Application Intelligent Policy Interface (AIPI)
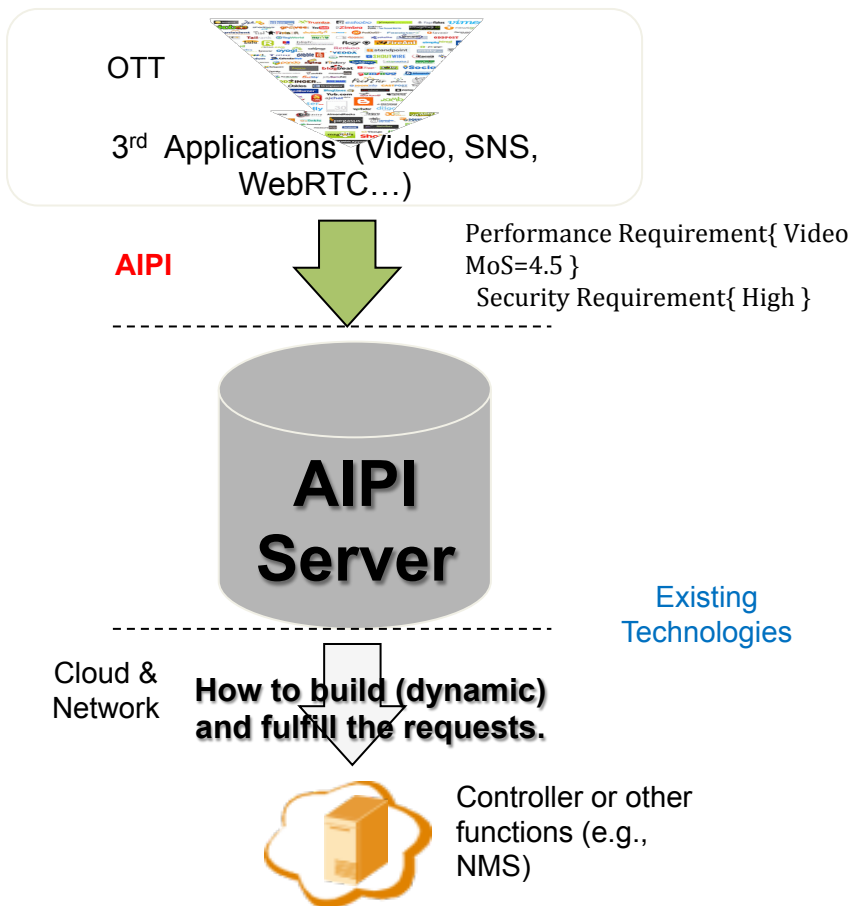
Draft-huang-appsawg-aipi-ps-us-00

Upfront Questions

- Is this work interesting enough for IETF?
- If yes, what IETF technical area does it belongs in? (We assume it's App Area)

What is AIPI

- An interface between Application and network based on App requirements modeling

OTT

3rd Applications (Video, SNS, WebRTC…)

AIPI

Performance Requirement{ Video MoS=4.5 }
Security Requirement{ High }

AIPI Server

Existing Technologies

Cloud & Network

How to build (dynamic) and fulfill the requests.

Controller or other functions (e.g., NMS)

- Features：
  - The interface covers most of OTT applications' common requirements.
  - The interface describes application requirements from the application perspective.
  - AIPI Server translates application requirements to network requirements (BW, reselect path)
  - The interface is implemented with RESTful style, and support python/JAVA…

Why Do We Need AIPI?

- Network is crucial to applications' QoE.

- However, network is a black box most of the time.

  - Even with SDN/NFV, there still exist application developers who have no or little knowledge of network.

- Current interfaces between application and network are all from the network perspective:

  - based on network elements, ports, links or protocols.

  - Applications may have difficulty to use, since they may focus more on service logic, service implementation, performance and experience of users, in stead of network information.

Why Do We Need AIPI? (cont.)

- Network requirements are difficult for adaptation
  - Applications may abuse the network resources by applying inappropriate network requirements to network for their goods.
  - Network barely do any adaptations.
    - ✓ E.g., if the application asks for certain bandwidth but there's no enough resources available, network will refuse the request
   - ✓ However, in fact, the rest resources could perfectly fulfill the service requirement (QoE) of the application.

How Could AIPI Be Used?(An Example)

From a OTT video application:

1. *OTT Server is located in Shenzhen, while the application wants to support N users from Nanjing to watch its video content fluently.*
2. *QoE requirement: MOS=3.6*
3. *Video Type = HD*

AIPI:

Service Group
{
   Service 1: Cluster 1{location = OTT Server location in Shenzhen}
           Cluster 2{location = Nanjing}
   Connection: src = Cluster1, dst = Cluster2
   policy : mos = 3.6, user number= N,
       video type = HD
}

OTT

AIPI

AIPI Server

Network

Management Devices (e.g., SDN Ctrl, OSS)
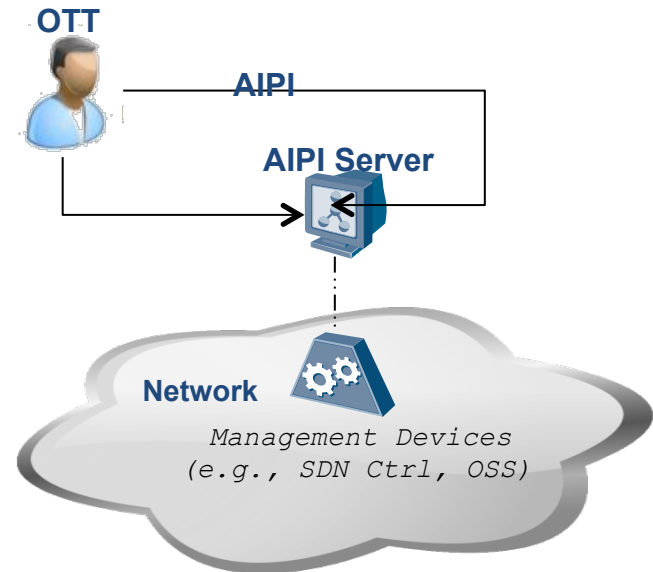
The application requirements could then be translated into different network implementations which could be deployed using existing technologies.

The Relationship Between Other Efforts
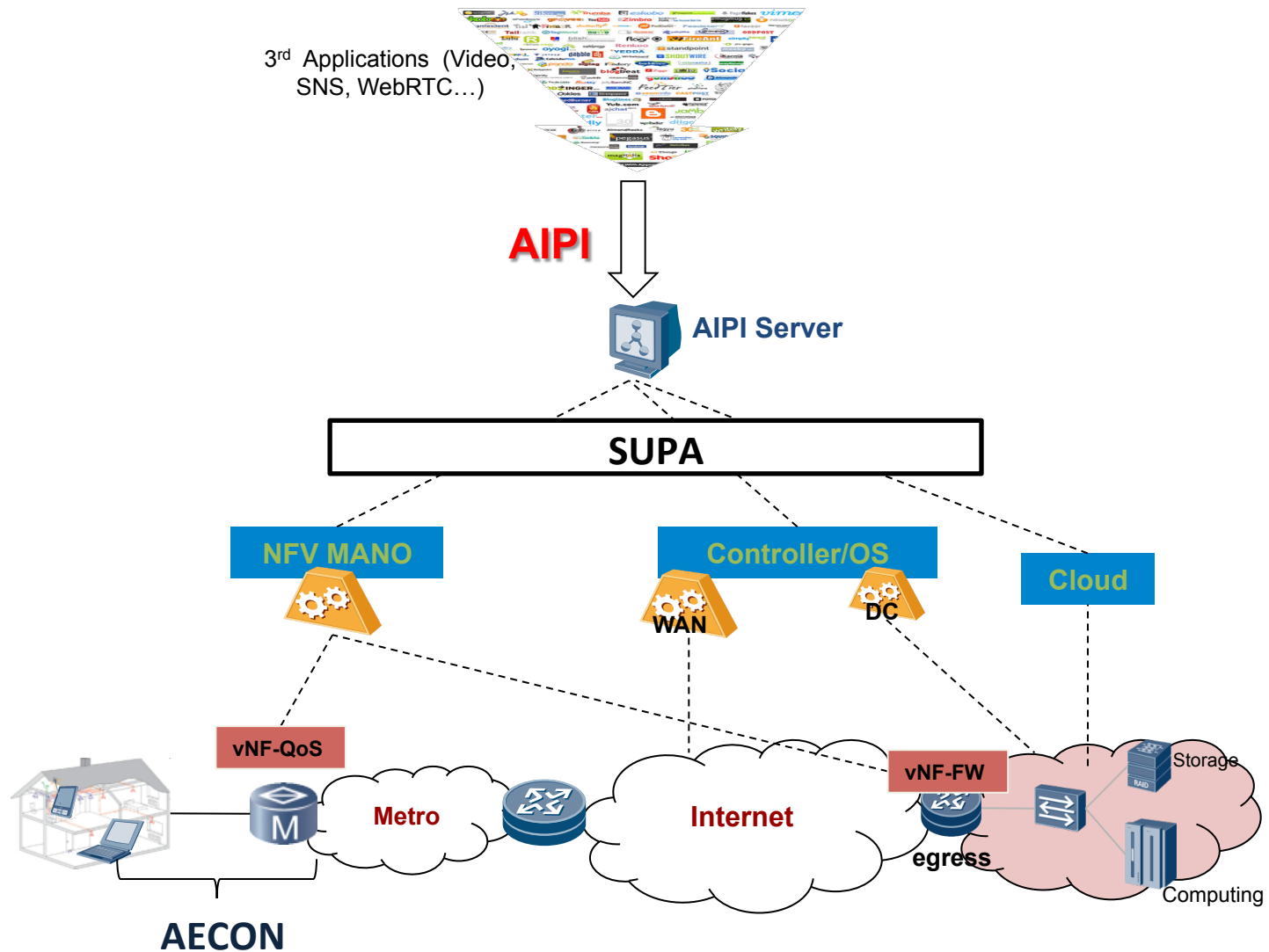
Next steps

- Is this work interesting enough for IETF?
- If yes, what IETF technical area does it belongs in? (We assume it's App Area)

Thank You!