NETWORK LINK PERFORMANCE PREDICTION

@ W3C WEB AND NETWORK IG

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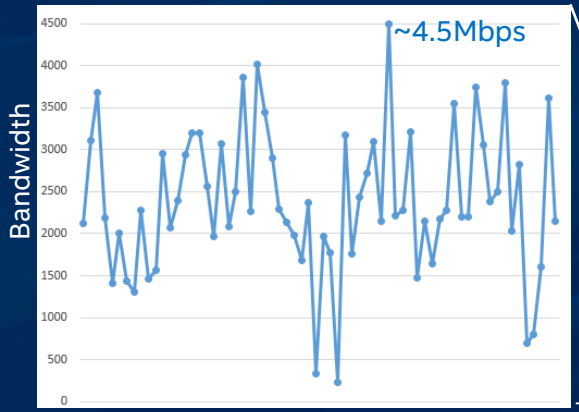
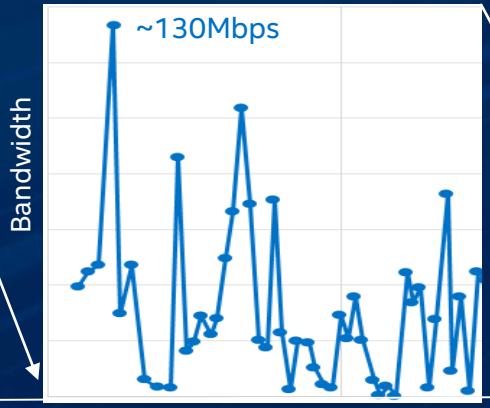
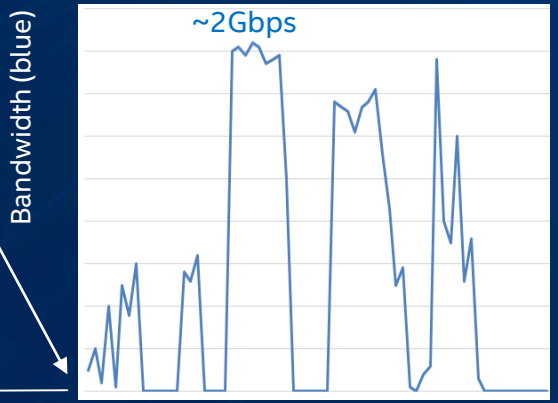
WIRELESS NETWORK CHALLANGES

Networks are better, but variations are larger

A) Large variations in quality _between_ networks
B) Large variations _within_ networks







WIRELESS NETWORK CHALLANGES

Networks are better, but variations are larger

A) Large variations in quality _between_ networks
B) Large variations _within_ networks
C) Big difference between Edge and Cloud
D) Edge can be many things, very different behavior

Networks are ”best effort” today
- limits the type of services allowed

Can we make it more deterministic?

INTEL LINK PERFORMANCE PREDICTION - LPP

Bring network awareness to the application

- Provided as ”hints” - application is still in control
- Current and near future link performance
- Multiple parameters: bandwidth, latency, cell load...

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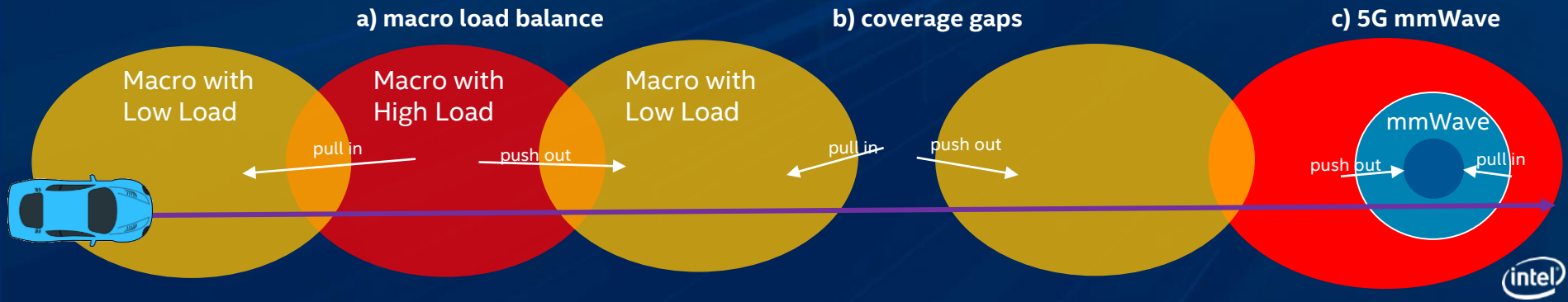
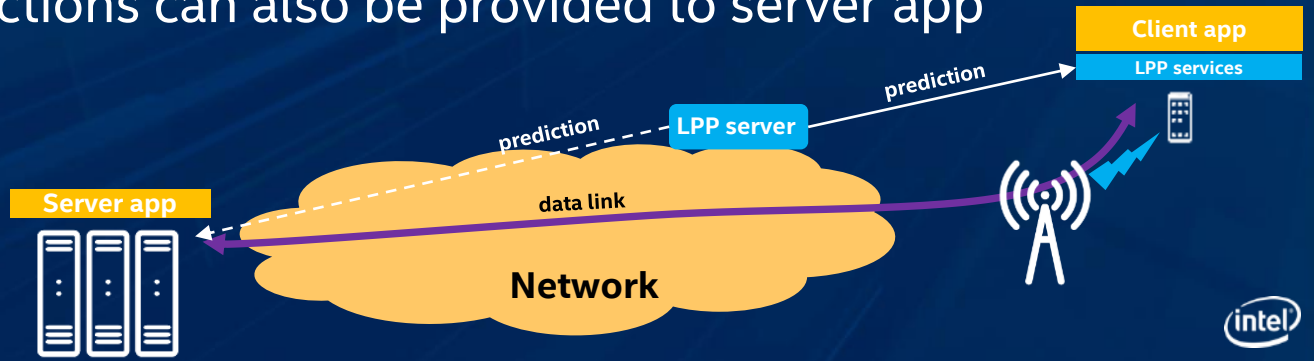
Examples:



INTEL LINK QUALITY PREDICTION (LPP) TECHNOLOGY

- Client/server connection as normal
  - Agnostic to Cloud, Edge etc.
  - No data is touched or routed through LPP server

- LPP server added to give link performance hints
  - LPP server resides in Operator network
  - Easy to use client service library to enable
  - Optionally predictions can also be provided to server app



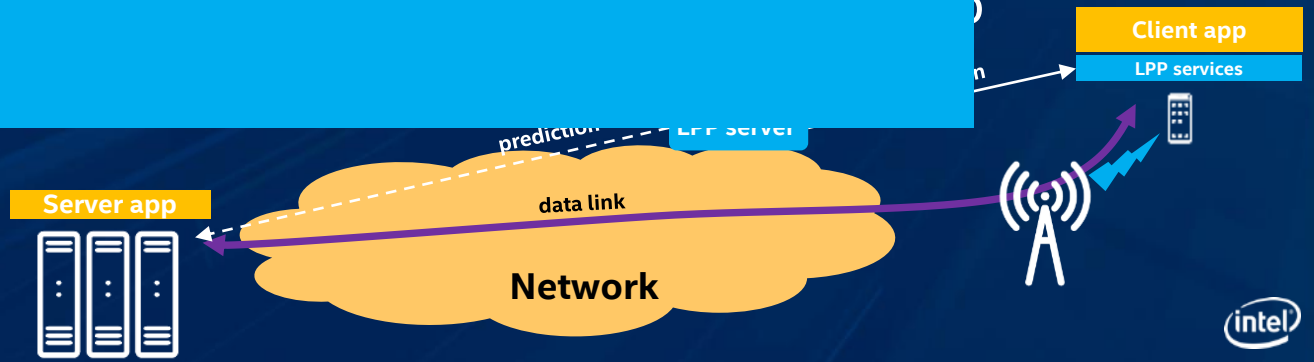
INTEL LINK QUALITY PREDICTION (LPP) TECHNOLOGY

- Clier
  - Agr
  - No
- LPP
  - LPP
  - Eas
  - Opt

hints

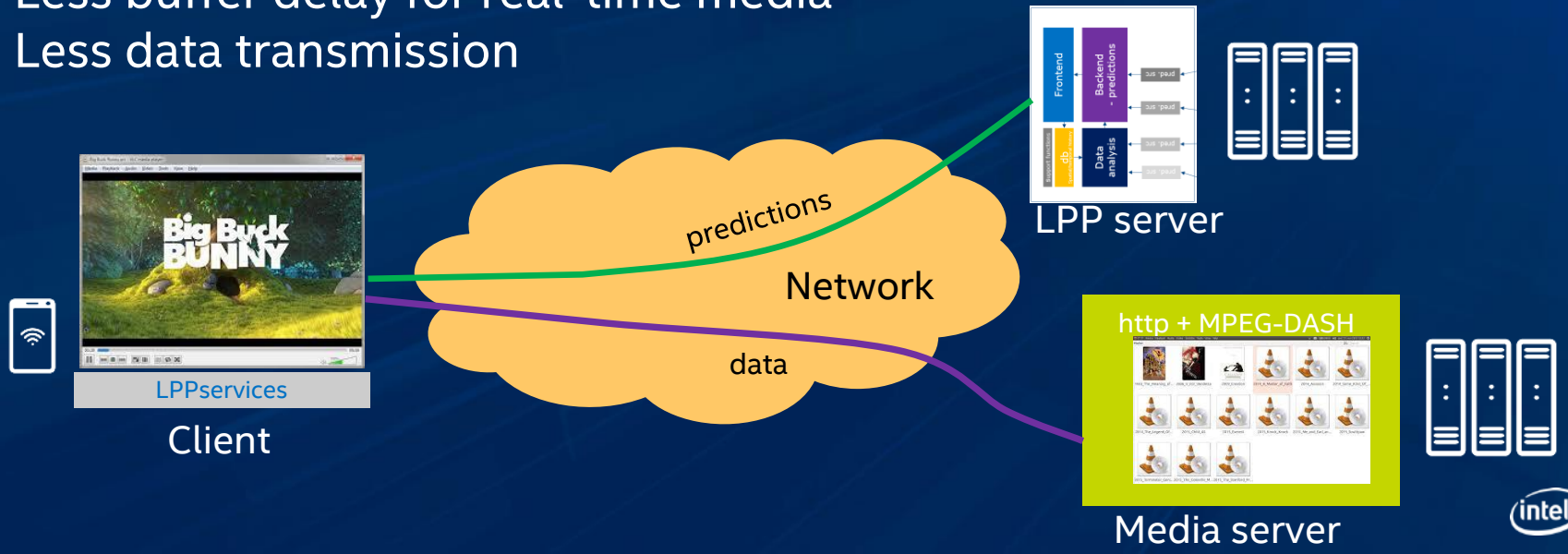
TPAC presentation will further explore:

- Overview of how link prediction can be generated
- What type of APIs are likely needed to bring forward
  - Toward web applications (W3C)
  - Toward web browser and other type of apps
  - Toward datacenter/MEC services



EXAMPLE USE-CASE: MEDIA STREAMING WITH LPP

- Pre-buffer when network is going to be poor
  - Improved user-experience
- Minimize buffer when network is good
  - Less buffer delay for real-time media
  - Less data transmission

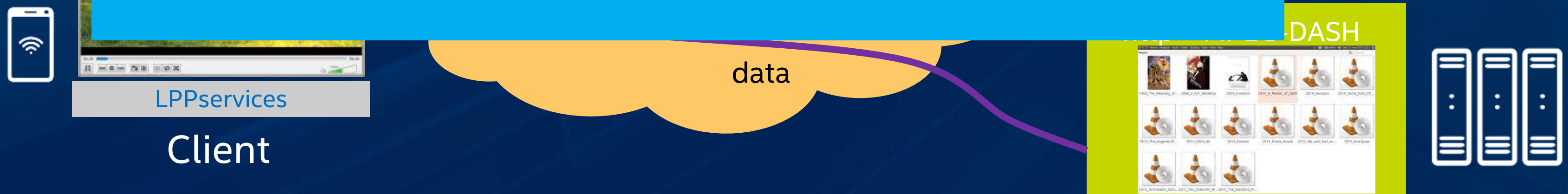


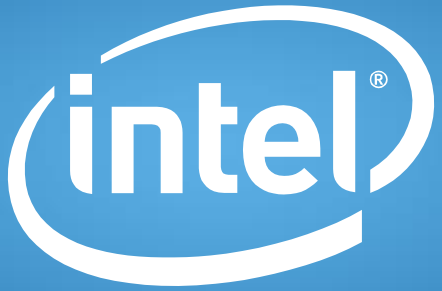
EXAMPLE USE-CASE: MEDIA STREAMING WITH LPP

- Pre-b ... or
  - Imp
- Mini
  - Les
  - Les

TPAC presentation will further explore:

- A wide set of use-cases benefiting from predictions
- Example strategies used to leverage predictions
- Benefits from using predictions
  - for end-user
  - for content provider
  - for network provider

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