# PCEP Extensions for Topology Filter

draft-xpbs-pce-topology-filter-00

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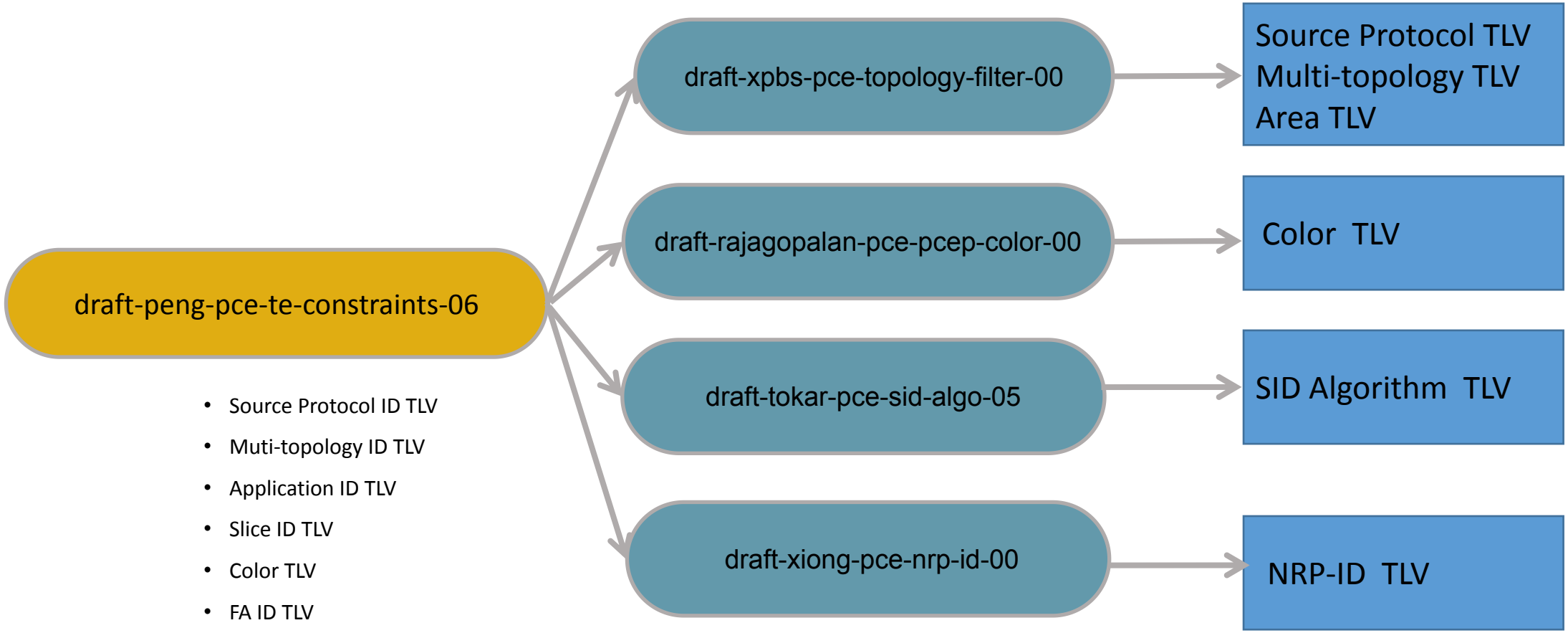
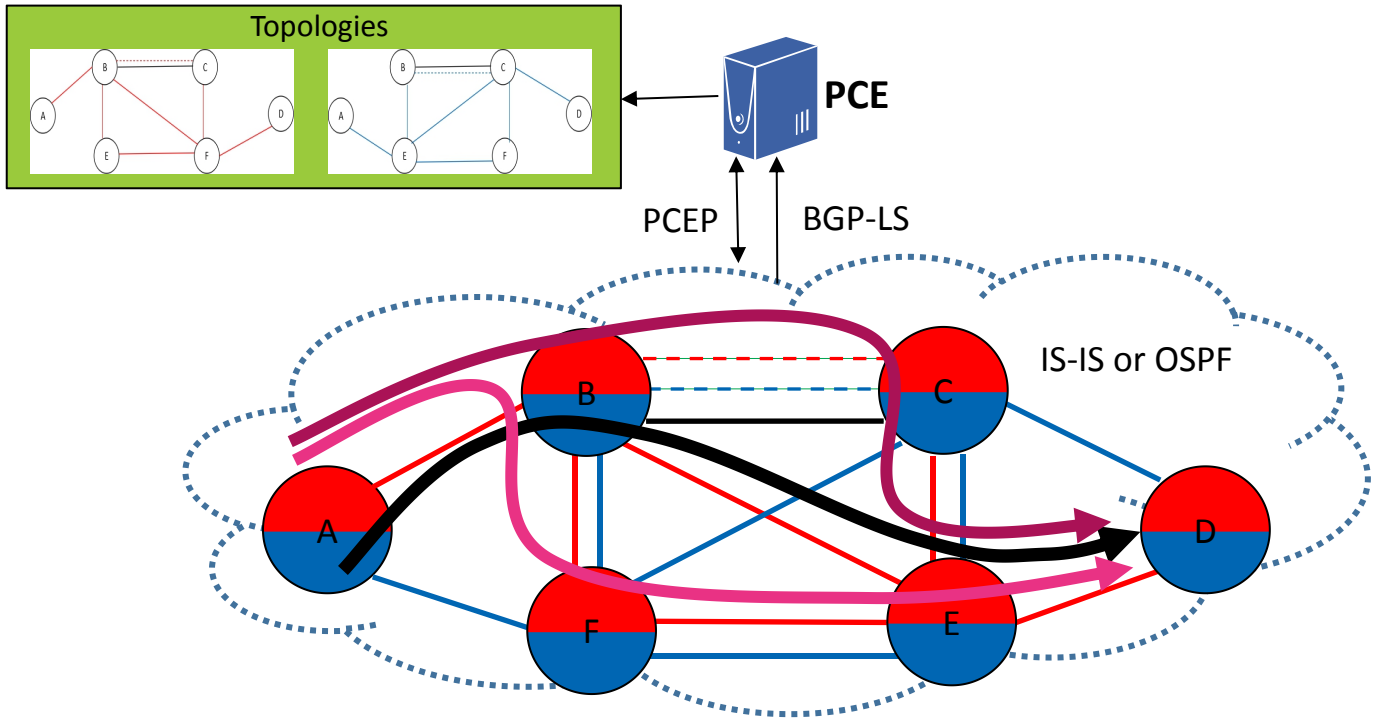
# Recap

- draft-peng-pce-te-constraints-06 proposes a set of constraints for PCEP with the network information and has been replaced by servaral drafts as the following shown.



# Overview of Topology Filter

- A topology filter is a data construct that can be applied on either a native topology or a user specified topology. and can be viewed as a set of filtering rules to construct the sub-topology.
- This document proposes a set of extensions for PCEP to support the topology filter as the topology constraints during path computation.



# TOPOLOGY Object

- This document defines a new TOPOLOGY object to carry the topology filter. The following TLVs can be carried in TOPOLOGY object.
  - Source Protocol TLV
  - Muti-topology TLV
  - Area TLV
  - SID Algorithm TLV (draft-tokar-pce-sid-algo-05)

TOPOLOGY Object-Class is TBD1.

TOPOLOGY Object-Type is TBD2.

The format of the TOPOLOGY object body is:

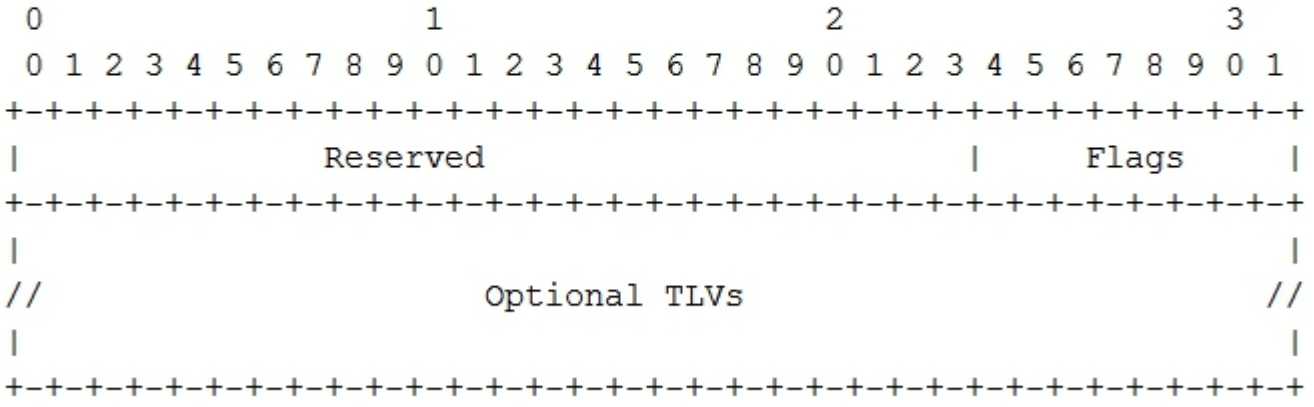



Figure 1: TOPOLOGY Body Object Format

# TLVs for TOPOLOGY Object

- Source Protocol TLV
  - Sub-topology identified by the specific source protocol ID.
  - Protocol-ID and Identifier is defined as IS-IS [RFC8202], OSPF [RFC6549], BGP-LS [RFC7752].
- Multi-topology TLV
  - Sub-topology identified by the specific Multi-Topology ID within a source protocol.
  - Multi-Topology ID : as defined in IS-IS [RFC5120], OSPF [RFC4915], BGP-LS [RFC7752]
- Area TLV
  - Sub-topology identified by the specific Area ID.
  - Area-ID: Area identifier as defined in RFC7752.

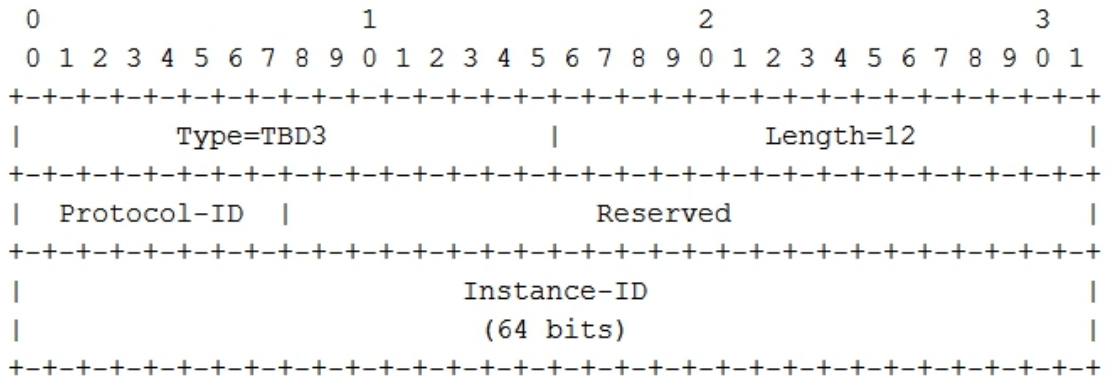


Figure 2: Source Protocol TLV

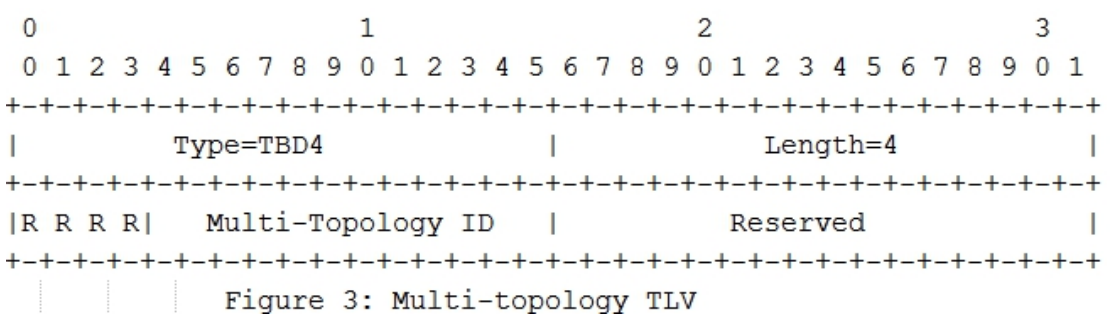


Figure 3: Multi-topology TLV

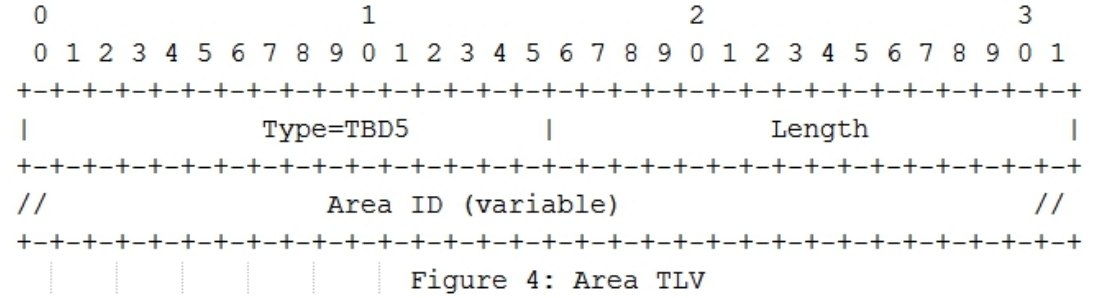


Figure 4: Area TLV

# Include-any, include-all and exclude filtering rules

- The topology filters carries a list of filters. Each filter specifies a set of include-any, include-all and exclude filtering rules that can be applied on the native topology. This document proposes a set of extensions for IRO and XRO object.
  - Link ID subobject
    - defined in IS-IS RFC5307 and OSPF RFC3630.
  - Admin Group subobject
    - Extended Administrative Group as defined in [RFC7308].
  - Source Protocol subobject
    - Protocol-ID and Identifier is defined as IS-IS [RFC8202], OSPF [RFC6549], BGP-LS [RFC7752].

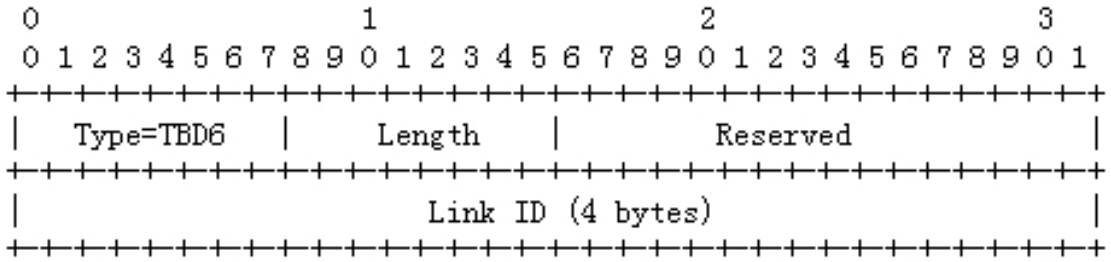



Figure 5: Link ID subobject in IRO

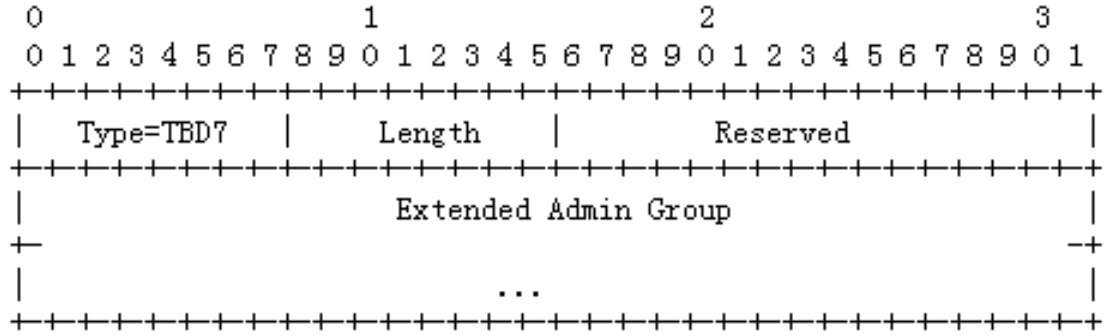



Figure 6: Admin Group subobject in IRO

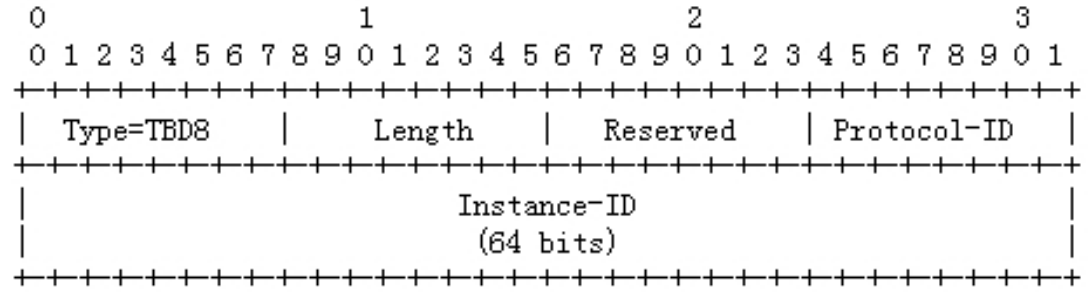



Figure 7: Source Protocol subobject in IRO

# Next Step

- Comments and discussions are very welcome!

Thank you!