Layer 2 Tag Extensions: EFM Objective

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Ethernet in the First Mile Study Group

Edge Networks: Stating the Obvious

- **Subscribers will be (are!) accessing many different traffic types**
  - **HTTP, Voice, and Video (broadcast & VOD)**
- **Subscribers will demand "*open access*" to multiple service providers**
  - **Competition and variety**
- **Edge networks will be much larger than traditional enterprise LANs**
  - **Millions of connections?**

"Logical Connections" w/ QTags

- **802.1Q/.1p tags used as logical connections between providers & subscribers**
  - **Can be used to establish & manage connections**
- **Supported in existing Ethernet equipment**
  - **Virtual LAN segment deployment & CoS mgmt**
  - **Well understood**
- **Limitations**
  - **The current 12-bit VID provides 4096 VLANs**
  - **Clearly not enough given the magnitude of "edge" networks**

How Many Connections?

- First Pass Answer
  - Double the available VID by adding a 2nd tag?
  - Bumps effective number to 16.8M VLANs
- Is this enough?
- Note: We don't have to answer this today!
  - We simply need to establish an EFM objective to make room for a larger tag

Making Room in 802.3…

- **Increase maxFrameSize to allow for additional tag octets after the QTag**
  - **Decide on the number of additional octets**
  - **Comprehend the impact to 802.3 clauses & MAC parameters**
- **Liaison work is required between 802.3 and 802.1**
  - **Tag content & usage would be developed through this liaison effort**

EFM Objective

- **Provide Media Access Control Parameter Specifications for:**
  - **Allowing an extended maxFrameSize to accommodate additional Layer 2 tag information**