



Review of OMCI for In-premises Networks

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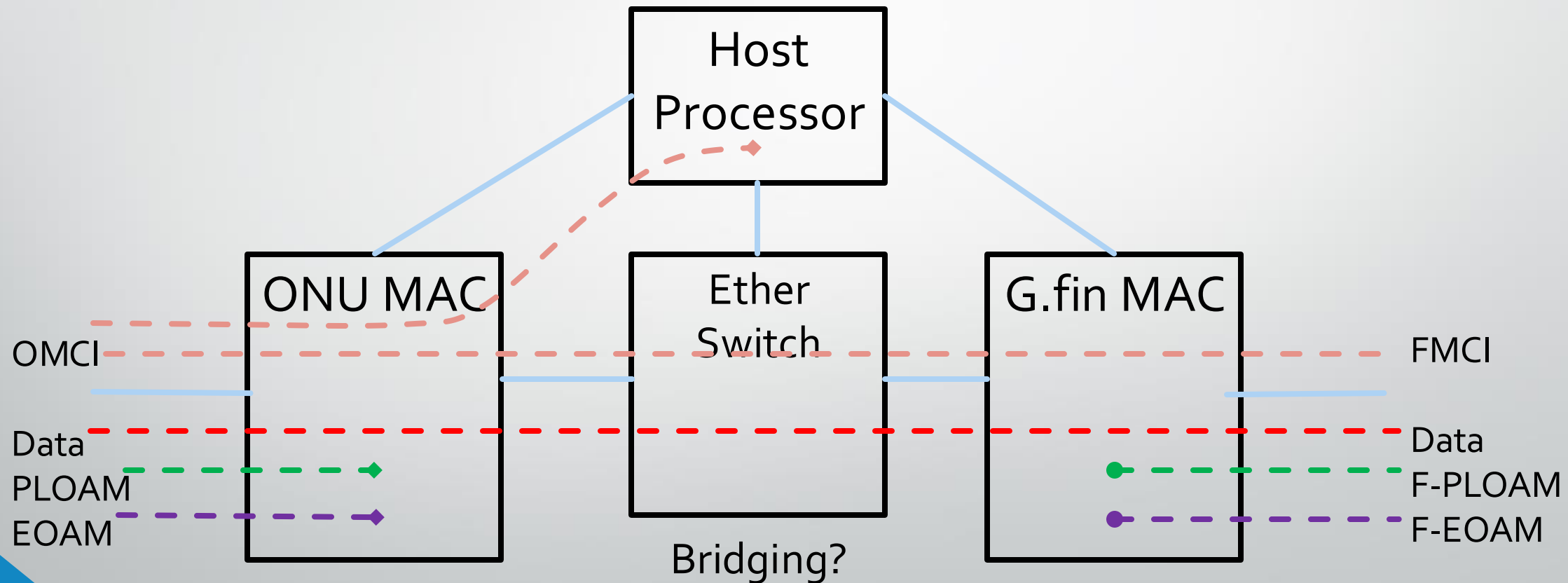
Futurewei Technologies

In the beginning, there was the OMCI

- The ONU management and control interface was initiated back in the APON time (2000, G.983.2) for ONU interoperability
 - At that time, ATM was the anticipated network technology
 - The “service” was simple: ISDN over ATM VCs (can you believe?)
 - In the first version of the OMCI, there was a *single* service model described, and it achieved interoperability quite quickly
- These humble beginnings influenced the design of the OMCI
 - Short cell based messages, with fixed field lengths
 - Various protocol limitations came out of this
 - However, the framework has proven surprisingly extensible, and new features continue to be added every meeting

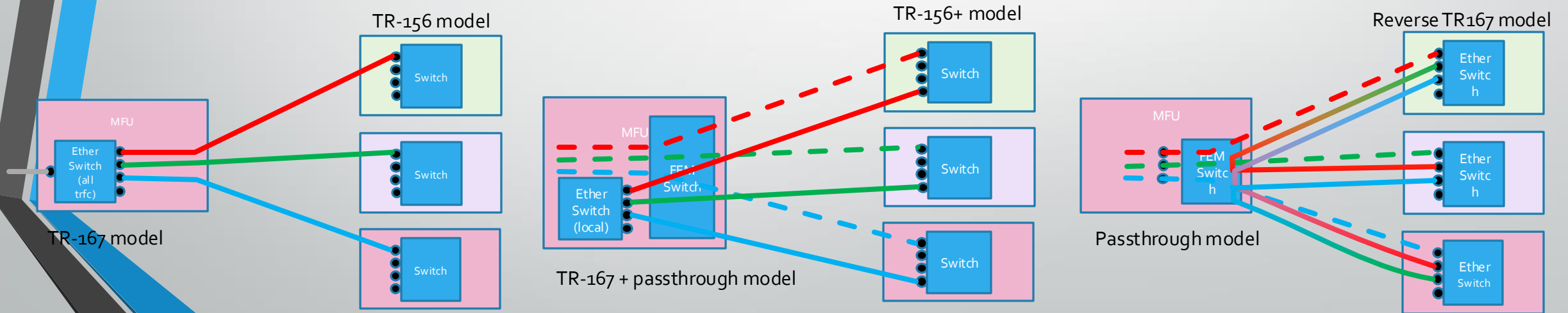
Using PON for Fiber in-Premises networks

- We need to decide how all the embedded flows will be handled in the network



Using OMCI to manage the FiN

- OMCI's major functions include
 - Interface management (all the PPTP UNI's)
 - Software download and control
 - Layer 2 data networking + connecting that to the PON DBA



OMCI for Wi-Fi management

- Wi-Fi is a key part of FiN, since it will be the final link of connection to the user's devices
- Wi-Fi control, coordination, and cooperation are the only way that we can get performance to the wanted level
 - WMCI can serve as an important part of that
 - Any "xMCI" is going to remain a non-real-time control link
 - Real-time coordination can be mediated using the PONTDMA scheme, with the OMCI just providing transition timestamps
- Wi-Fi sensing opens a whole new world of data to consider
 - Depending on the level of data processing on the SFU / MFU's, WMCI might play a role in interfacing to the Wi-Fi sensing

Path forward

- The OMCI has become the worldwide basis for PON interoperability
 - This has been a community effort, and is a great success
- It also looks quite relevant to extend to manage G.FiN
 - In a simple view, this could be just another extension of our beautiful G.988 document
- How to manage this?
 - Just add to G.988: Already too big
 - A stand-alone document: Runs the risk of diverging
 - Perhaps a new member of the series: G.988.1?
 - This might be the best of both worlds