

ITU-T FG NET-2030



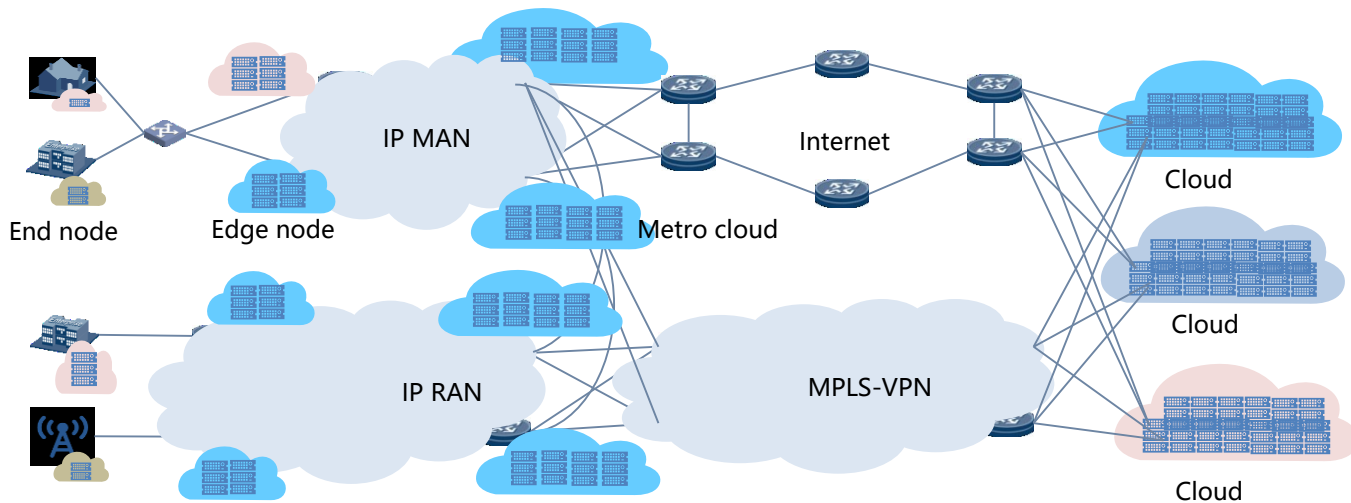
Computing Power Network DEMO

China Telecom
2020.1.13, Lisbon



Why Computing Power Network

- There are a great quantity of computing resource pools distributed in the future network, providing various computing functions for numerous innovative applications in 5G/AI era.
- Considering the significant trend of **network and computing convergence evolution(NCC) in NET-2030**, and the challenges arising by edge computing, it is necessary to research the “**computing power network**”(CPN) which supports high collaboration between computing and network resources, with optimal user experience.

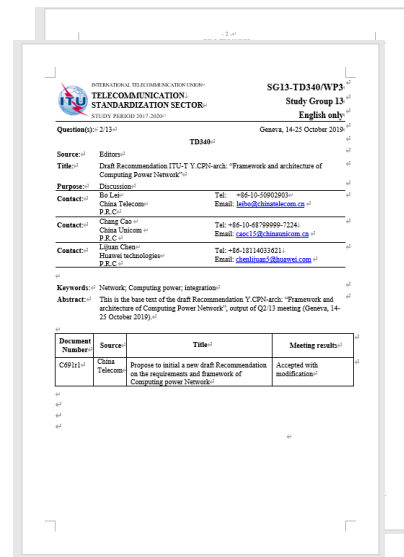
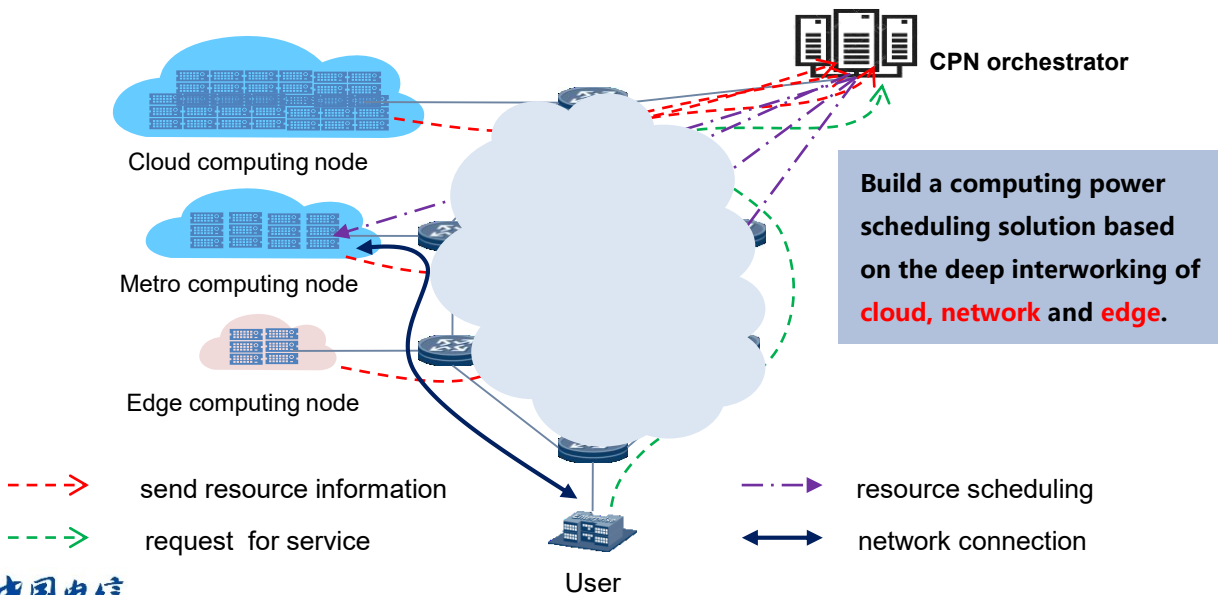


What we focus on:

- ✓ The consistency between user requirements and service quality.
- ✓ The collaborative scheduling of network, edge and computing power.

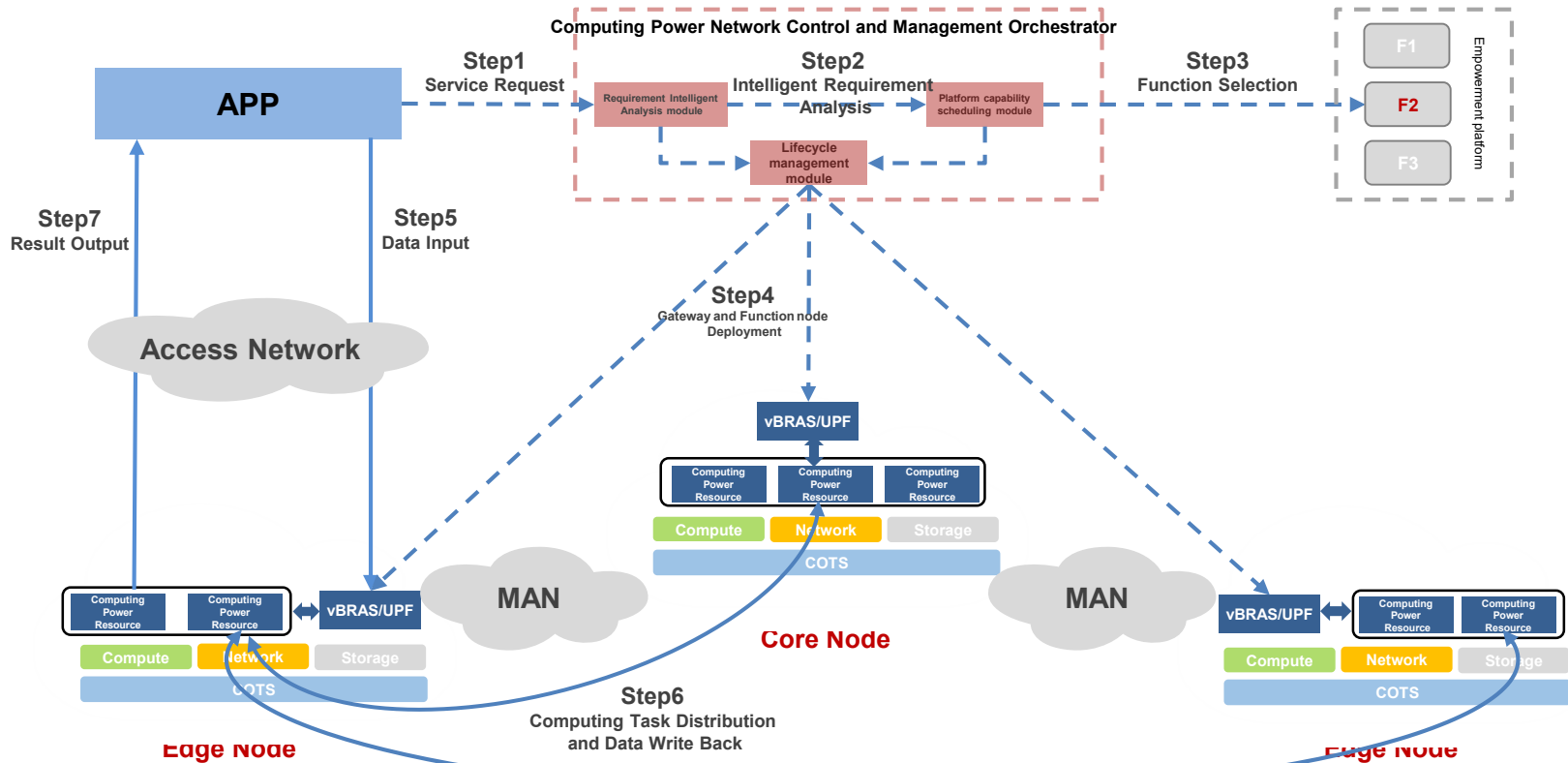
Computing Power Network

- **Main idea:** Based on the network-centric idea, collecting network resources, computing resources, storage resources and algorithm resources information to network control plane to realize collaborative scheduling.
- **Implementation:** Adding **computing power orchestration management function** based on the **SDN / NFV technologies**, distributing computing power information and also combining network information, such as latency, to provide users with the optimal computing power allocation and network connection.



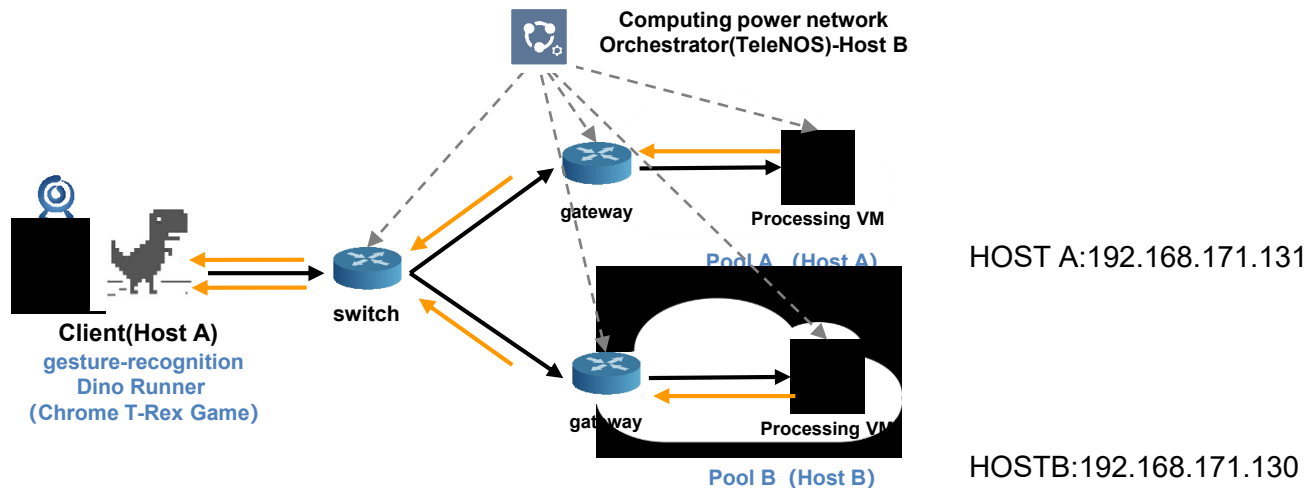
ITU-T Y.CPN-arch

Process Flow of Computing Power Network



DEMO Introduction

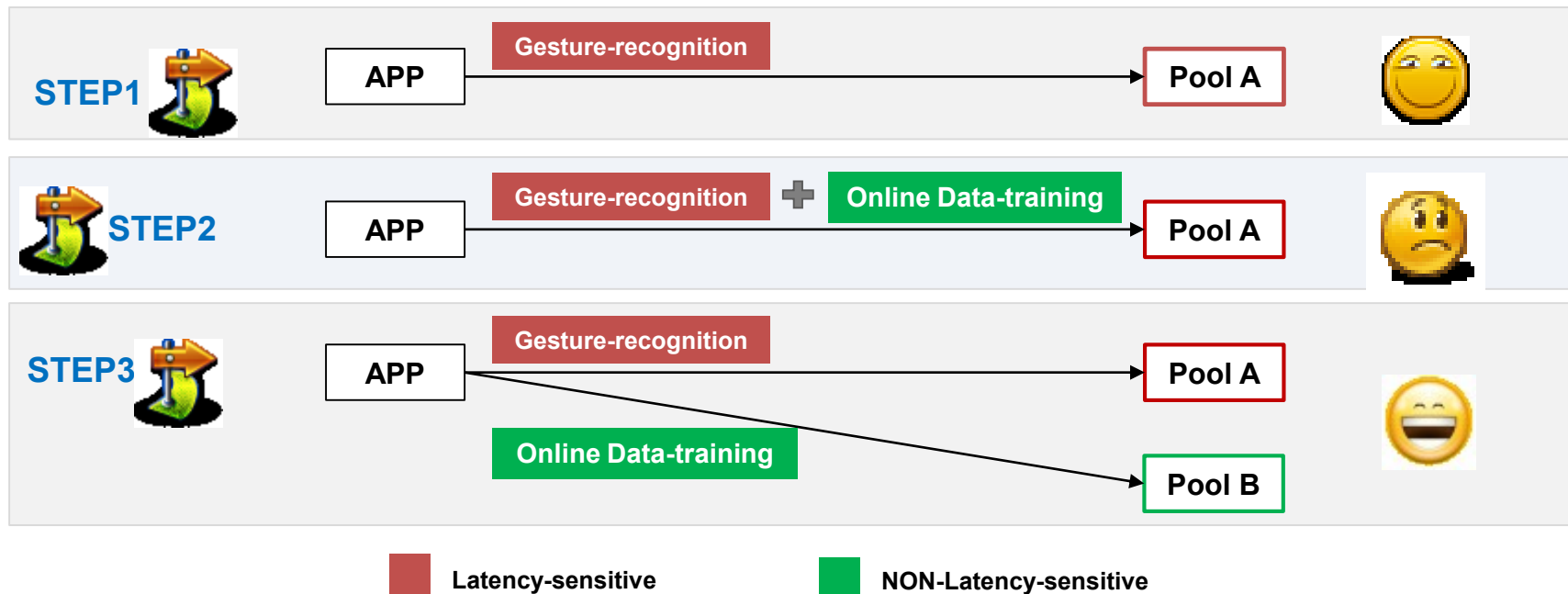
- In this demo we could play a funny and familiar game- Dino Runner, but with gesture recognition instead of keyboard input. Gesture recognition function use lots of AI capability, which proposes strict requirements on network latency and computing power. **We will show the different game experience with the CPN on and off.**



Demo Topology: Host A simulates a low latency computing power pool, host B simulates a high latency computing power pool. TeleNOS is the central controller of the computing power network, which is deployed in host B.

Demo Process

- There are two functions could be used in the game, one is gesture recognition for playing the game, which needs low latency. The other is online data training for improving game accuracy, which needs high computing power, but is non-latency-sensitive.

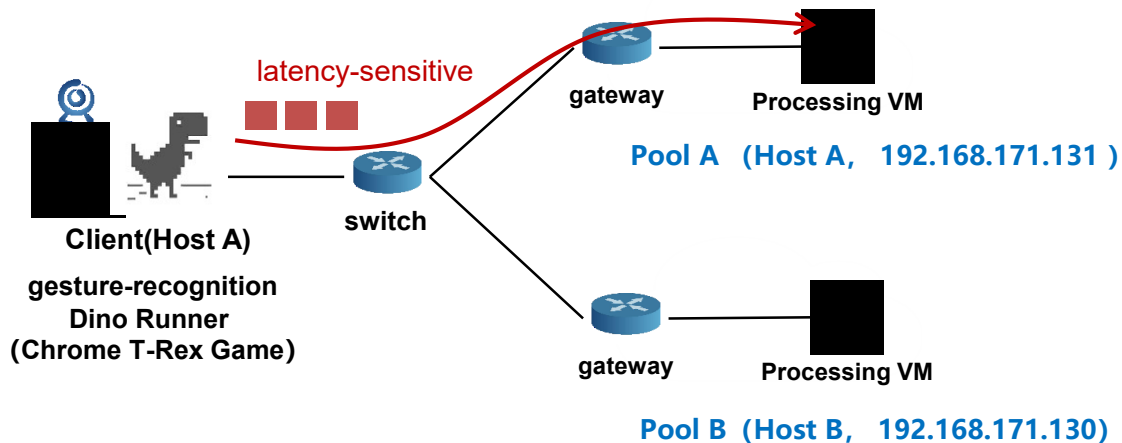




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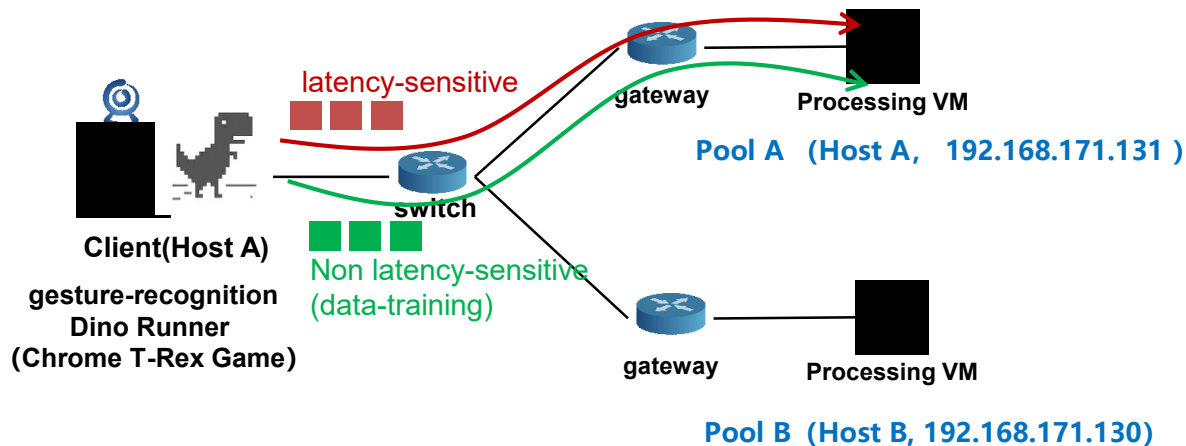
DEMO STEP 1

■ Gesture-recognition only, without CPN scheduling



DEMO STEP 2

■ Gesture-recognition with online data training, without CPN scheduling



DEMO STEP 3

■ Gesture-recognition with online data training, with CPN scheduling

