ITU Workshop on Telecommunications Service Quality
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Session 8: Quality assessment of popular OTT applications

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OTT service quality in benchmarking – Challenges of automated testing

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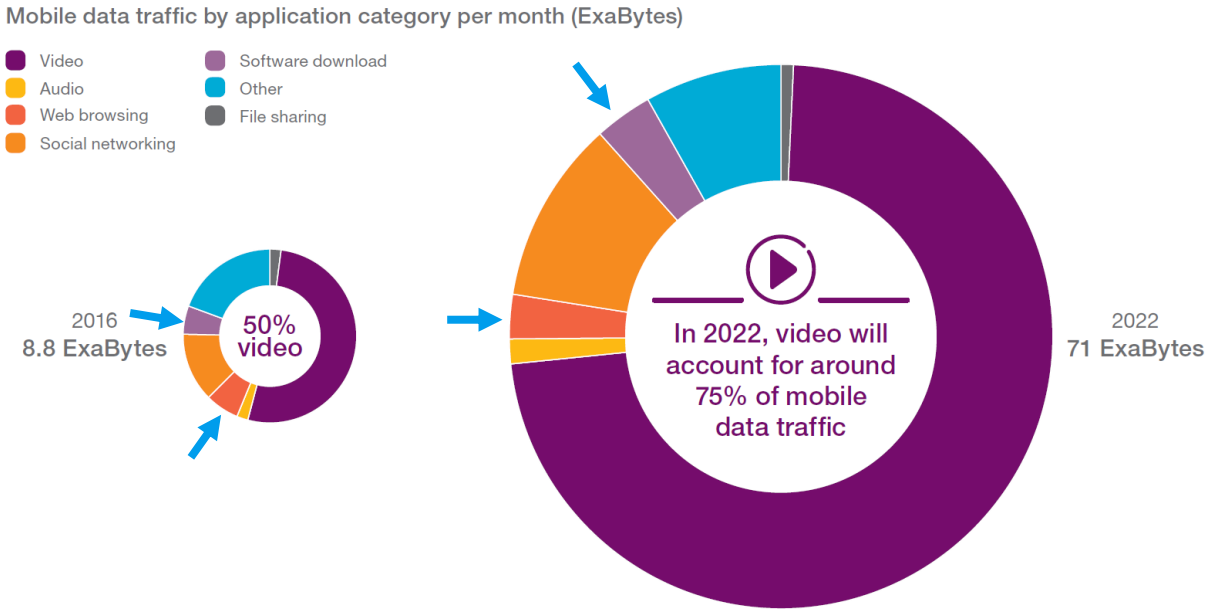
ROHDE&SCHWARZ
Mobile Network Testing

What are the drivers of QoE in mid and long term

Video, video and, then, more video

- What is the focus of benchmarking **TODAY**?
  - Down- (and up-) load data
  - Web-browsing (finally data-download too)
  - Sometimes Social Media
  - Sometimes Video



Portion of browsing and pure download

<20% today

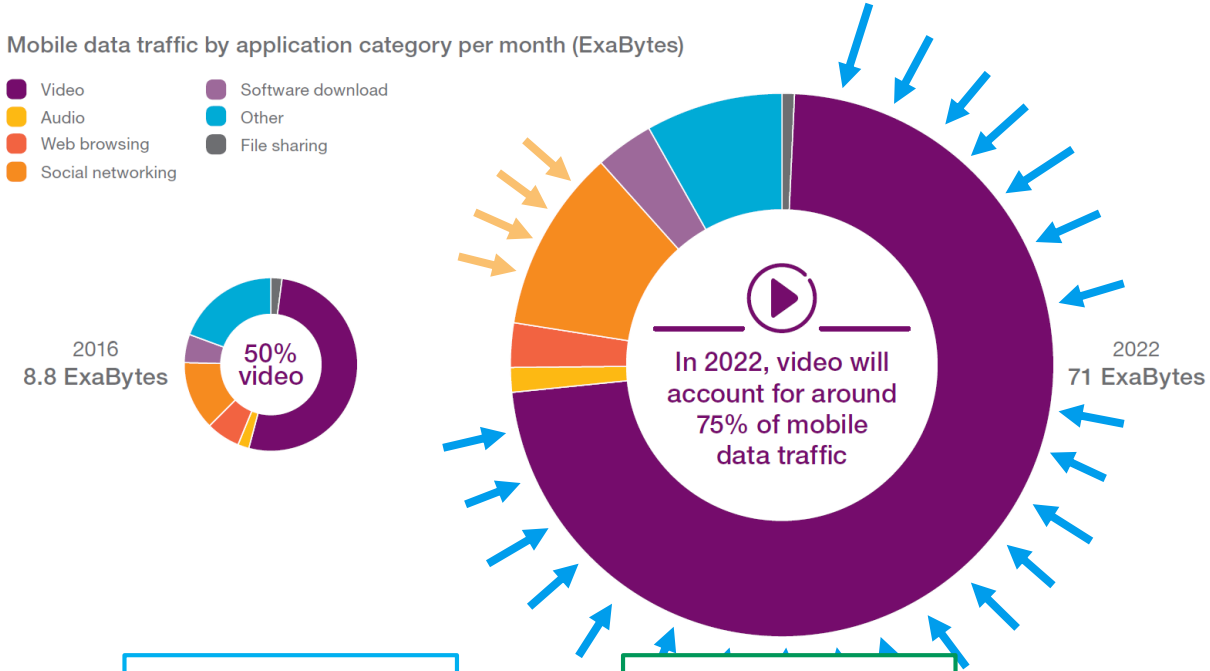
~10% in 2022

Source: Ericsson Mobility report – 2017, Ericsson Smartphone usage report – 2016, NPD

The future of QoE benchmarking

Video, video and, then, more video

- What Should be the **FUTURE** focus!



Portion of video traffic (streaming and chat)

~50% today

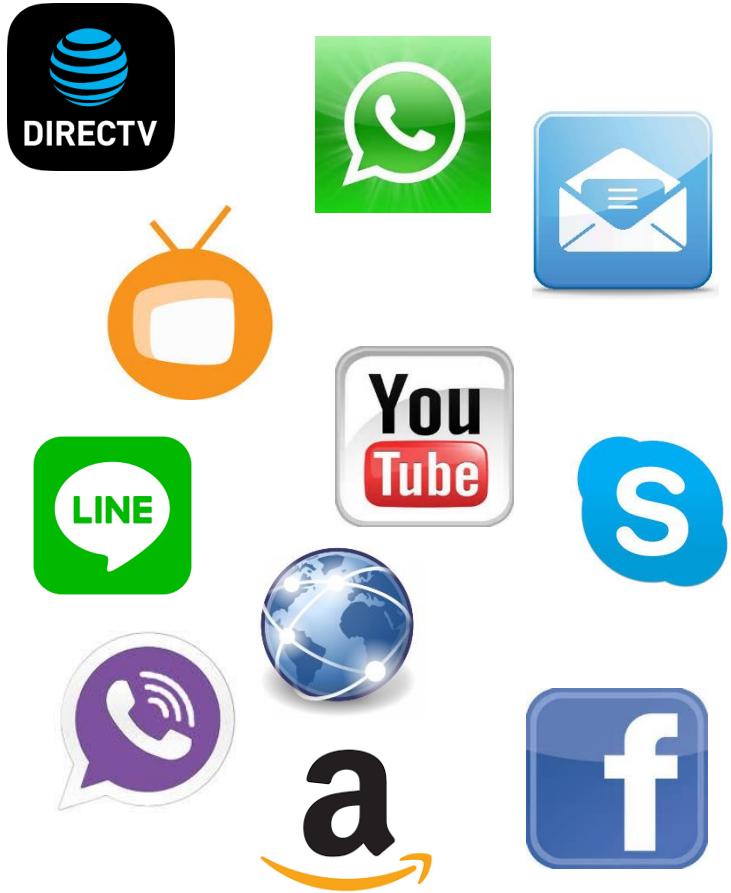
~75% in 2022

Source: Ericsson Mobility report – 2017, Ericsson Smartphone usage report – 2016, NPD

What does a user real do?

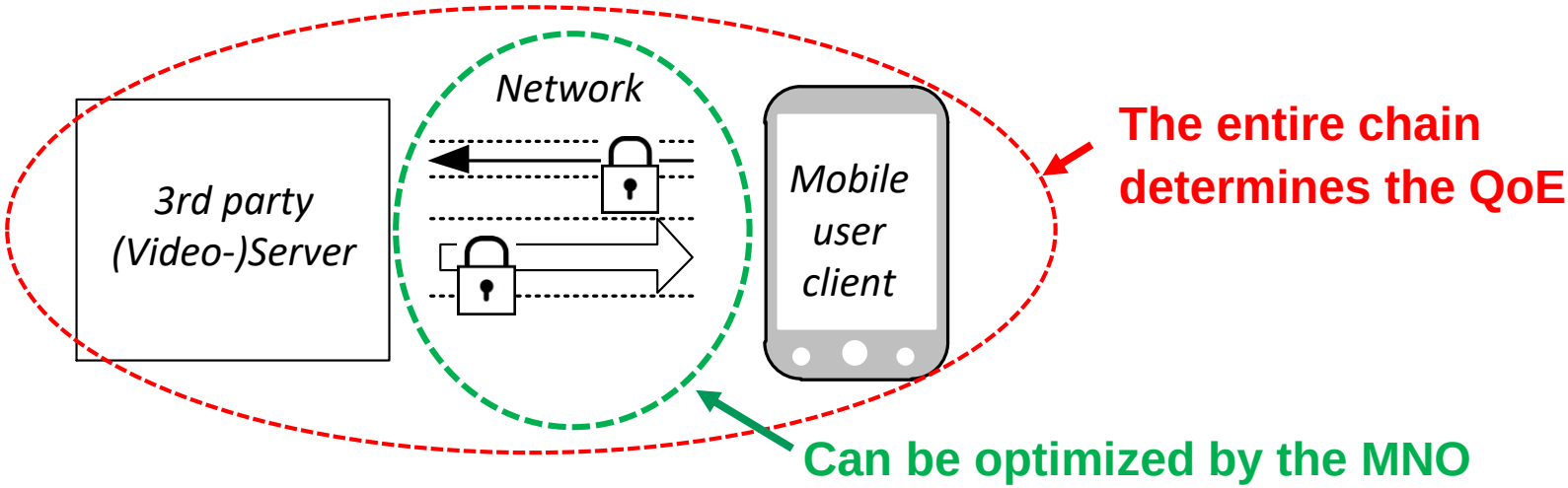
- Use of OTT services (simplified as ‘App testing’)
- ‘Apps’ are not well described native 3GPP services

- To consider:
  - OTT services apply own protocols and QoS strategies
  - Payload transport is usually encrypted
  - Apps are consumer software
  - Apps are closed eco-systems



QoE benchmarking of OTT services – 3rd party influences

MNO challenge for non-native services

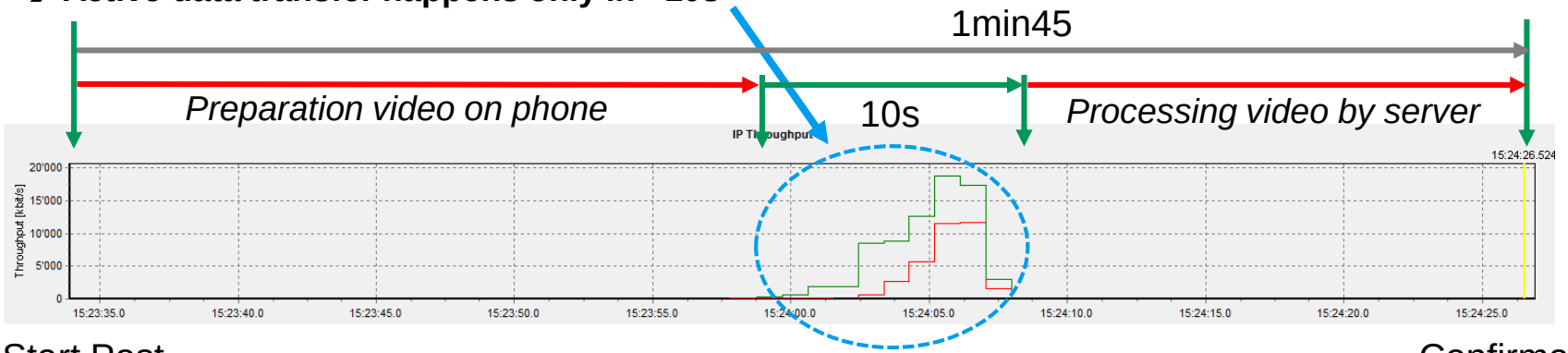


QoE benchmarking of OTT services

Example: Instagram Post Video

- **What are the common QoE KPIs for social media posting?**
  - ➔ How long does it take to fulfill my task? *Pressing ‘post’ ➔ Video visible as posted (confirmation)*
  - ➔ Can I get my task done in xy seconds? *Yes or No?*

- **Test duration = 1 min 45**
  - ➔ **Active data transfer happens only in ~10s**



Start Post

Confirmation

QoE benchmarking of OTT services

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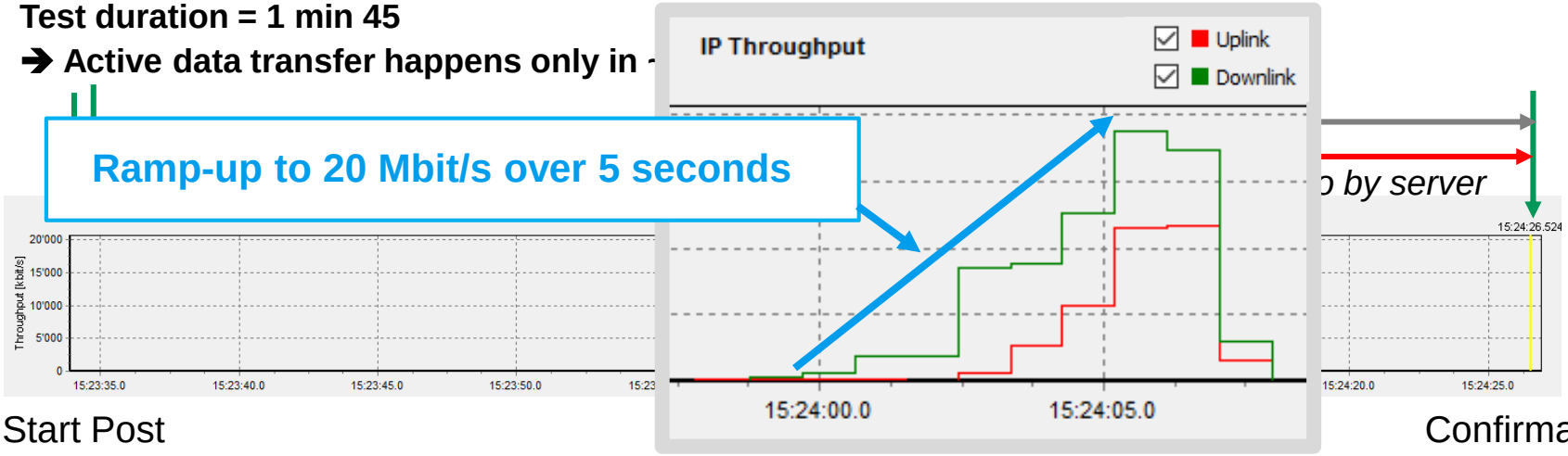


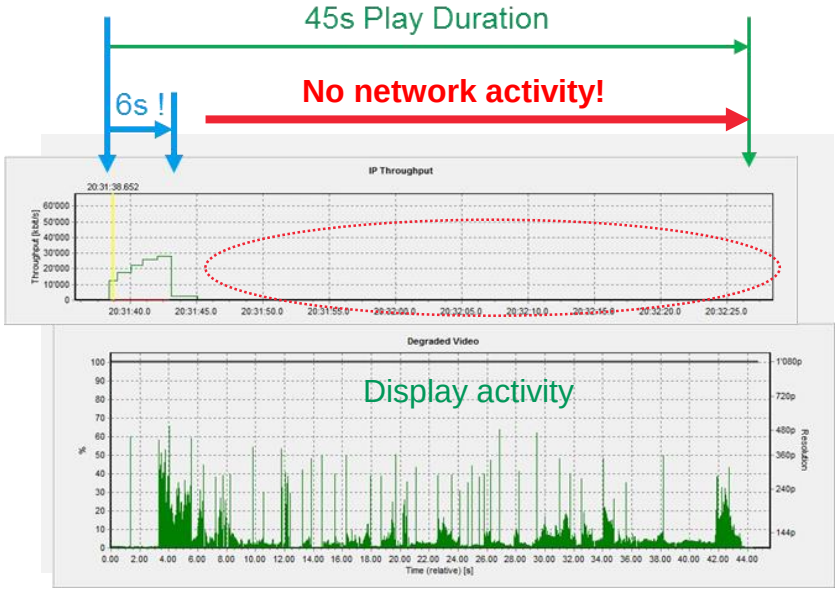
Start Post

Confirmation

QoE benchmarking of OTT services

Example: Video on Demand – Progressive Download

- **Active data transfer takes only 10 to 20% of the video (test) duration**
- A network issue is only affecting the QoE if happen in the first seconds of the test
- Network-wise **we are blind for >80%** of the time

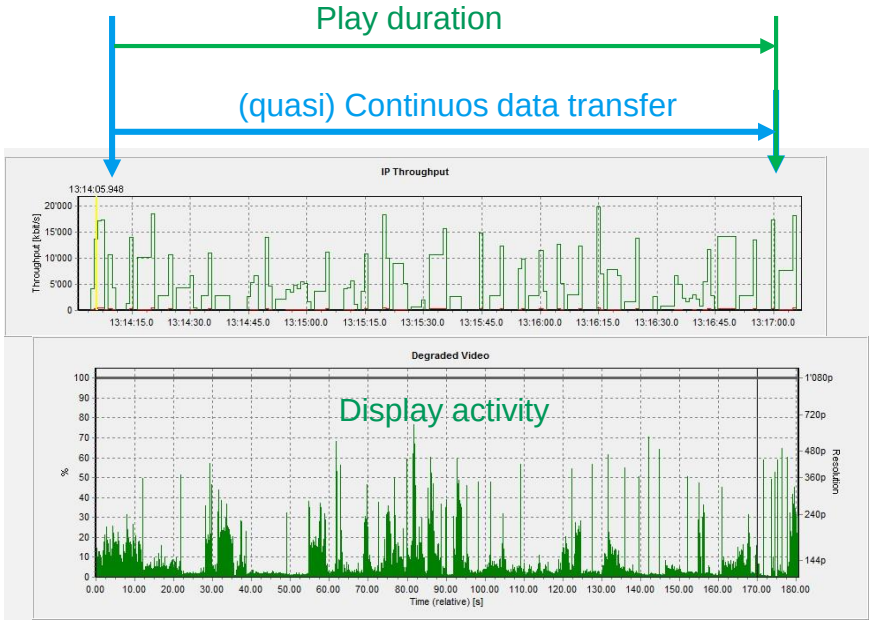


QoE benchmarking of OTT services

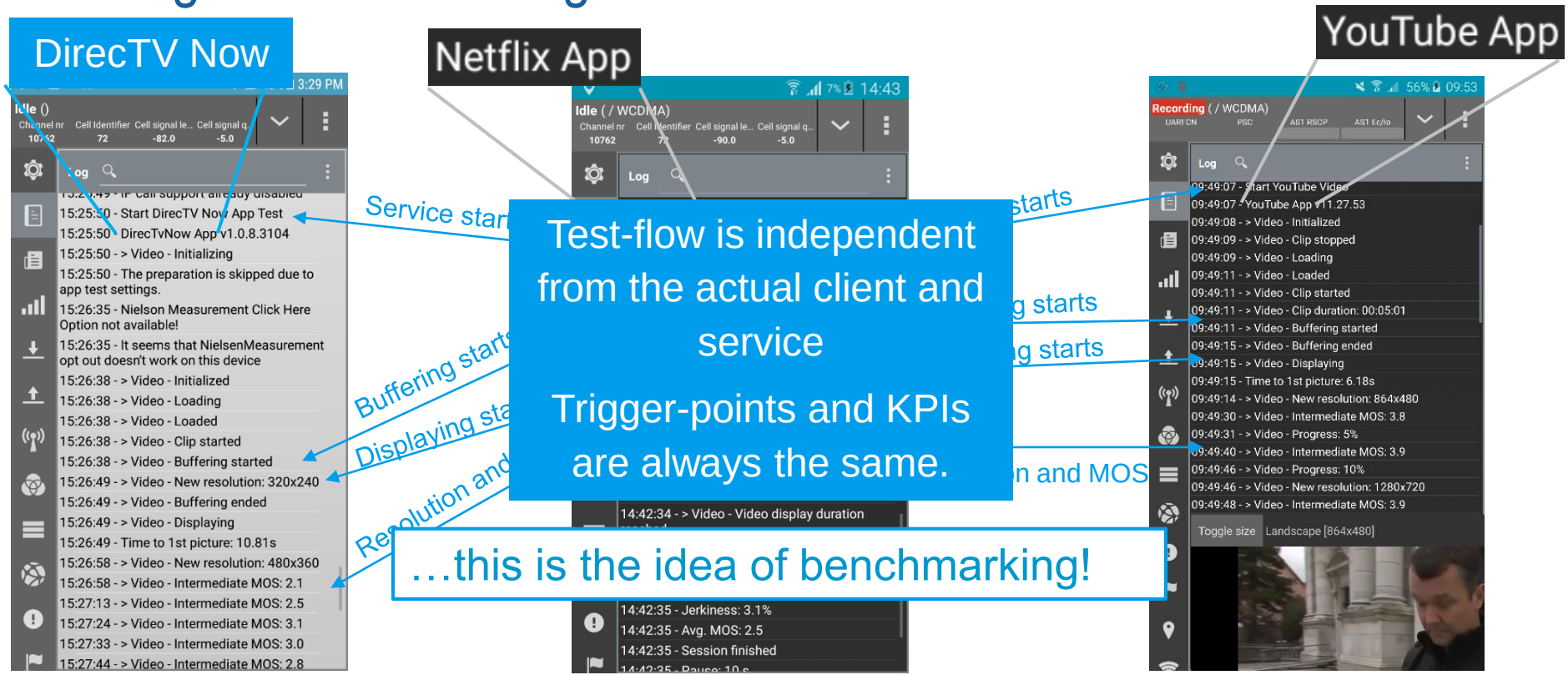
Example: Live Video – Continuous (high) data transfer

- Data transfer all over the test duration
  - ➔ Testing **continuity** of data connection
  - ➔ High density of information on lower layers

- Live video is real-time
  - ➔ Shorter buffer -> More sensitive
  - ➔ Rapid reaction to actual network conditions



Testing Video Streaming – No matter of service



Conclusion – OTT QoE benchmarking

- OTT services drive user's satisfaction
- KPIs must reflect user's experience and must be the same for same type of services
- Common Technical KPIs (low layer) are almost not accessible
- High dependency how service is realized on Client / Server
- Many services transmit data sparsely, put low load to the network only and trigger uncontrolled background actions

- Live video is a test case that
  - Requires a continuous data transport
  - Load on the network
  - Adaptive to varying channel capacity

YouTube is most known and most advanced video service.

In principle each video service can deliver 'live' and 'real-time' content

Thank you!