



# CFM YANG

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# Why?



- › Provide a rationale for work on YANG for CFM OAM
  - IEEE 802.1ag
  - ITU-T Y.1731
  
- › Agenda
  - Background and Rationale
  - CFM YANG Focus
  - Module and Tree

# YANG



- › Internet Engineering Steering Group (IESG) provided guidance on NETCONF/YANG
  - <https://www.ietf.org/iesg/statement/writable-mib-module.html>
  - IETF is encouraged to use NETCONF/YANG for configuration and to discourage SNMP MIBs for new work related to configuration.
  - The statement has been adopted in a number of standards bodies
    - › MEF and ITU-T
  
- › There are many organizations writing YANG models for various equipment types, technologies and services
  
- › YANG is on the mind of many!

# Standards Ecosystem



- › Since YANG is a hot topic, there are many groups working in an uncoordinated fashion, leading to duplication of work and confusion
  
- › In order to coordinate the areas that matters to IEEE:
  - Reaffirm the IEEE leadership in 802.1 and 802.3 technologies
  - Engage with the MEF to ensure the MEF Ethernet Services work leverages the IEEE 802.1Q YANG work
  - Engage with the ITU-T to ensure that any YANG work that is started there leverages the IEEE 802.1Q YANG work and coordinates with the CFM YANG work that needs to be done in the IEEE. The ITU-T will work on the Performance Monitoring aspects.

# CFM YANG



- › First... Agree that CFM YANG is needed
  - Getting this progressed sooner rather than later will allow the IEEE to lead the discussion with the ITU-T when the ITU-T starts building the YANG for G.8021/Y.1731.
  
- › Second... How to progress for IEEE 802.1Q
  - Create a YANG project that includes CFM and other TSN protocols
    - › Issue: Would require a new editor
    - › Positive: YANG work focused and YANG contributors can coordinate easily
    - › Positive: Single place for ecosystem partners to coordinate
  - Create a YANG project per protocol
    - › Issue: Silos

# UML



- › IEEE 802.1Qcp
  - Leverages UML to express the Bridge Model in a human readable/understandable way
- › Other organizations are building automated tools
  
- › Recommendation:
  - Create UML in the same style as the 802.1Qcp work
  - Review what other SDO's are doing
    - › See Liaison from ITU-T SG15 for information

# Coordination required



## > ITU-T

- Terminology differences between CFM and Y.1731 provide some challenges when trying to leverage any CFM work to be the basis for PM work.

## > MEF

- The following table provides a flavor of the issue

ITU-T Y.1731 Term	IEEE 802.1Q Term	MEF
Maintenance Entity Group (MEG)	Maintenance Association (MA)	MEF uses MEG.
Maintenance Entity Group Identifier (MEG ID)	Maintenance Association Identifier (MAID)	MEF uses both MEG ID and MAID.
—	Maintenance Domain (MD)	There is no ITU equivalent of this term. The MEF uses MD only when describing the format of a MAID.
Maintenance Entity Group Level (MEG Level)	Maintenance Domain Level (MD Level)	The MEF uses MEG Level.

# CFM YANG Module



- › Current thinking is to place the CFM branch under
  - dot1q:bridge:
- › High-Level Tree
  - /dot1q:bridges/dot1q:bridge:
    - › rw cfm
      - rw default-md
      - rw md
      - rw ma
      - rw mep
      - ro config-error-list
      - ro stack
    - notifications:
      - › n fault-alarm



# Draft Module and Tree



## › Draft Module



**ieee802-dot1ag-cfm.yang**

## › Draft Tree



**ieee802-dot1ag-cf  
m.tree**

# Thanks



- › Summary
- › CFM for YANG is needed and timely
- › A draft CFM module is presented
- › Discuss placement of branch
- › Coordinate with ITU-T on how to leverage .1Q work and CFM work (needed because of terminology differences)
- › Coordinate with MEF to encourage leveraging CFM work