

# Recent Updates on Hybridcast

W3C

Media & Entertainment Interest Group

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**NHK**

- Updates on IPTV Forum Japan
  - Hybridcast diffusion status
- NHK's activities
  - Video streaming
  - Device collaboration

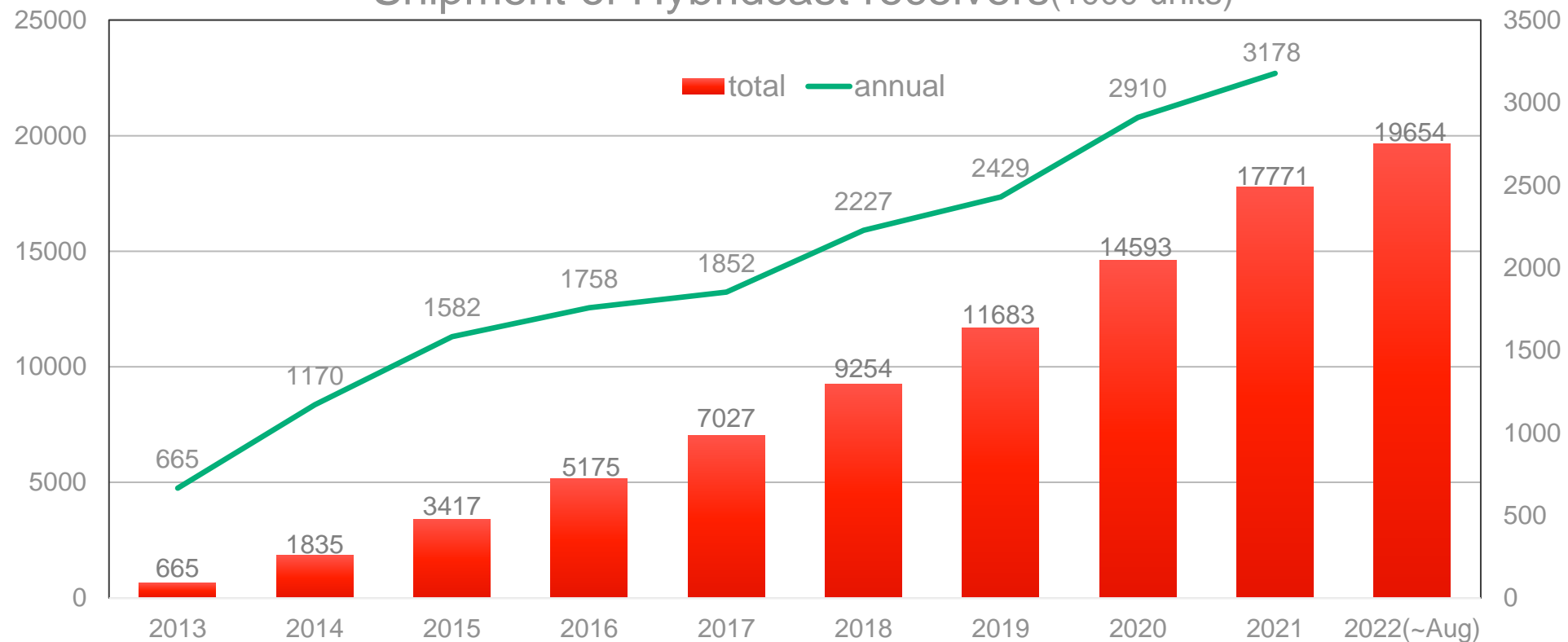
# Updates on IPTV Forum Japan

# Hybridcast diffusion status

- About 20mil Hybridcast receivers
- Available on over 300 models
- IPTV Forum Japan certified Hybridcast Connect\* TV was released in 2022

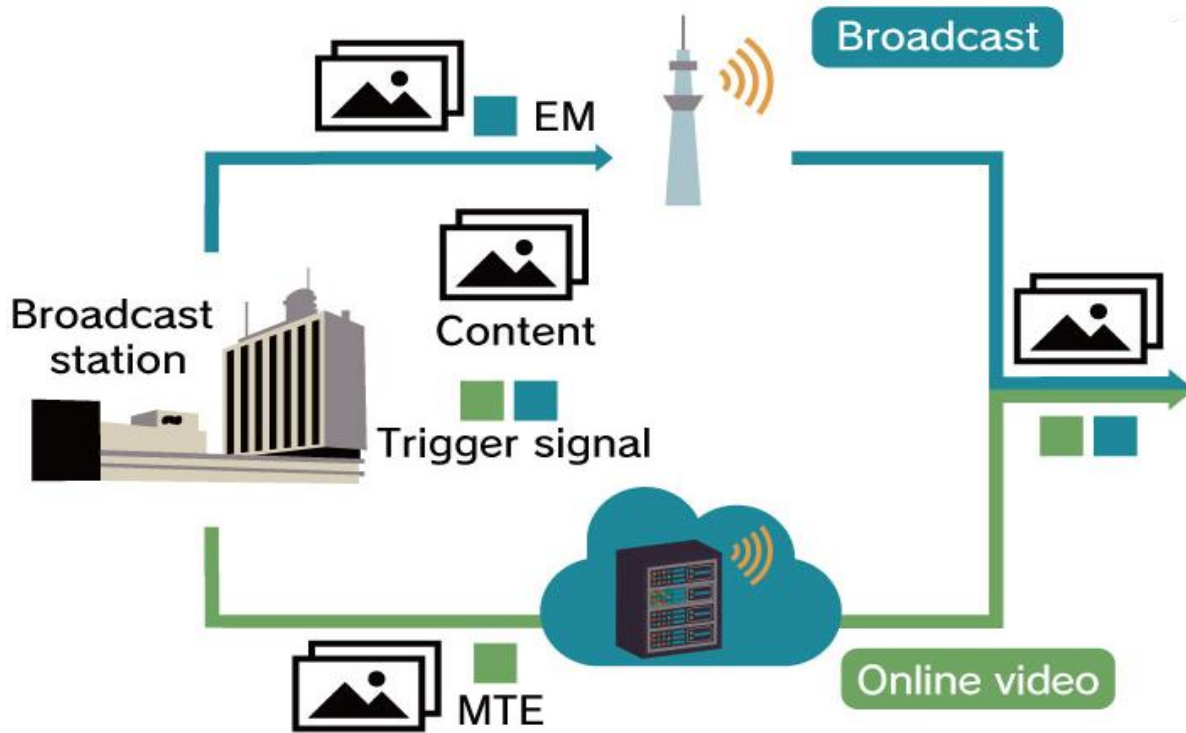
\*Protocol for linkage between TV browser and external devices such as smartphone

Shipment of Hybridcast receivers(1000 units)

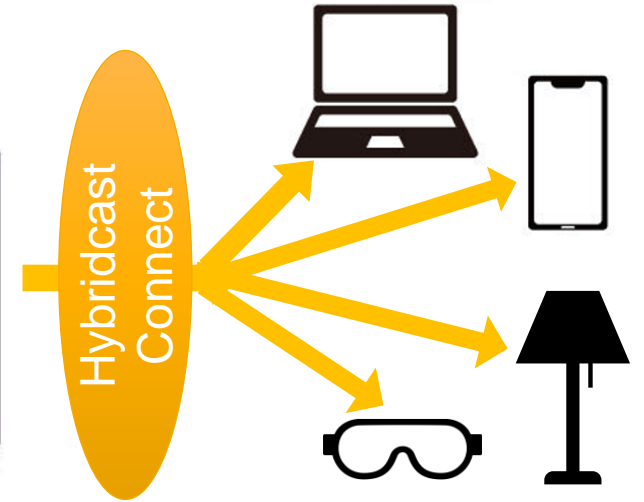


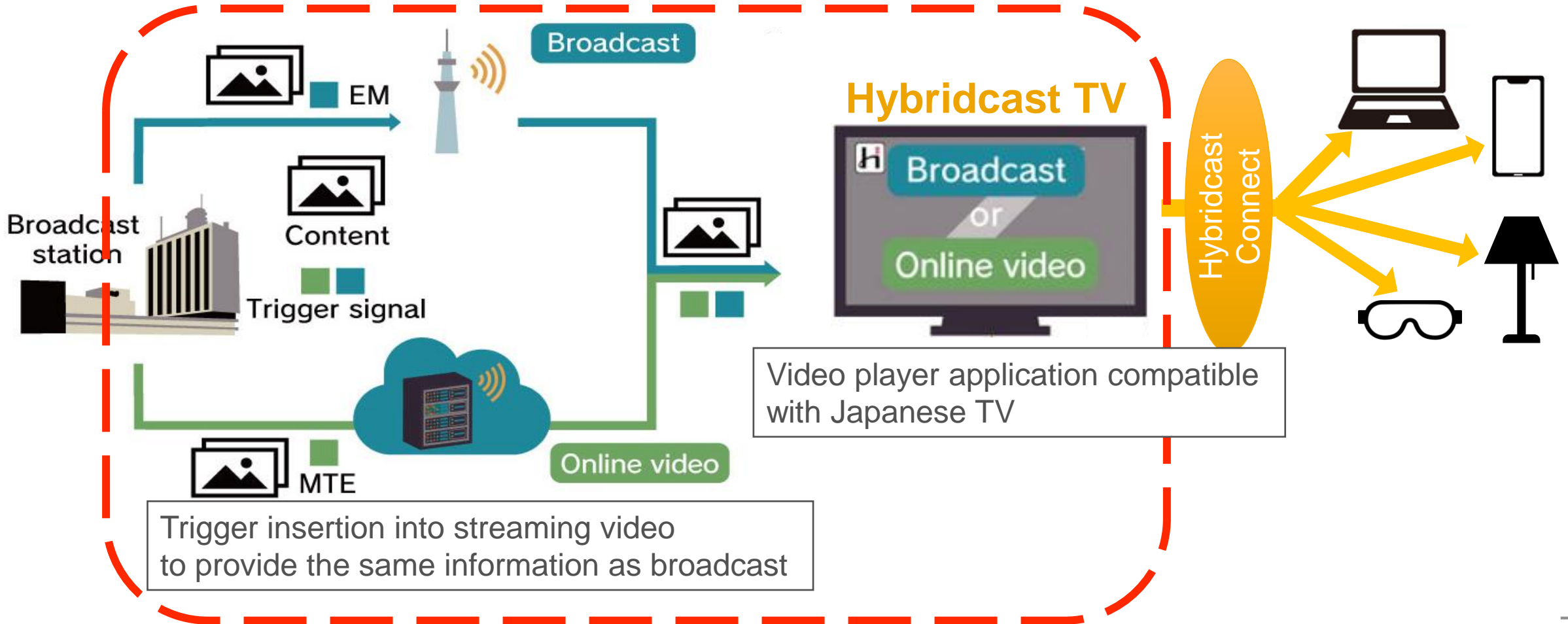
[Source] : JEITA Statistics, <http://www.jeita.or.jp/english/stat/shipment/2022/index2.html>

# NHK's R&D activity

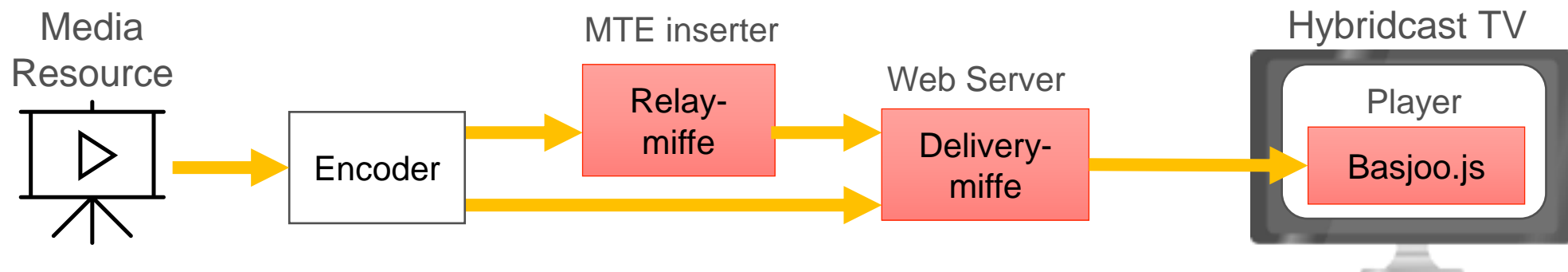


## Hybridcast TV

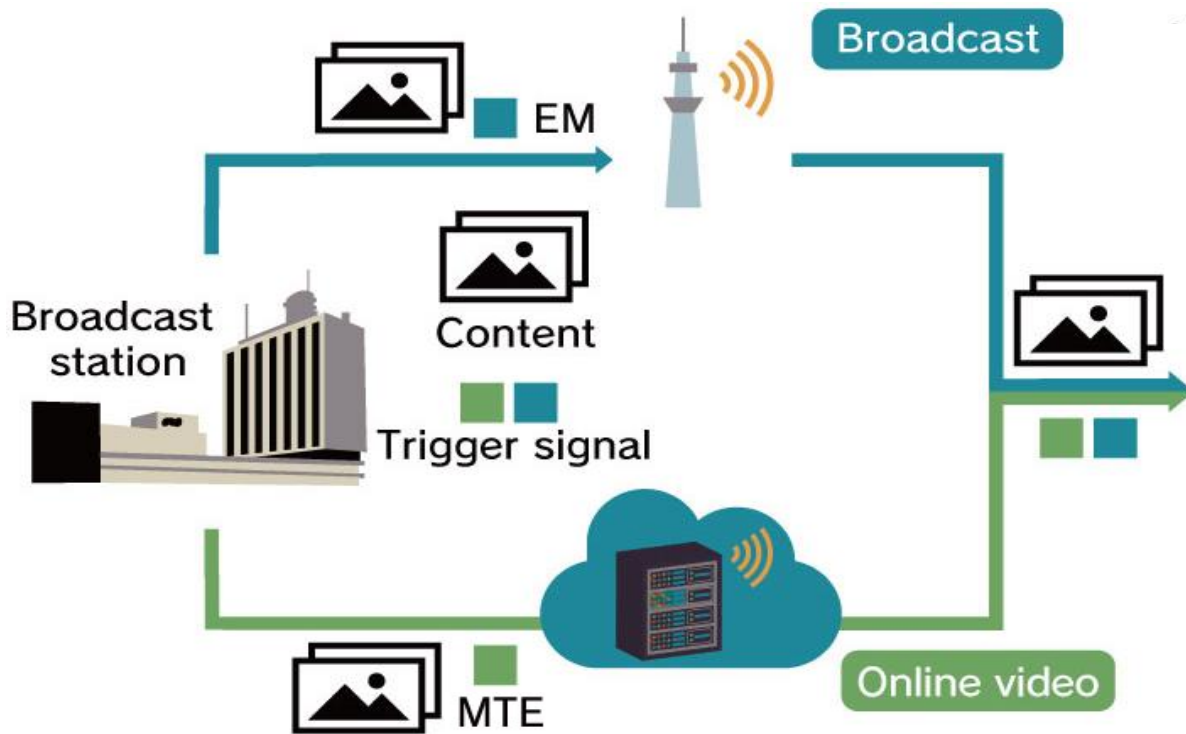




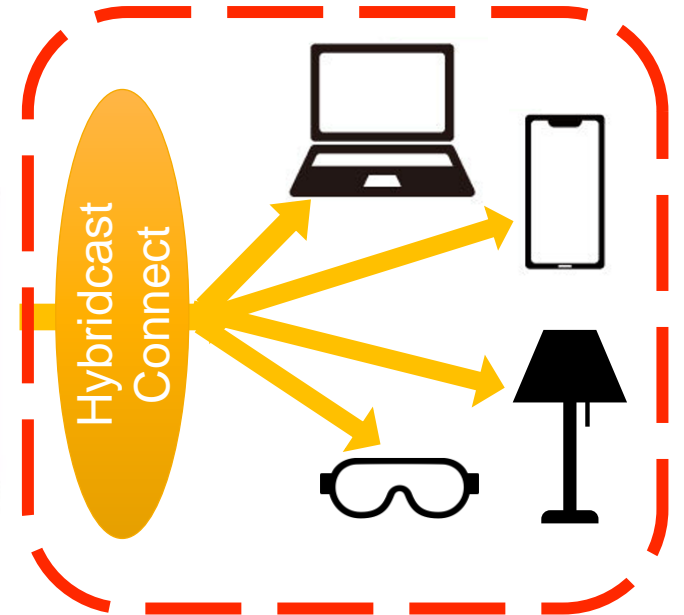
- Three new projects became public in March 2022
  - Basjoo.js: <https://github.com/nhkrd/basjoo.js>
    - MPEG-DASH player for TV for IPTVF Japan profile
    - TypeScript version of commercially proven 'dashNX'
  - Relay-miffe : <https://github.com/nhkrd/relay-miffe>
    - CMAF-ULL enabled Media Timed Events(MTE) inserter
  - Delivery-miffe: <https://github.com/nhkrd/delivery-miffe>
    - CMAF-ULL enabled video content streaming server







## Hybridcast TV



Media experiences across the devices

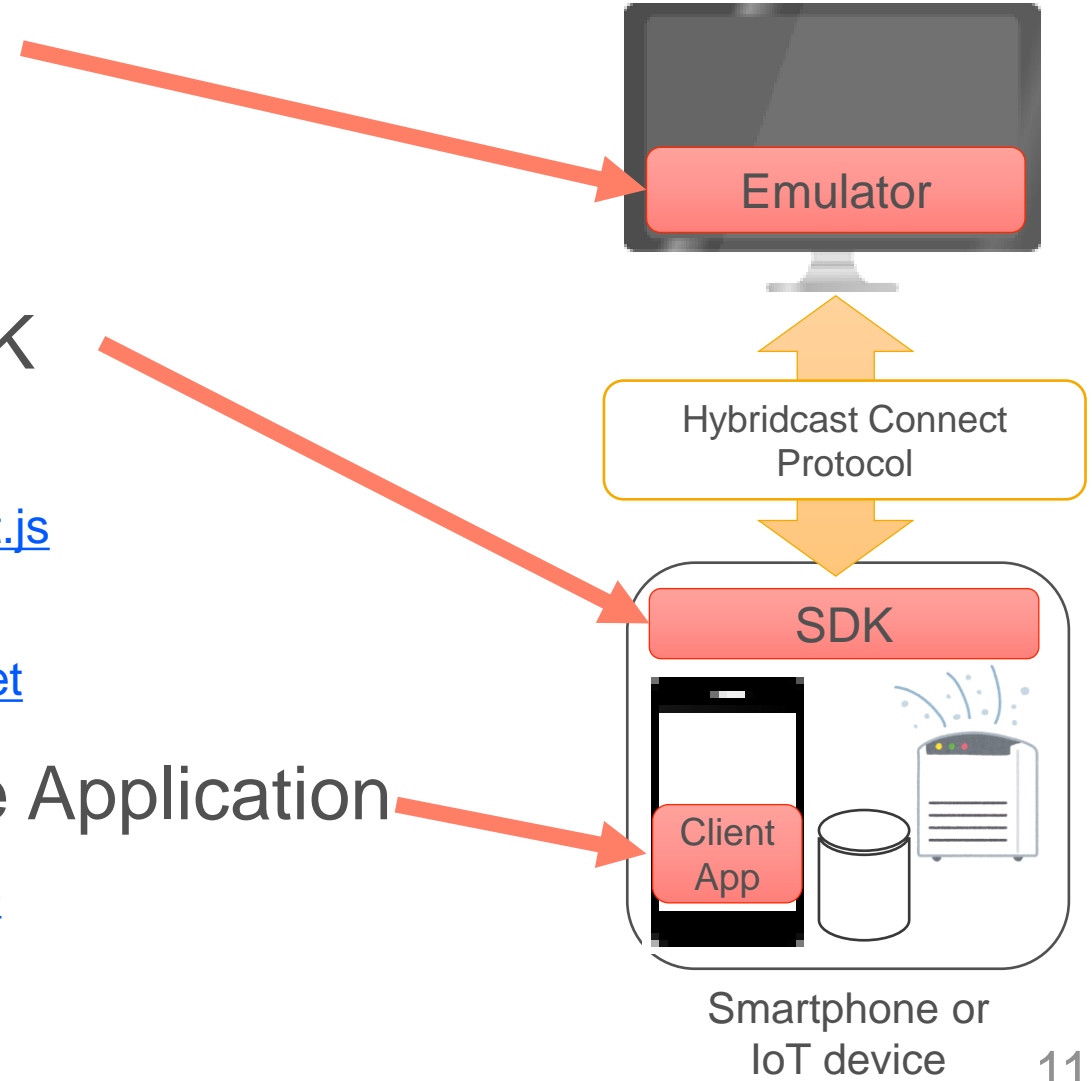
- “WoT-enabled TV services with Hybridcast Connect” at TPAC2022

Slides: [https://github.com/w3c/wot/blob/main/PRESENTATIONS/2022-09-hybrid-f2f/2022-09-14-WoT-F2F-TPAC2022\\_Breakout-Endo.pdf](https://github.com/w3c/wot/blob/main/PRESENTATIONS/2022-09-hybrid-f2f/2022-09-14-WoT-F2F-TPAC2022_Breakout-Endo.pdf)

- Demonstration from NHK:  
WoT-enabled TV services prototype with a commercial Hybridcast Connect TV
- Hybridcast Connect can provide diverse use cases for WoT



- Hybridcast Connect TV emulator
  - <https://github.com/nhkrd/antwapp4hc>
  - Hybridcast Connect APIs are implemented
- Hybridcast-Connect reference SDK
  - For Java: <https://github.com/nhkrd/hyconet4j>
  - For Java Script: <https://github.com/nhkrd/hyconet.js>
  - Node-RED extra node plugin for hyconet.js:  
<https://github.com/nhkrd/node-red-contrib-hyconet>
- Hybridcast-Connect Client Sample Application
  - <https://github.com/nhkrd/hyconet-android-sample>



- **Further information on media service for various devices**
  - NHKSTRL OPEN HOUSE 2022:  
<https://www.nhk.or.jp/strl/open2022/tenji/1/index.html>
  
- **Application development tools are available**
  - <https://github.com/nhkrd/>

**Thank you for your attention**