

# DetNet Data Plane Encapsulation – Recent updates and plan

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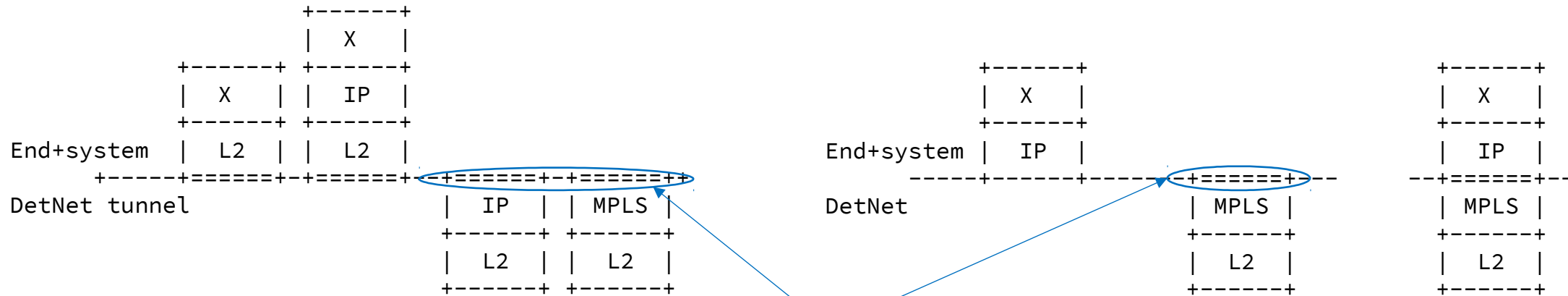
# Updates from -02 to -03 (since interim 3)

- Addition of the text contribution from Balazs
  - 5.2. DetNet domain specific considerations
    - 5.2.1. DetNet Bridging Service
      - I.e. L2VPN type of solution
    - 5.2.2. DetNet Routing Service
      - MPLS PSN and IP PSN type solutions
    - 5.3. DetNet Inter-Working Function (DN-IWF)
      - 5.3.1. Networks with multiple technology segments
      - 5.3.2. DN-IWF related considerations
- Addition of the text contribution from Jouni
  - 5.2.2.3. Simplified IP Service

# Updates from -03 to -04

- Addition of the text contribution from Jouni:
  - Removal of “native IPv6” DetNet data plane solution.
  - More clarifications to simplified IP service.
  - Added reference to previous draft version that discussed IP PSN and MPLS over IP (RFC4023 and 7510) in PWE context.
- A bit of history:
  - A wide range of data plane options were collected and analyzed:
    - <https://tools.ietf.org/html/draft-ietf-detnet-dp-alt-00>
  - Selection was made based on the analysis (in previous step)
  - Initial preference was towards unified DetNet Service Layer (using PWE constructs), which was documented in <https://tools.ietf.org/html/draft-ietf-detnet-dp-sol-00>. It had both MPLS over IP and MPLS transports in PWE context.
  - The unified approach has been argued to be removed claiming no existing support for IP PWE.
  - => Therefore, we ended up defining alternative IP solution

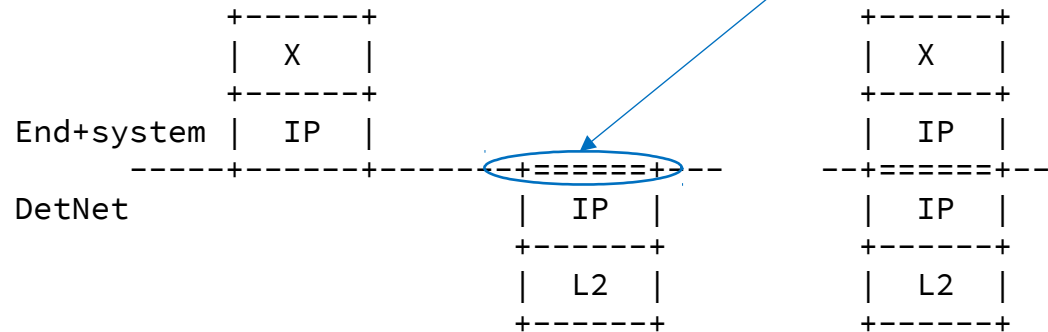
# Routing service encapsulations listed in draft



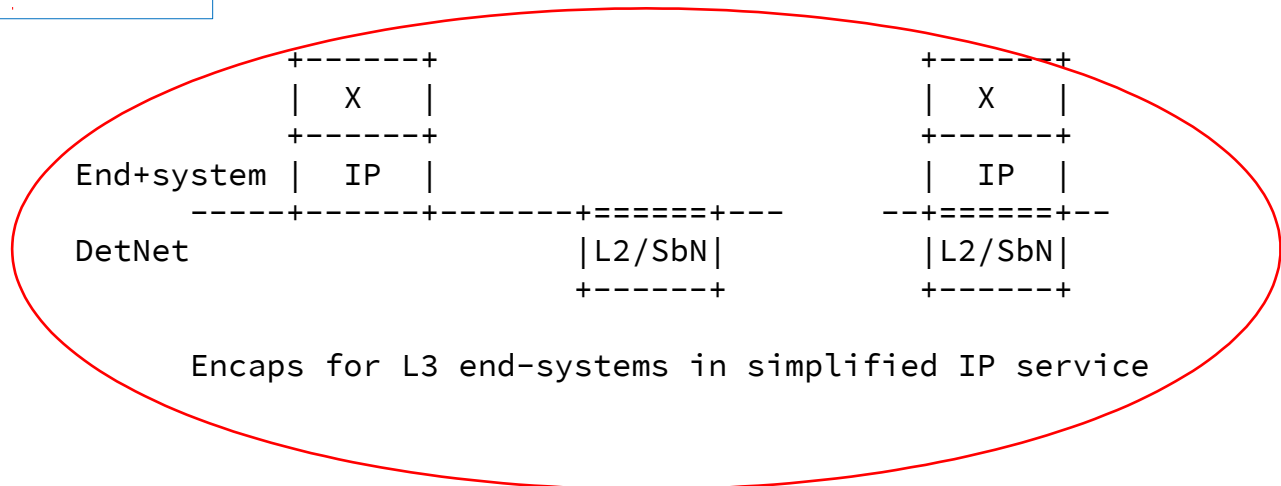
Encaps for DetNet bridging

The Service Layer shims  
Could be the same

Encaps for L3 end-systems over MPLS



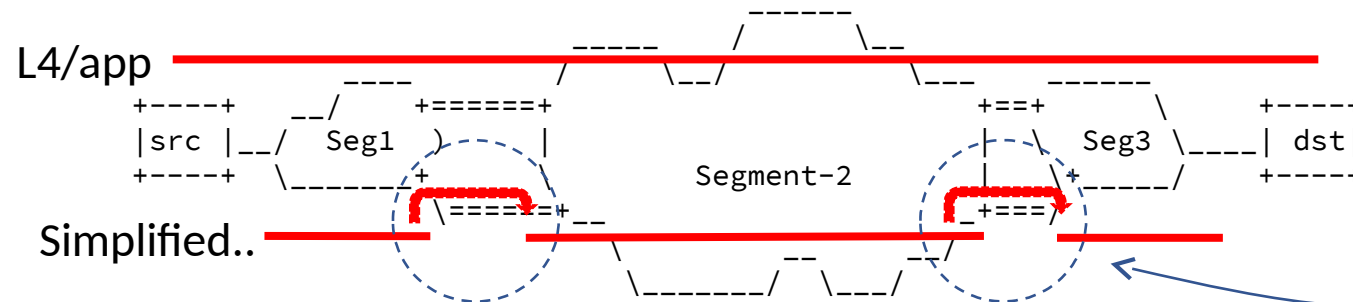
Encaps for L3 end-systems over IP



Encaps for L3 end-systems in simplified IP service

# Consensus from interims

- Add the “simplified IP data plane service” with 6-tuple “flow identification” (i.e. 5-tuple + DSCP)
- Underlying link/sub network responsible for DetNet functions
- An IP packet 6-tuple is matched at each hop and mapped to an appropriate DetNet capable link/sub network and its “DetNet params”
- Pros: Simple and does not require anything from the application IP..
- Cons: Packet duplication and packet elimination service layer function is per segment.. End-2-end would require L4/app protocol modifications..



# What next?

- Split the document to
  - MPLS-based data plane
  - Simplified IP data plane
- Input from other contributors (there's goods new text around..)
- Work on missing things on both.. A lot of those.
- Consider dividing “MPLS-based” to MPLS PSN and IP PSN ?