Urban Traffic-light Control in IoT (IoT-UTLC) Project

Aghiles DJOUDI

LIGM/ESIEE Paris

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Outline

Context

Introduction

- IoT Applications
  - Health care
  - Transportation
  - Industry
  - Market
  - Scool
  - Vehicles
  - Smart Home
  - Agriculture

Figure 1: IoT Applications

Context

Introduction

- IoT Applications
  - Health care
  - **Transportation**
  - Industry
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  - Vehicles
  - Smart Home
  - Agriculture

Figure 1: IoT Applications

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Plateforme

MQTT

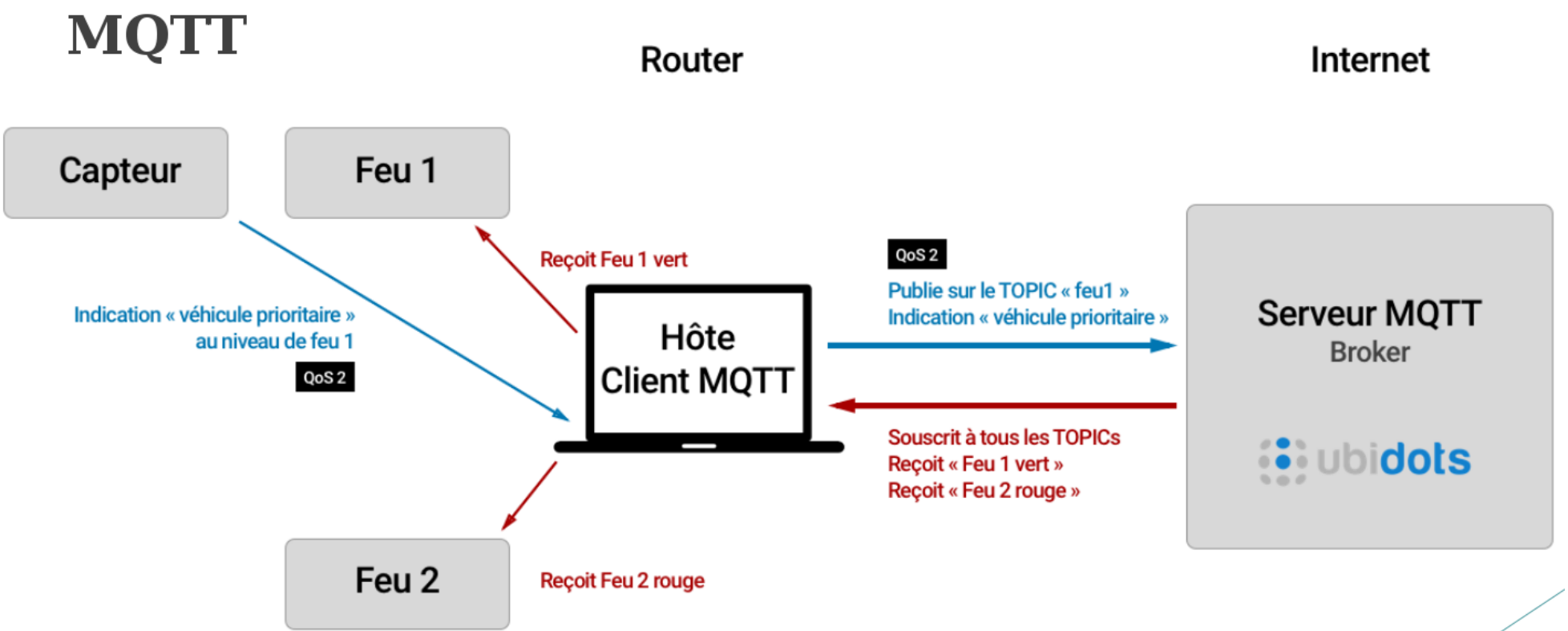

Figure 2: Platforme UTLC

Plateforme

MQTT

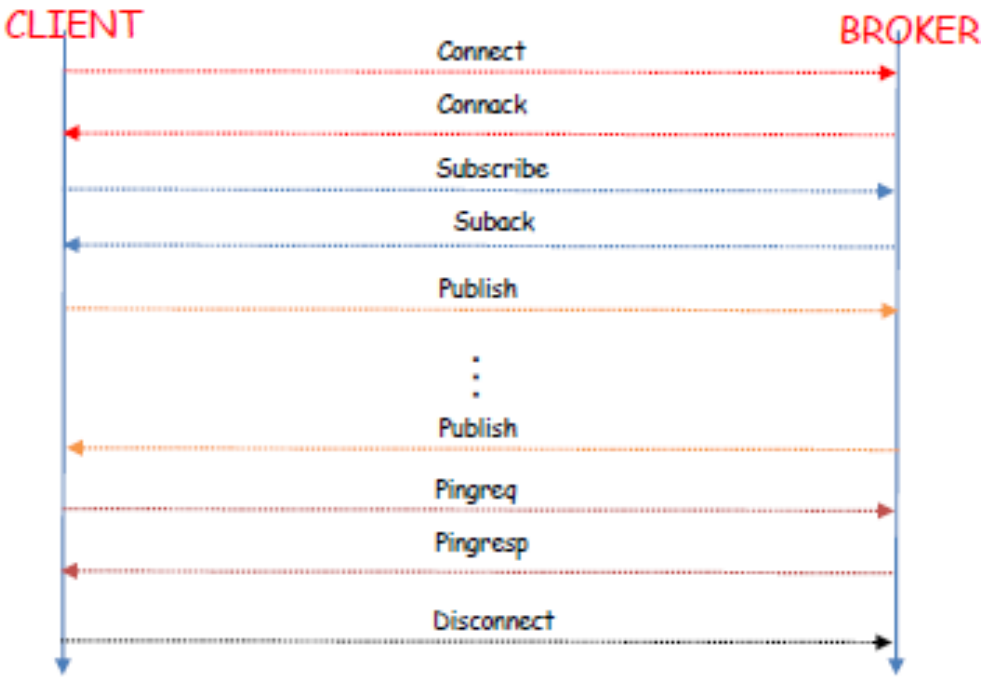

Figure 3: Publish and Subscribe

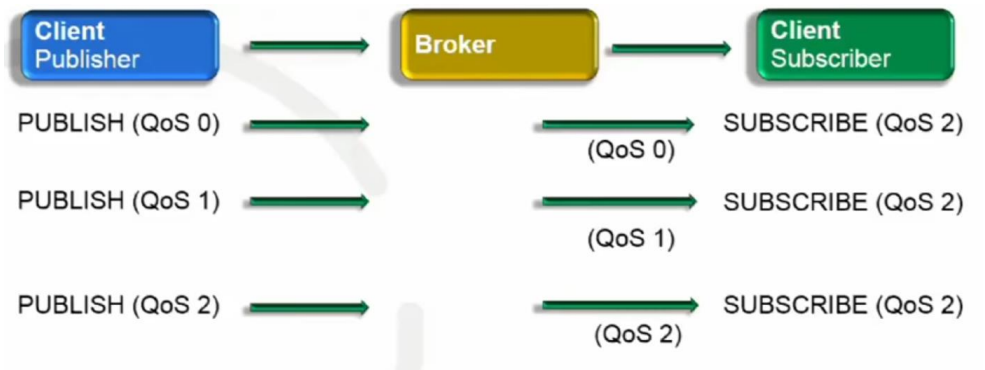

Figure 4: Publish and Subscribe

Outline

Technical choice

Implementation

- ZOLERTIA RE-MOTE
  - Low consumption component
  - ADC port for placing sensors on it
- CONTIKI OS
  - Operating system for wireless and low power development
  - Support for newer standards (6LowPAN, RPL, CoAP, MQTT)
- 6LowPAN
  - Based on IPv6 and IEEE 802.15.4
  - IPv6-based network with low power consumption
  - Ability to create a mesh network
- Sending packages
  - UDP in the 6LowPAN network
  - MQTT between the cloud platform and the router

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Results

Comparison

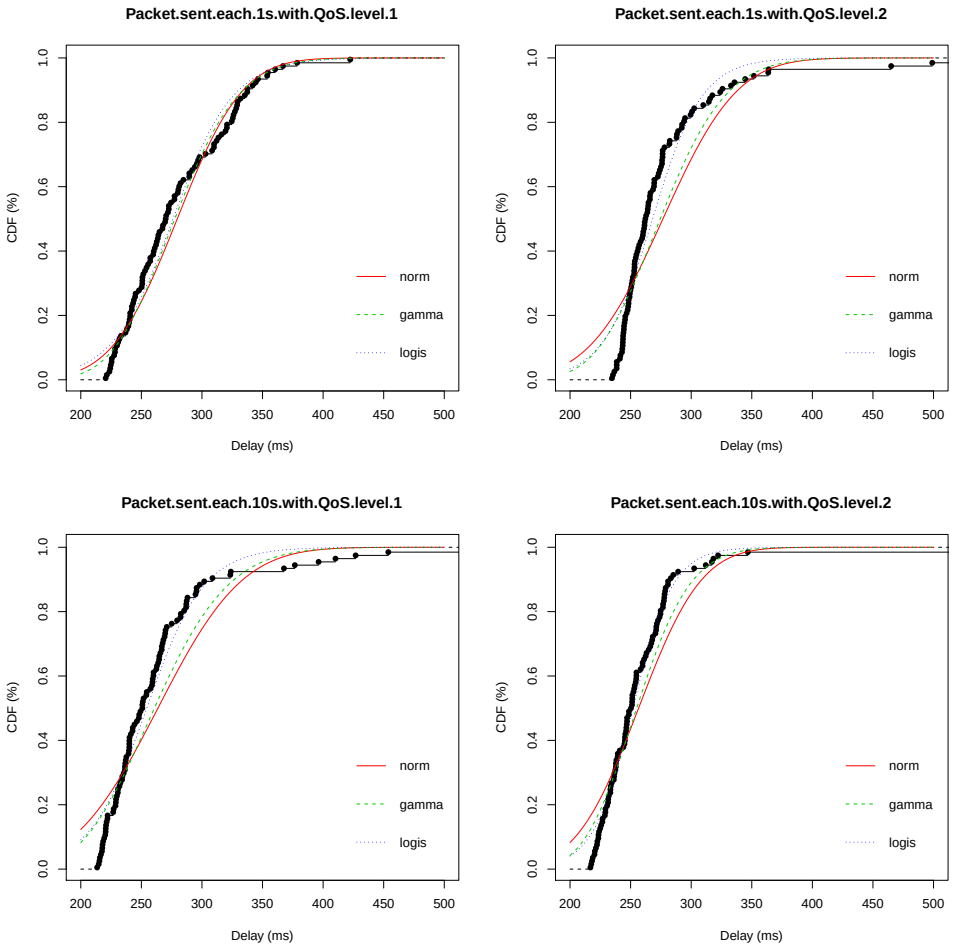

Figure 5: Distributions

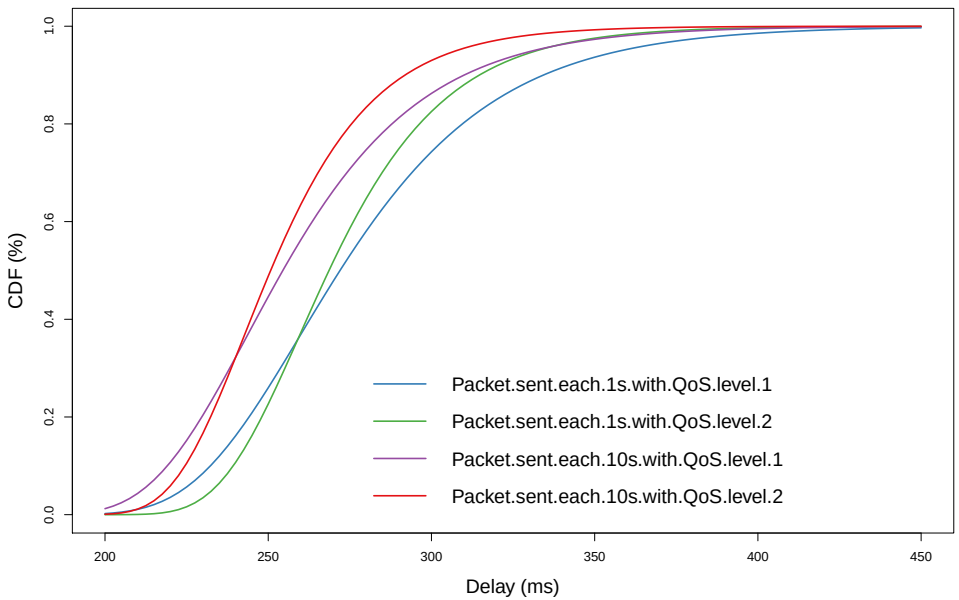

Figure 6: CDF comparison

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Conclusion

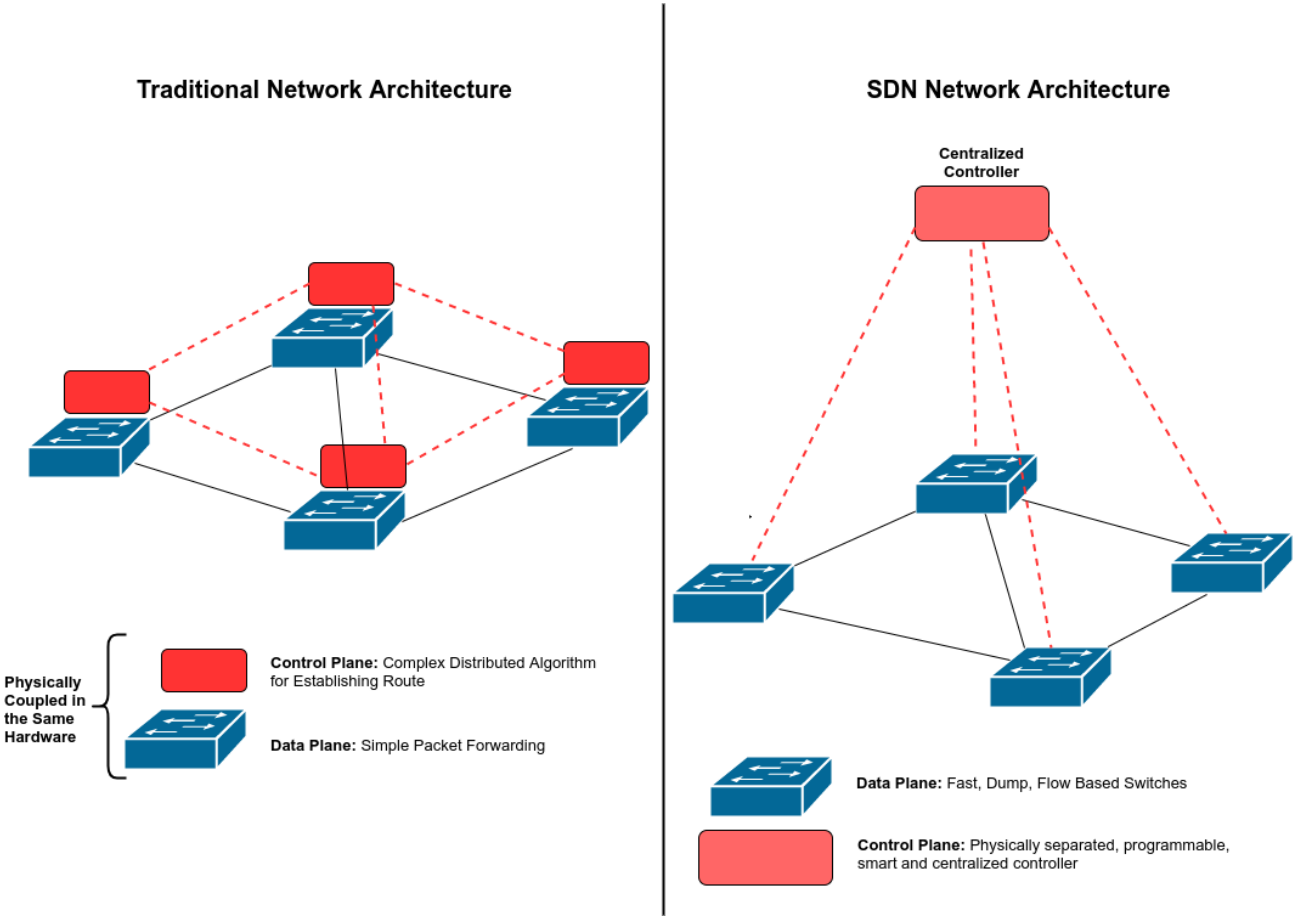

Figure 7: Traditional vs SDN Network

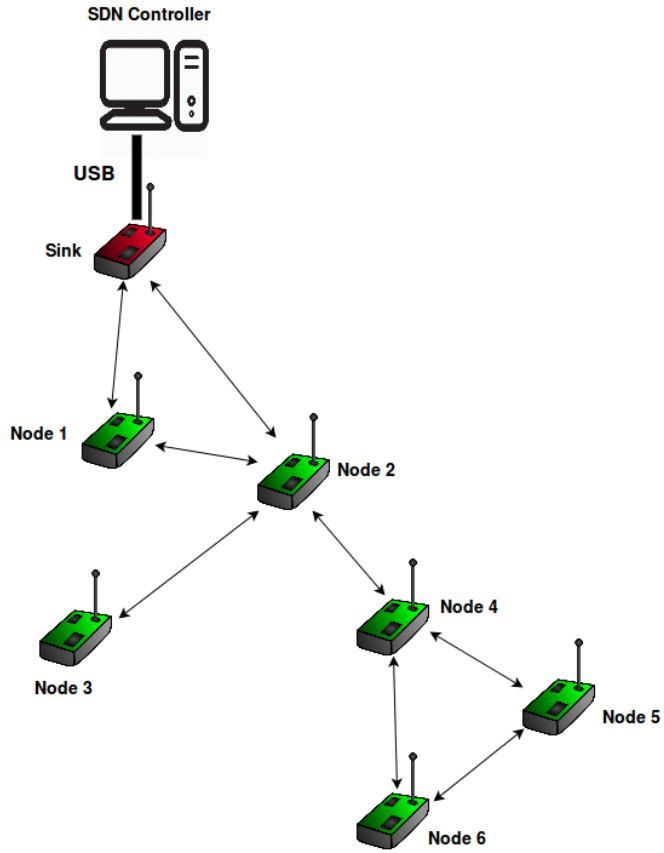

Figure 8: SDN-Controler

Conclusion

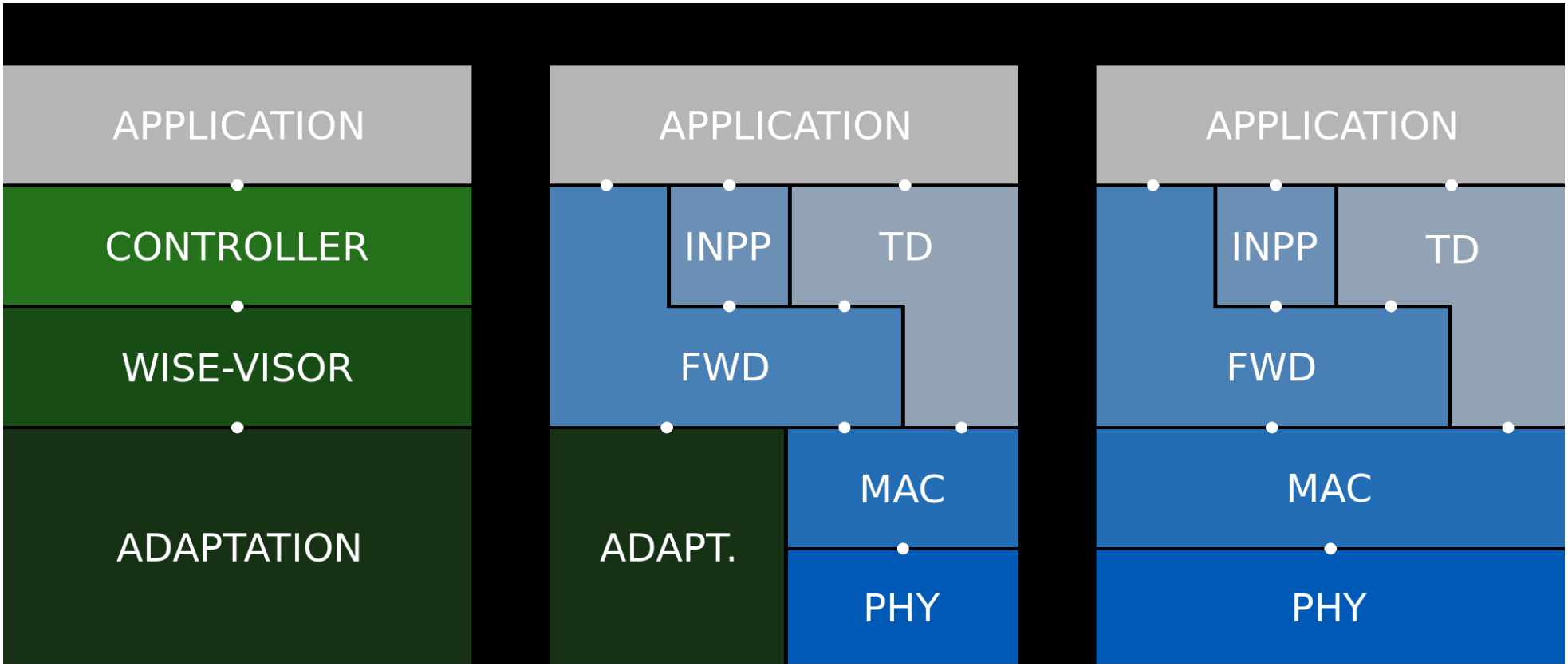

Figure 9: SDN-WISE

Conclusion

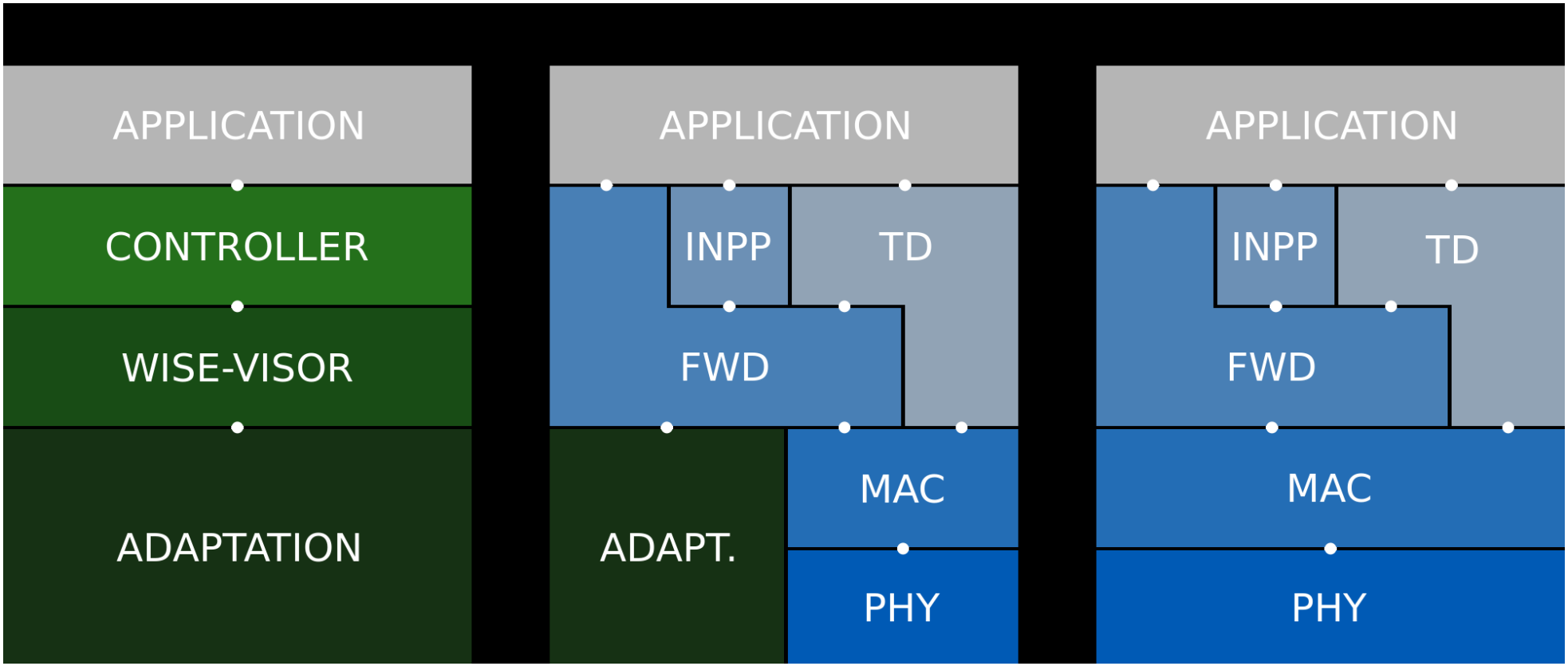

Figure 9: SDN-WISE

Thank you !

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References