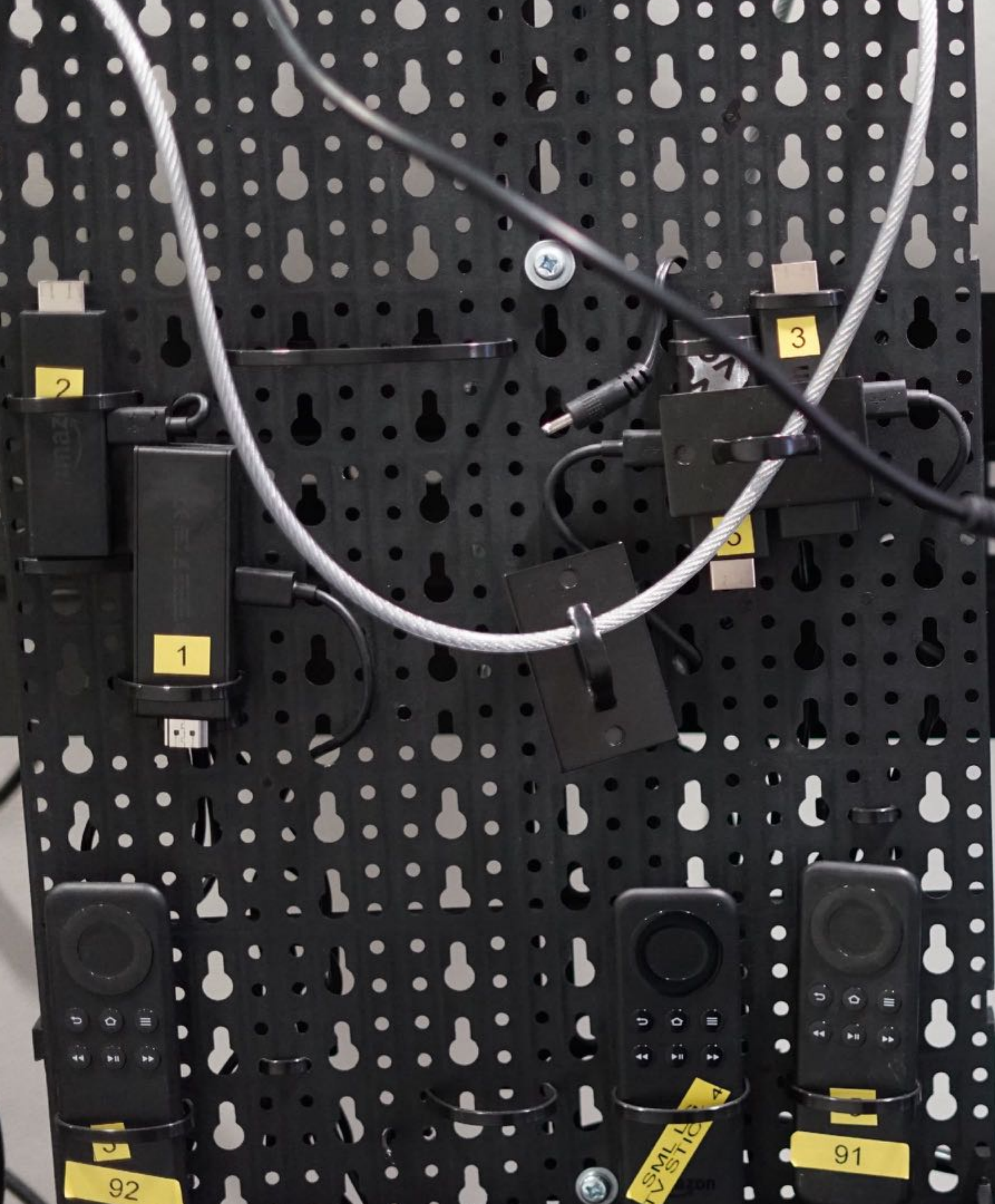
LOADING

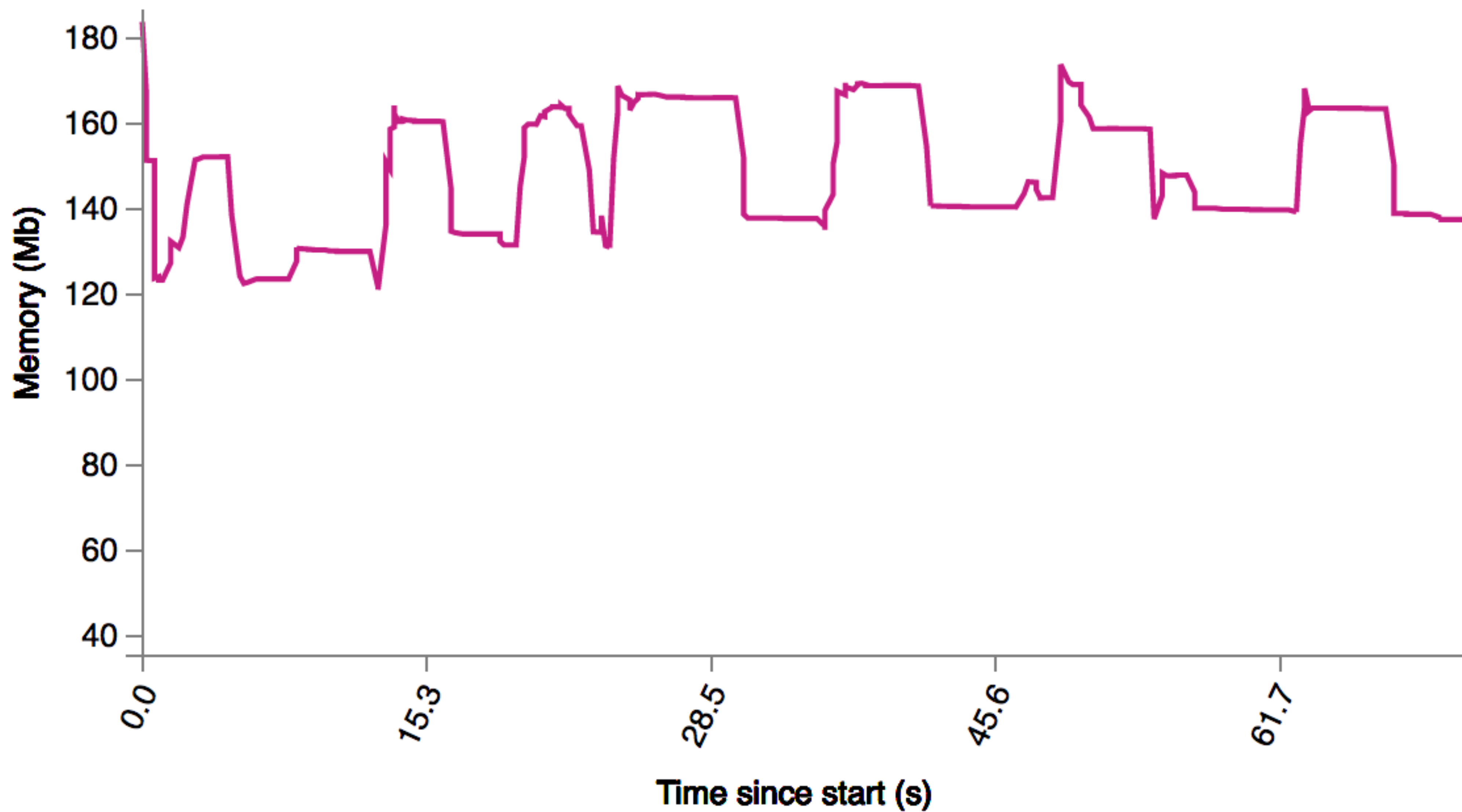
React Support On TVs

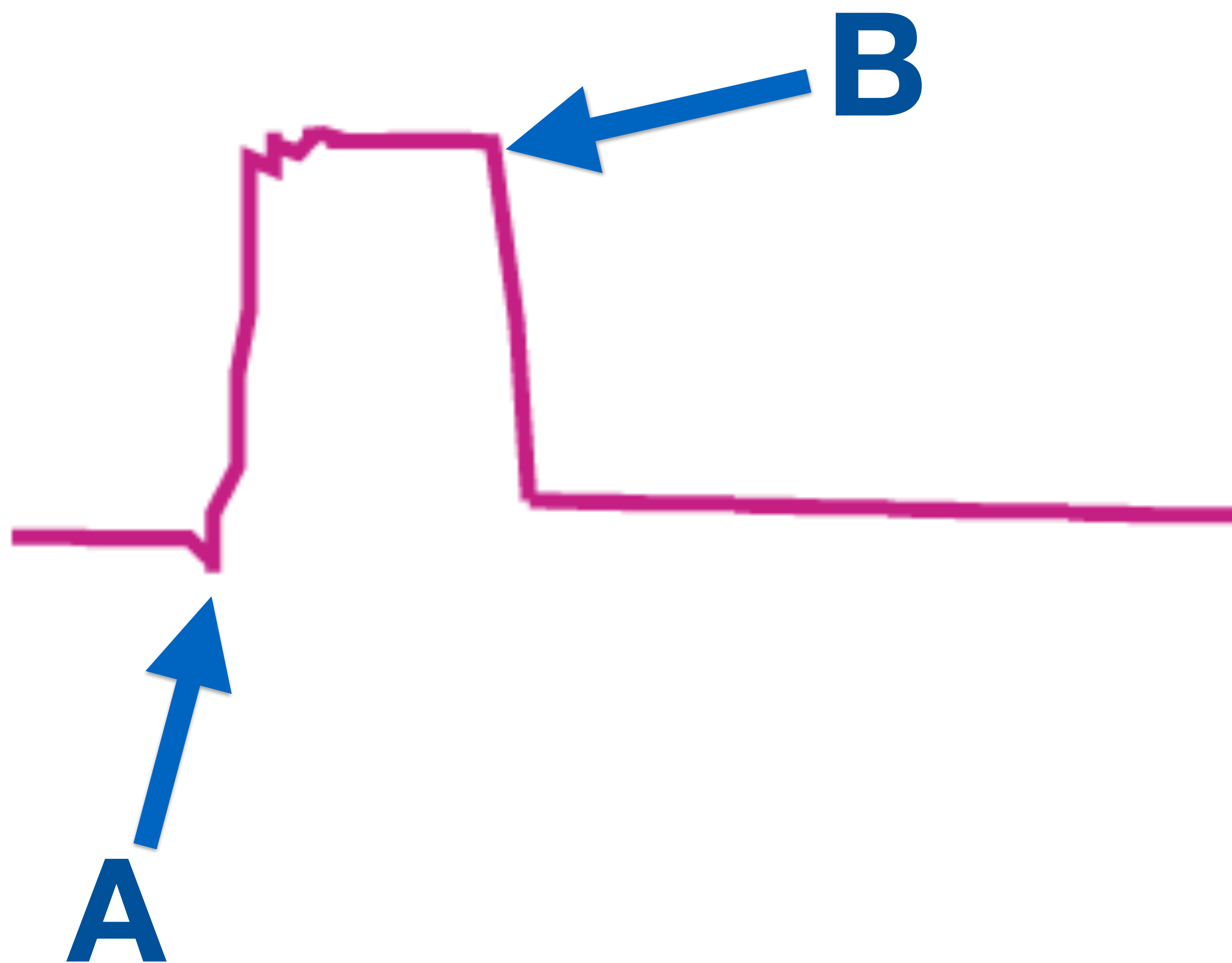


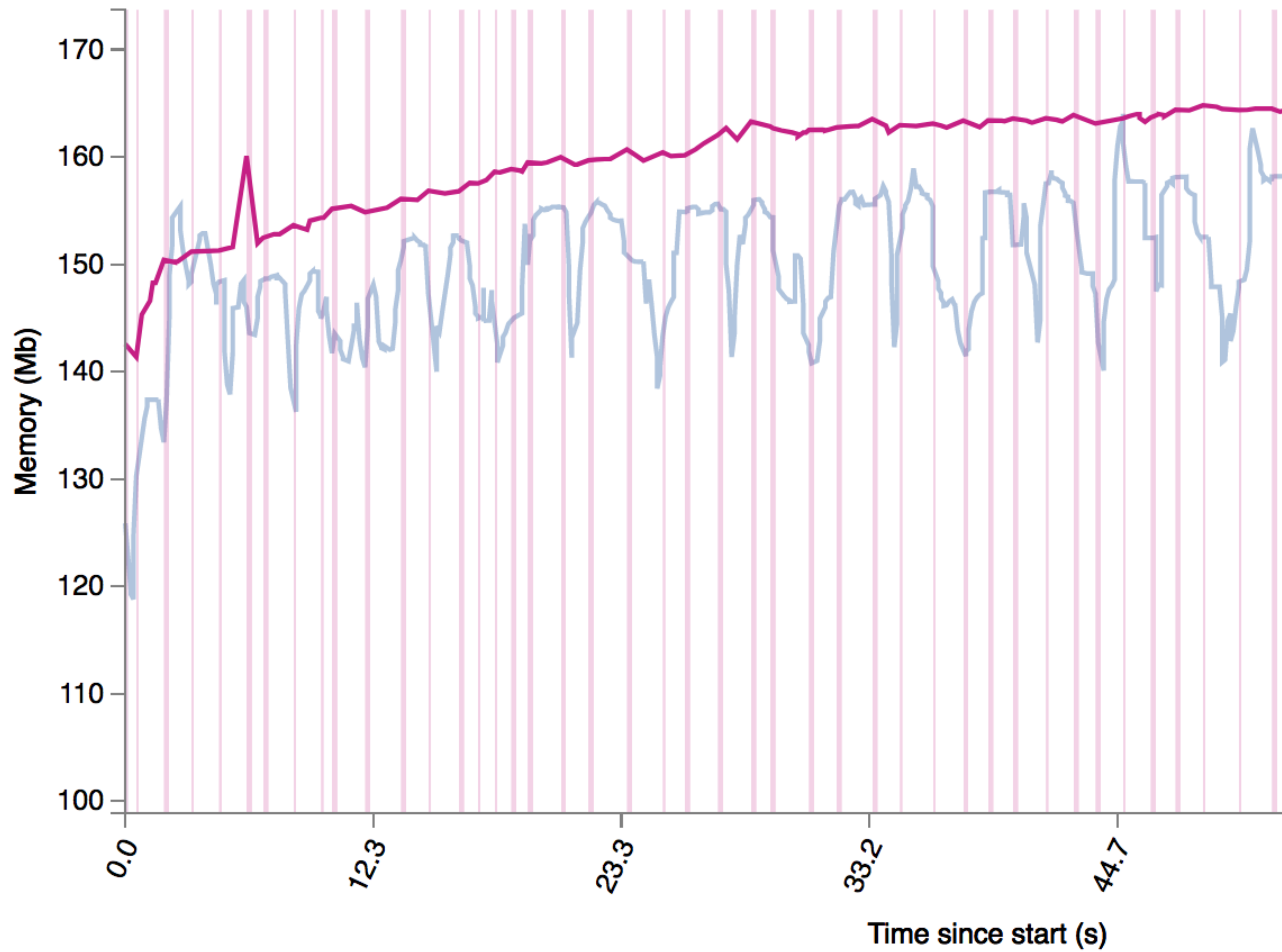
1. Capability

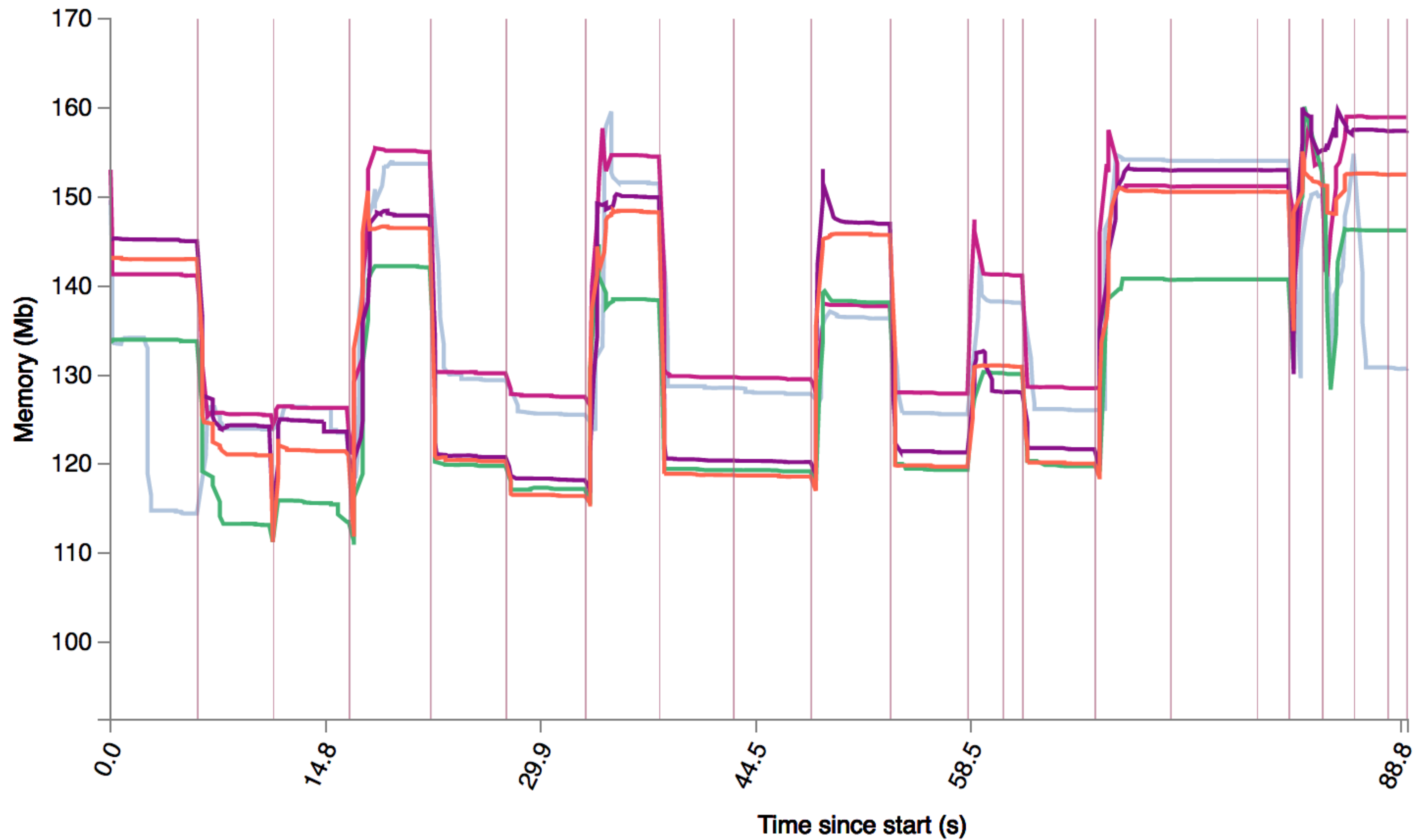
2. Performance

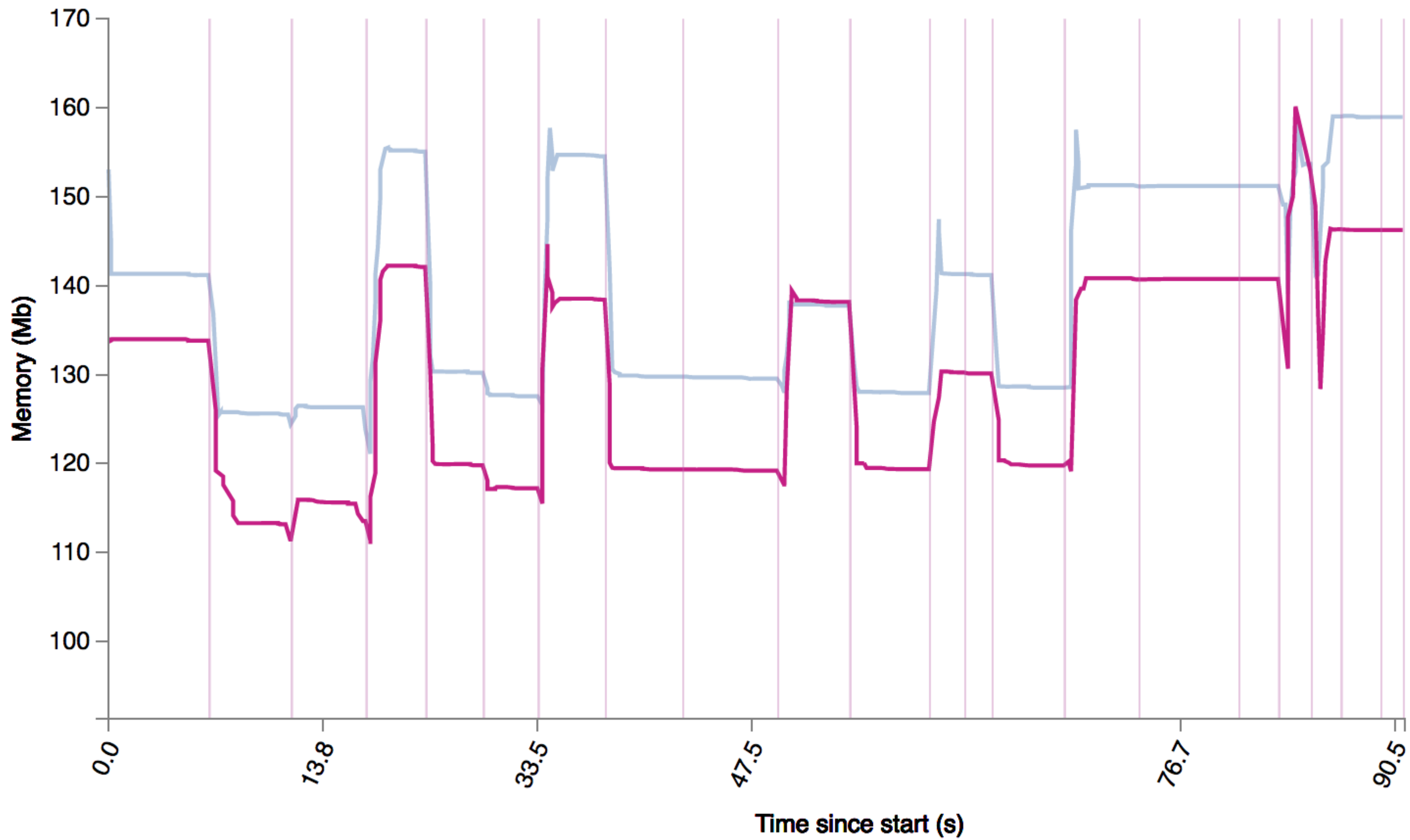


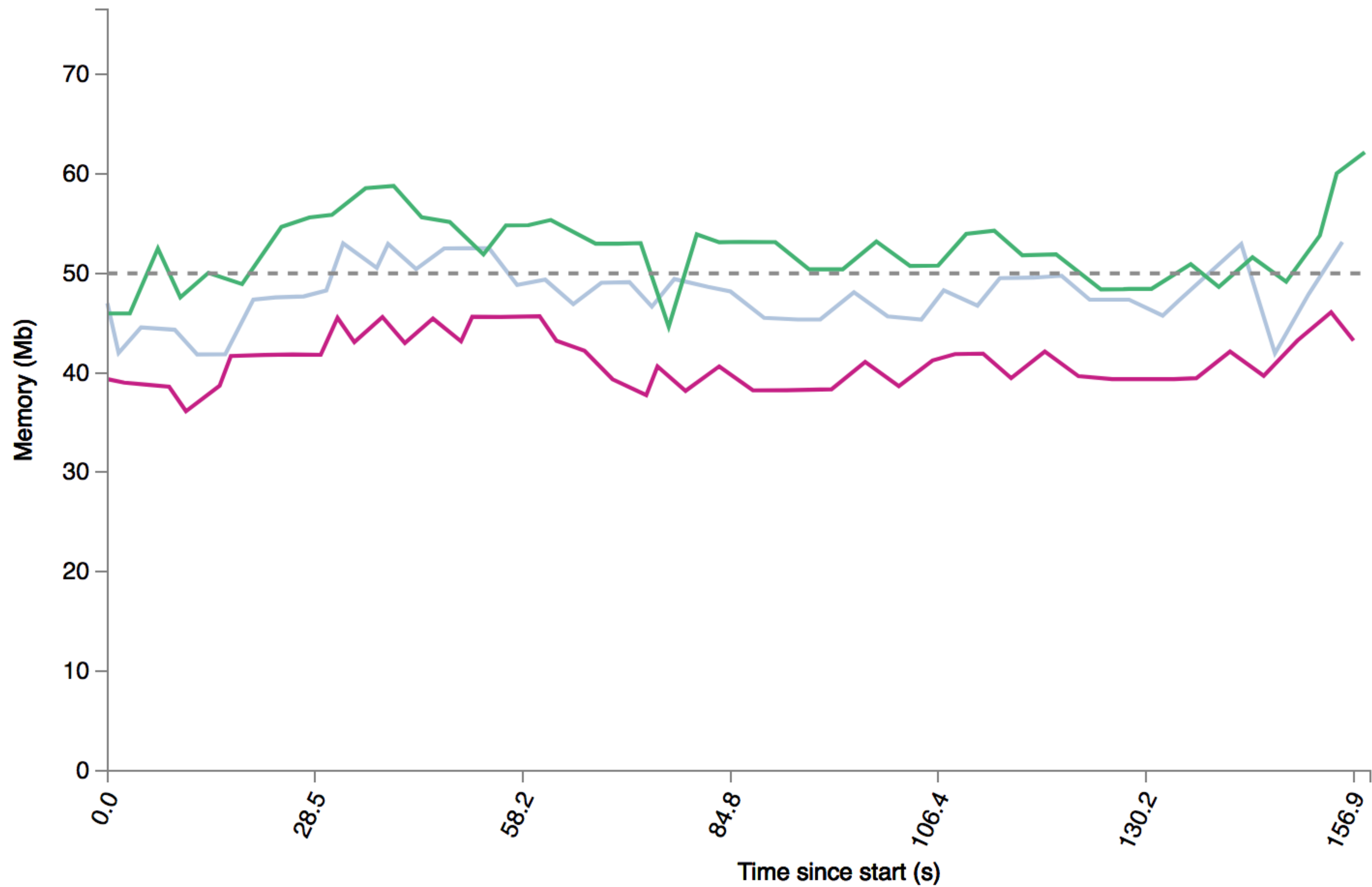


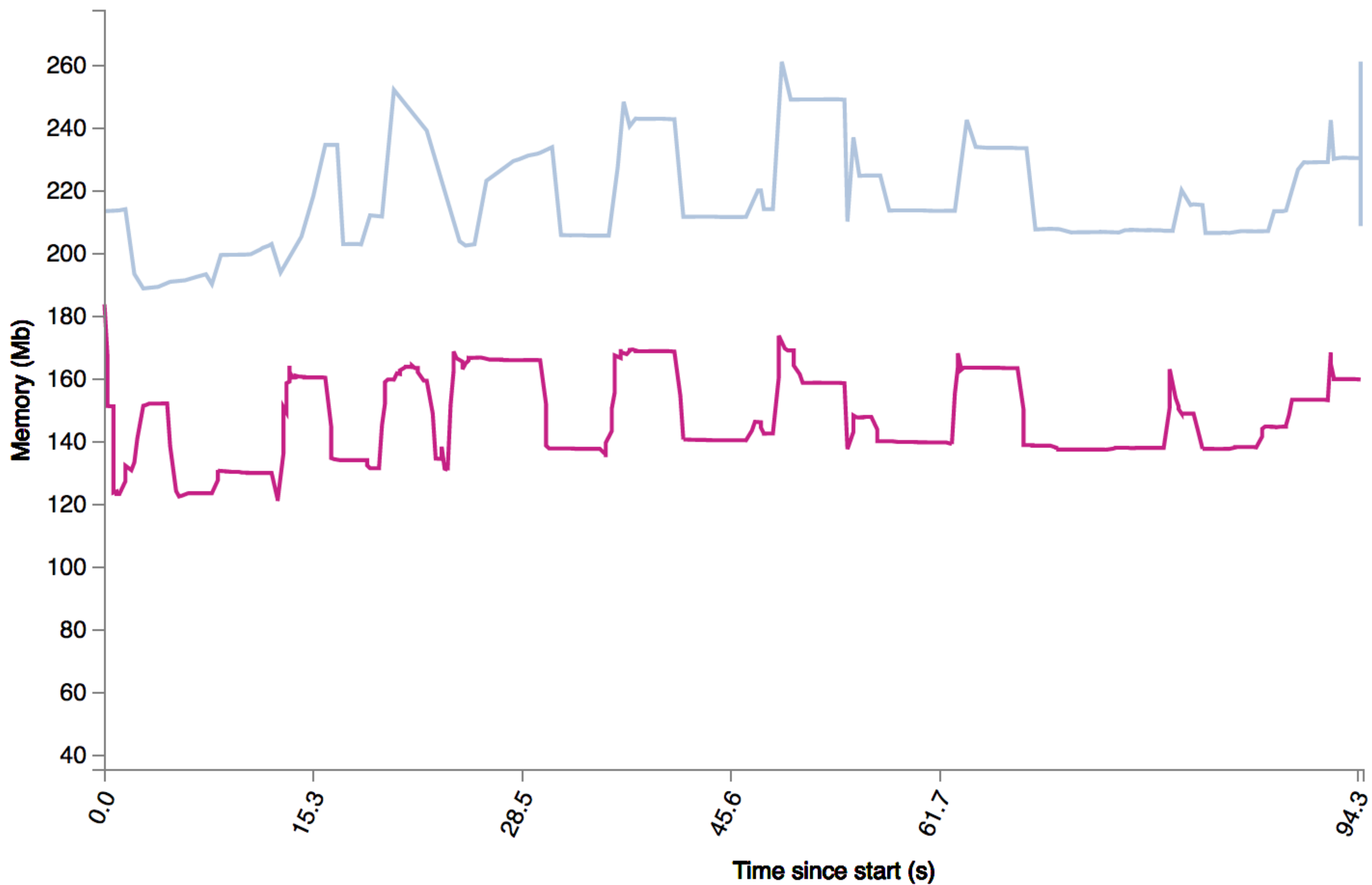




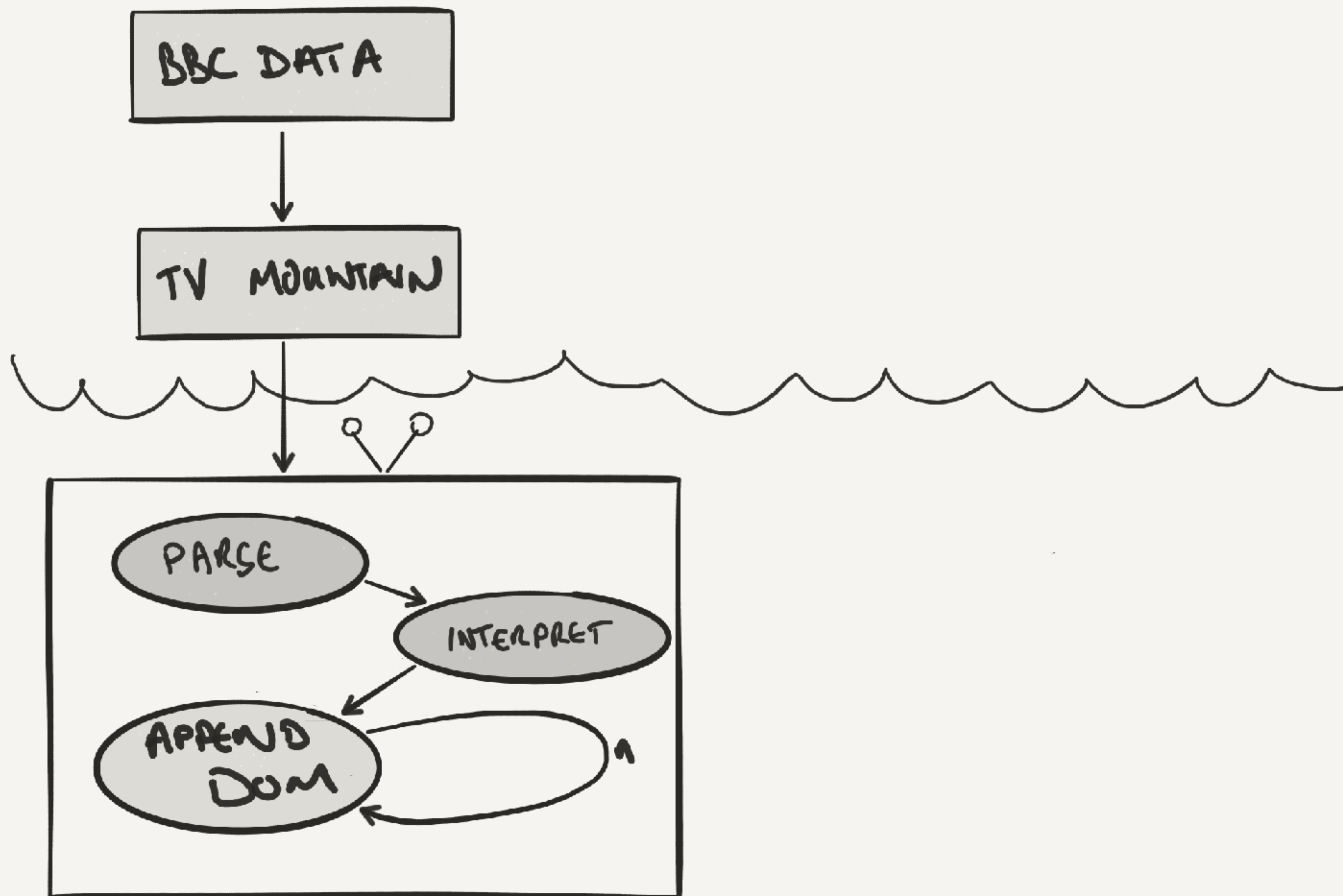


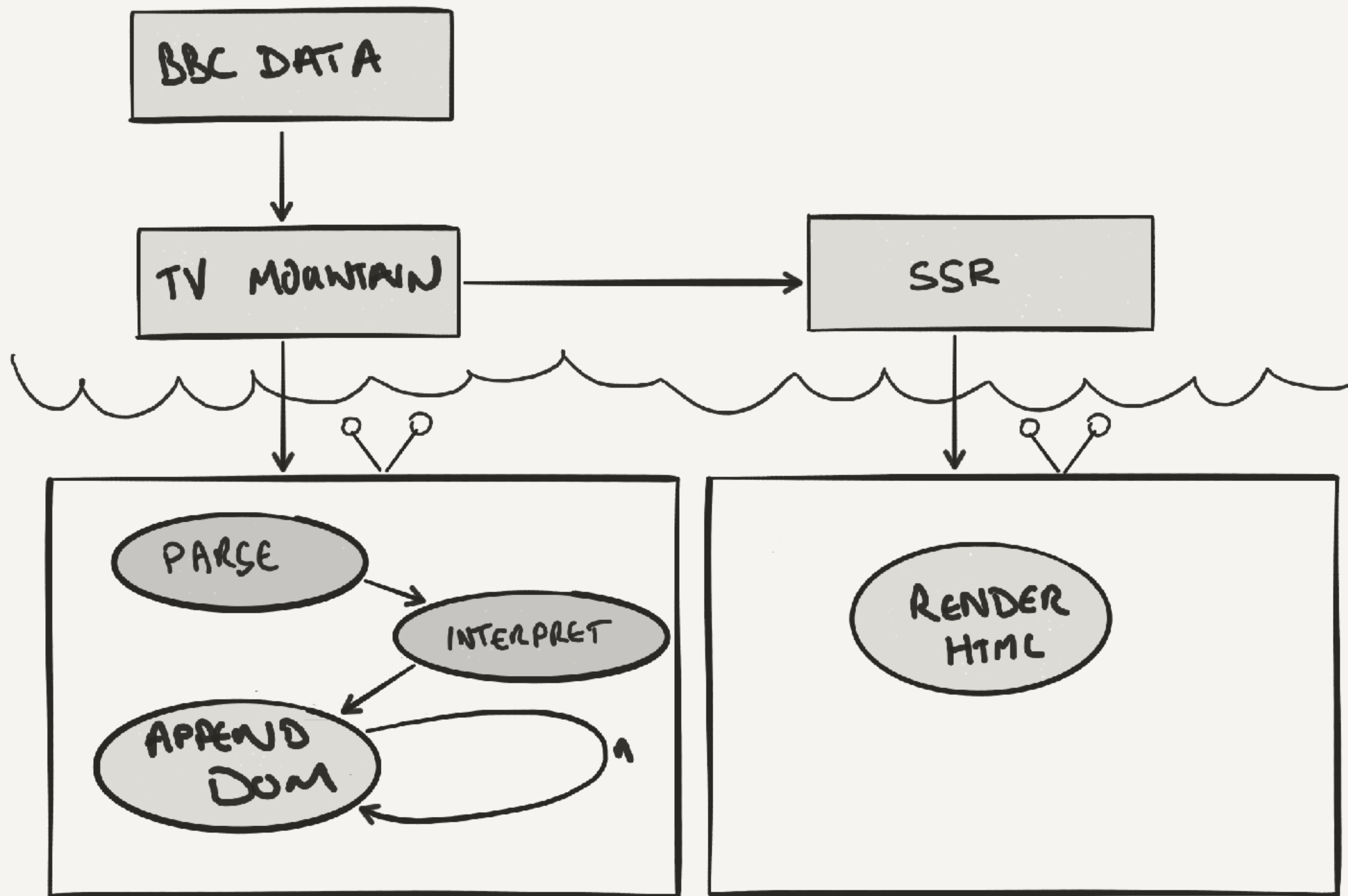


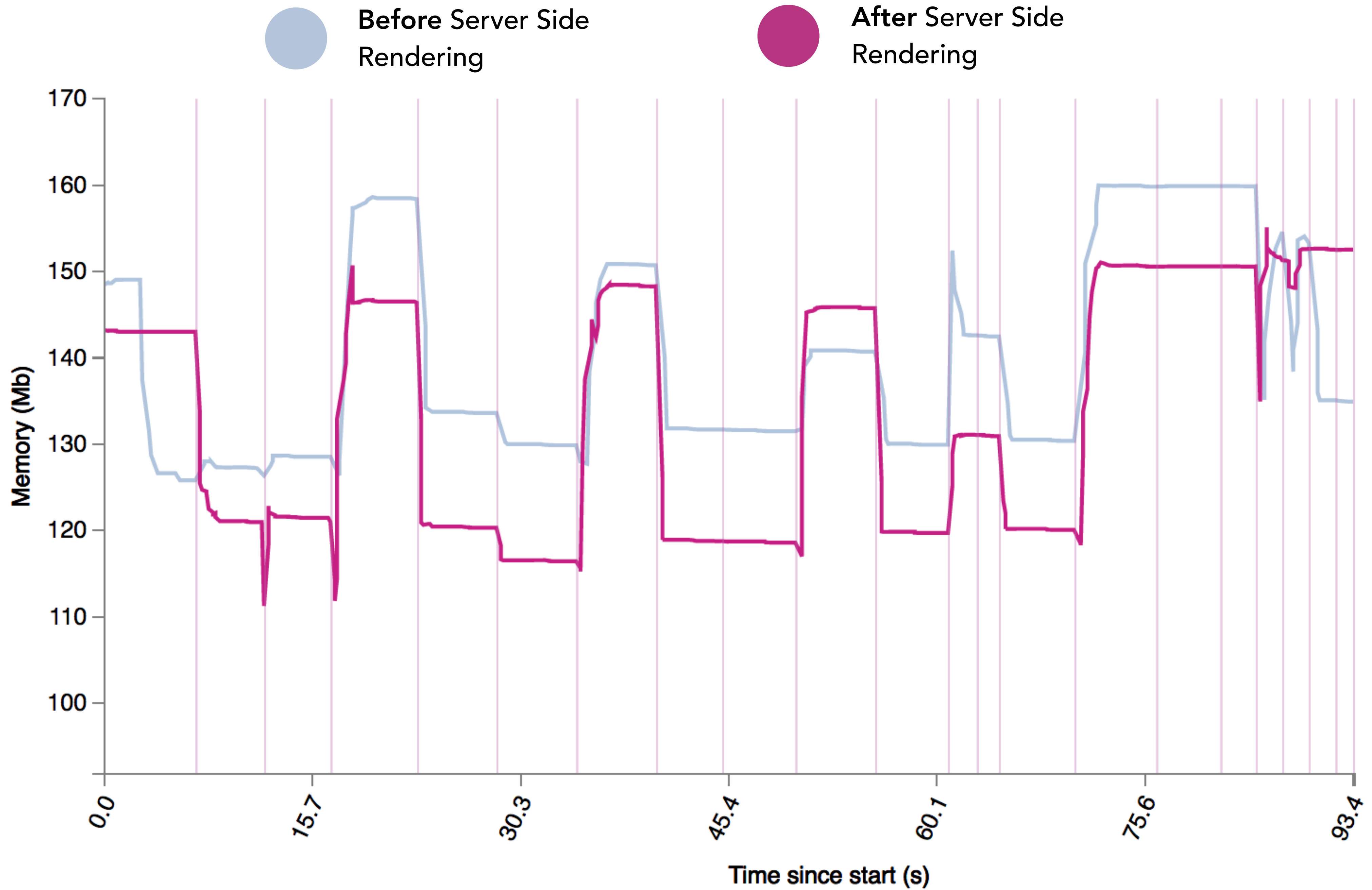




1. Number of images
2. Processing json & constructing UI
3. Video in the background
4. Going purple







05

Learning from failure

BBC iPlayer

LOADING

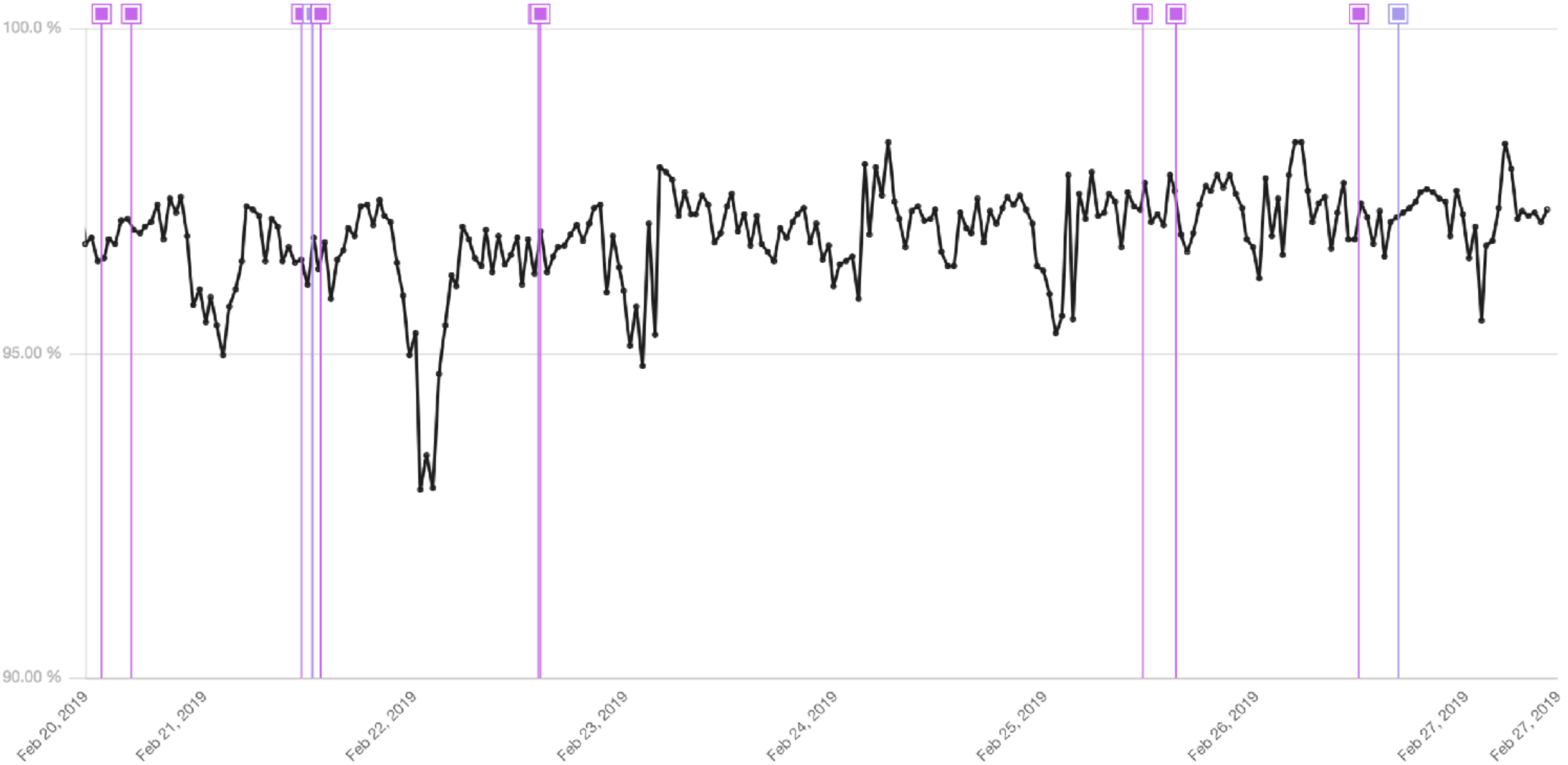
PERCENTAGE SUCCESSFUL APP LAUNCHES *  

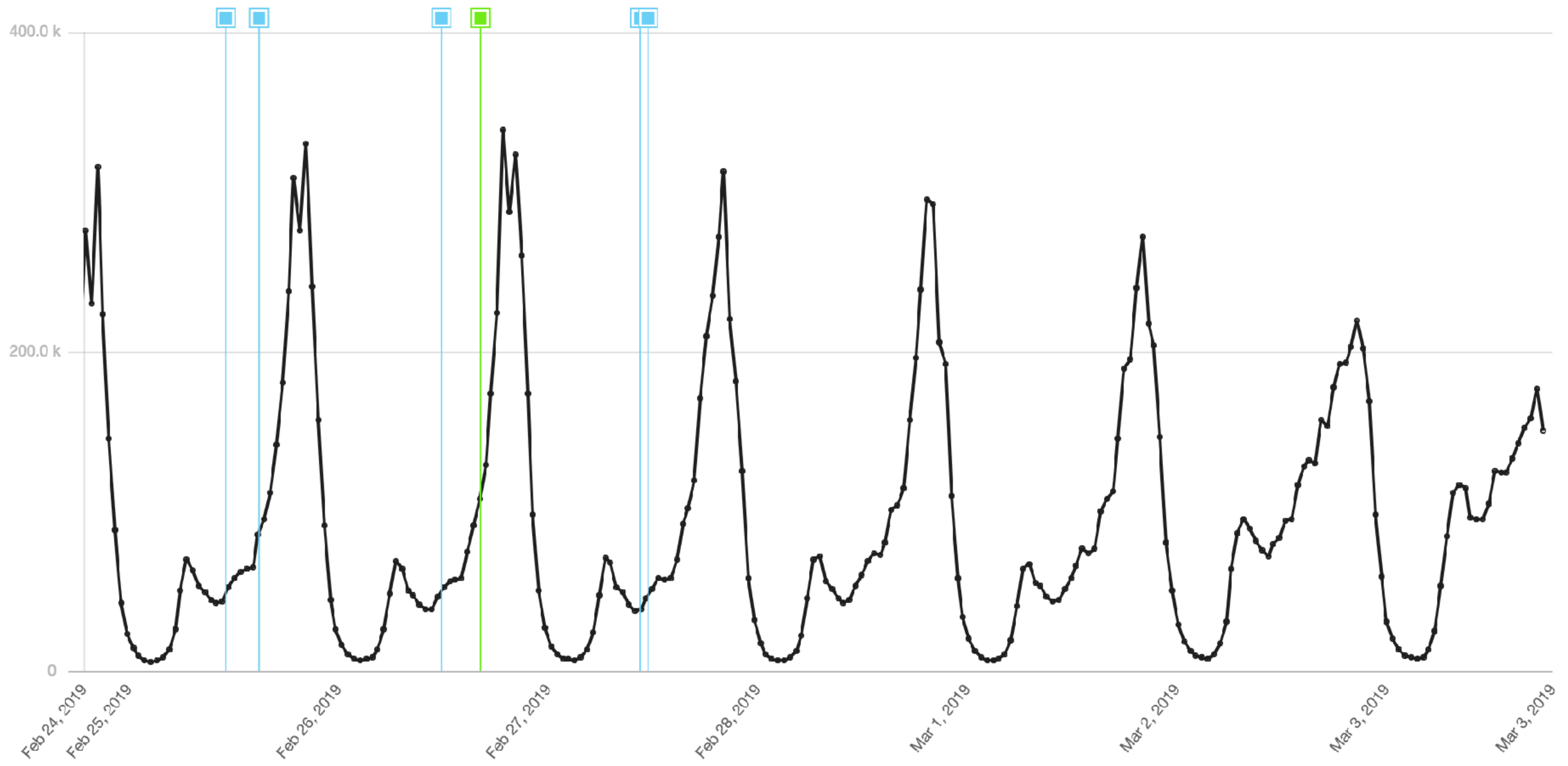
Compare with

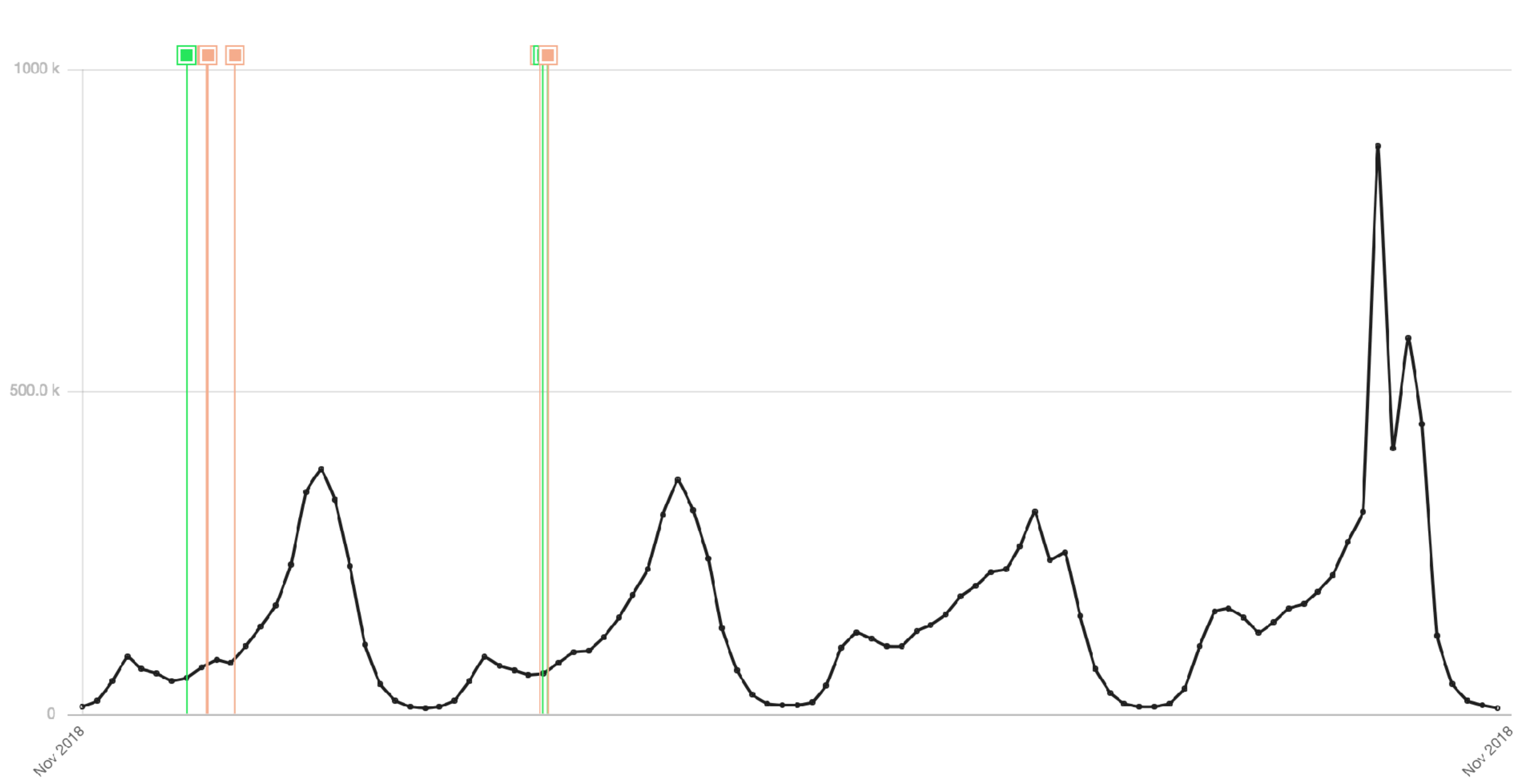
97.01 % 

Toggle Releases

Toggle Legend







taf_report_plays_heartbeat

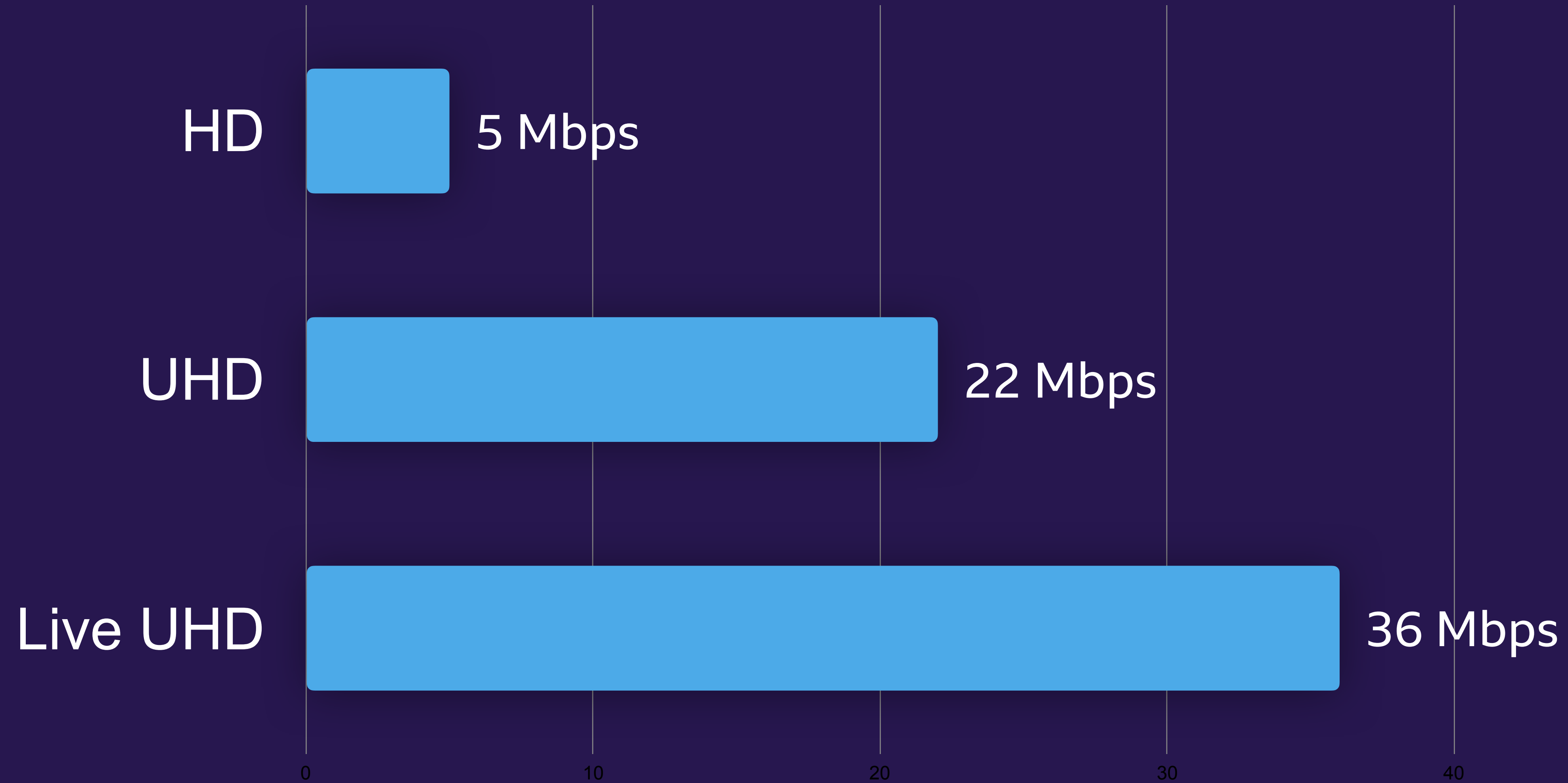
Enables or disables TAP POST requests of resume point heartbeat to the Plays endpoint of IBL

- ☐ off - Turn off heartbeat resume point reporting to IBL plays endpoint
- ☒ on - Turn on heartbeat resume point reporting to IBL plays endpoint

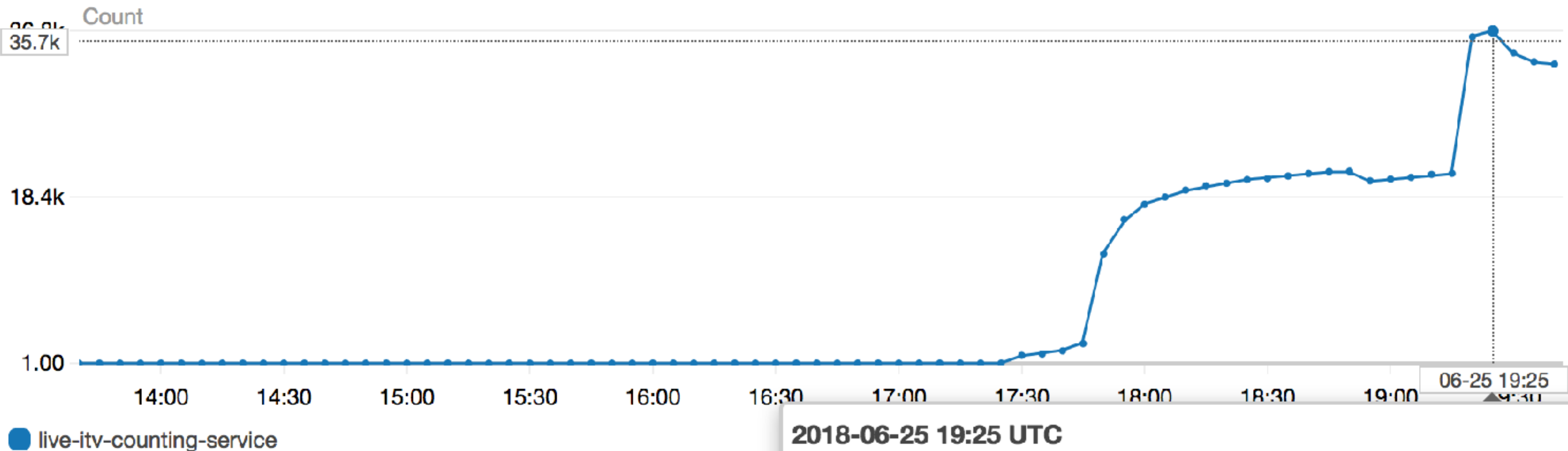
Changelog



UPDATE



live-itv-counting-service



live

33.1 k

2018-06-25 19:25 UTC

1. ● live-itv-counting-service-monitor-lambda-uhd-live-uhd-streams 36.8k





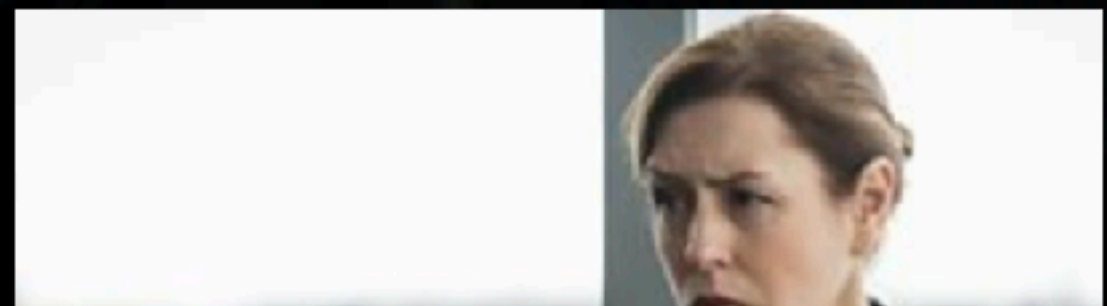
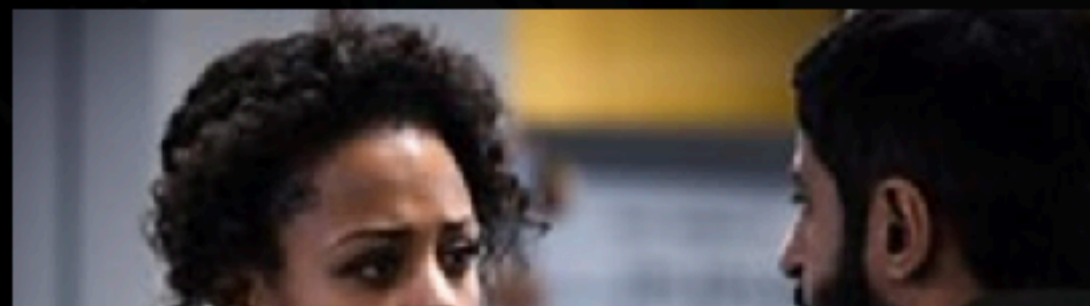
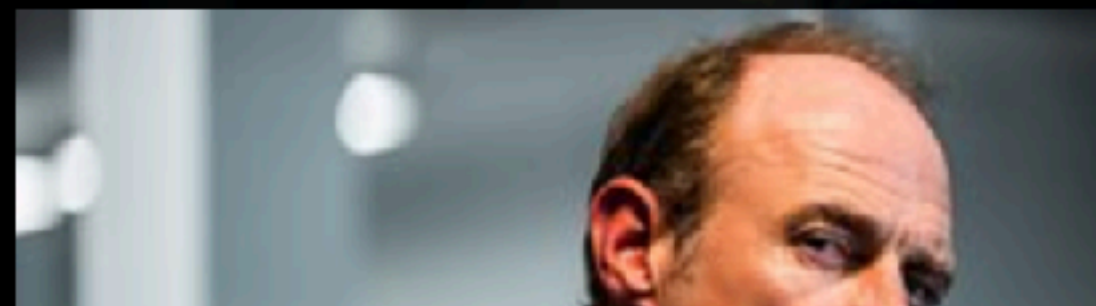
Bodyguard

Series 1: Episode 1



Pause

00:33 / 57:31






BODY GUARD

BBC iPlayer



06

What's next?

Press green  to watch from start

BBC
iPlayer

Killing Eve

Press red  now for the box set

BBC
iPlayer



SONY

Broadcast

IP

Load

1

millions

Availability

> 99.999

< 99.95

Data

Push

Pull

Security

High

Hmm?

Risk

Never fail

Learn from failure

“We need these attributes of broadcasting to be carried over into the digital age and should have the ambition for them to be amplified by the creative potential of the internet.”

Matthew Postgate, CTO

BBC

Design + Engineering

Thankyou!

BBC iPlayer

david.buckhurst@bbc.co.uk