

PWE3 Protocol Layering

PWE3 IETF-52 December 12, 2001

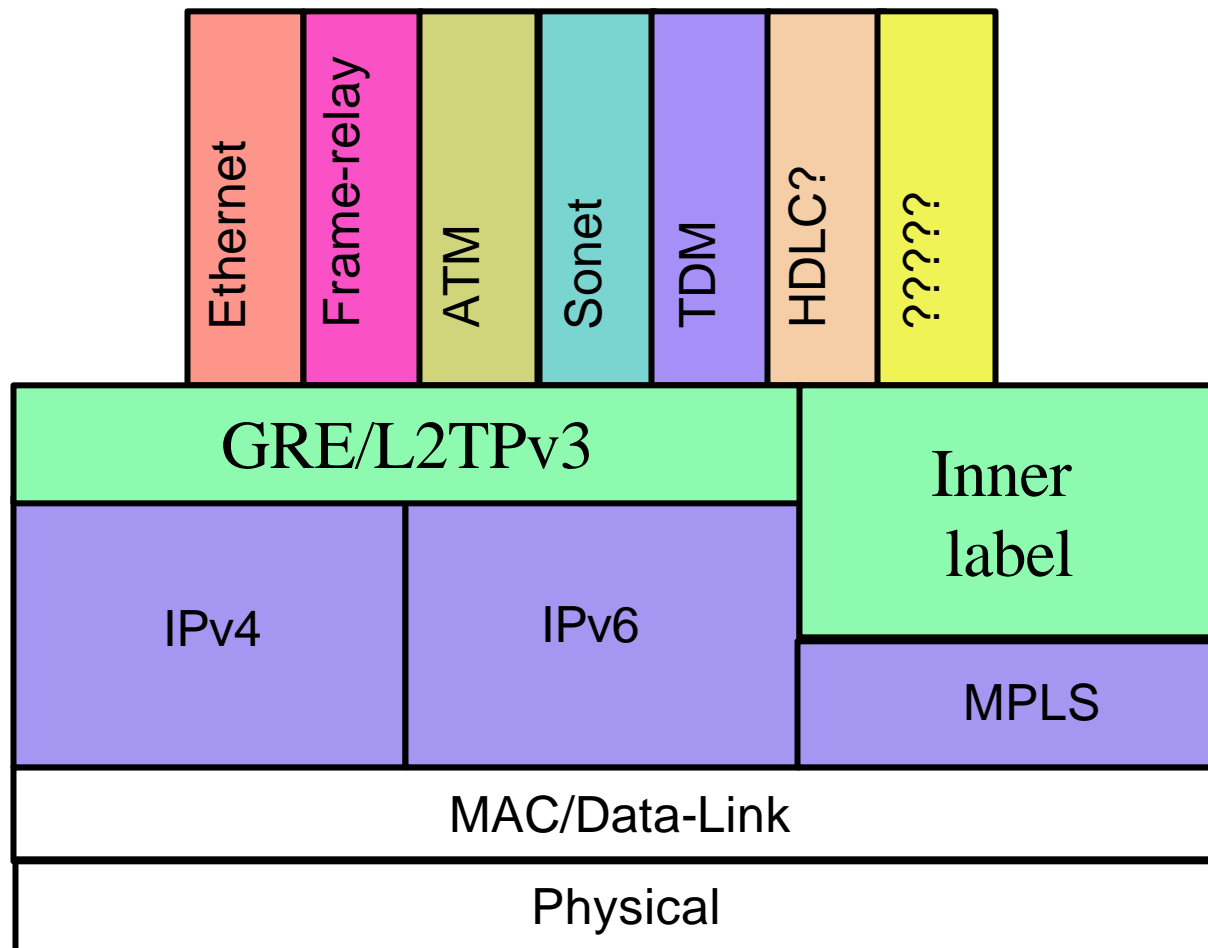
Stewart Bryant <stbryant@cisco.com>

Lloyd Wood <lwood@cisco.com>

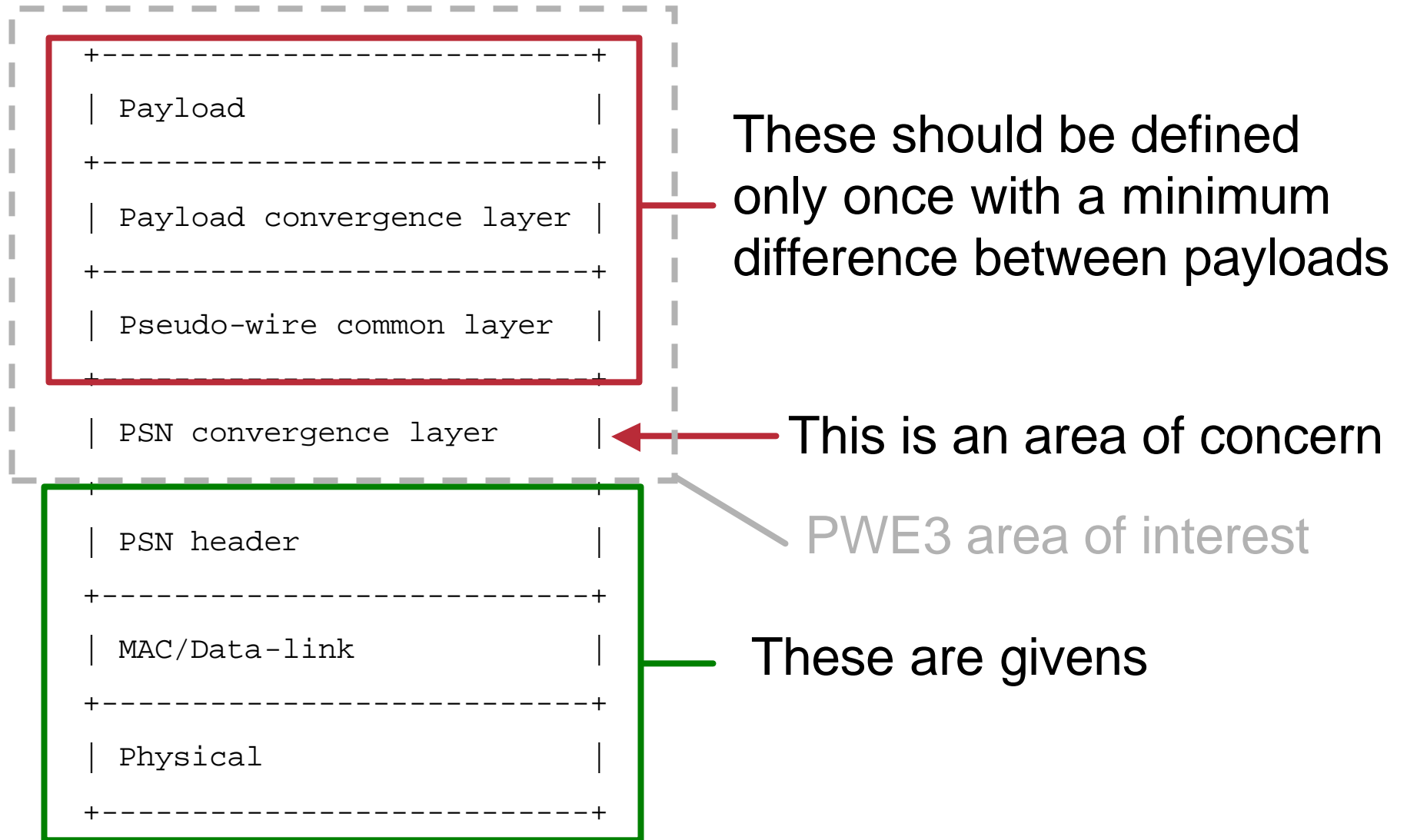
Layering issues

- Current PWE3 approach is piecemeal with each payload design team proposing a point solution.
- Example: Ethernet and Frame-relay, but not Packet (which could carry both and others besides)
- Example: TDM services defining specific real-time support, requiring new packet services to define real-time (ie DVB TS)
- Example: No definition of requirements for network layer carrying PWE3, leading to clash between IP and MPLS focused participants.

Present PWE3 layering approach

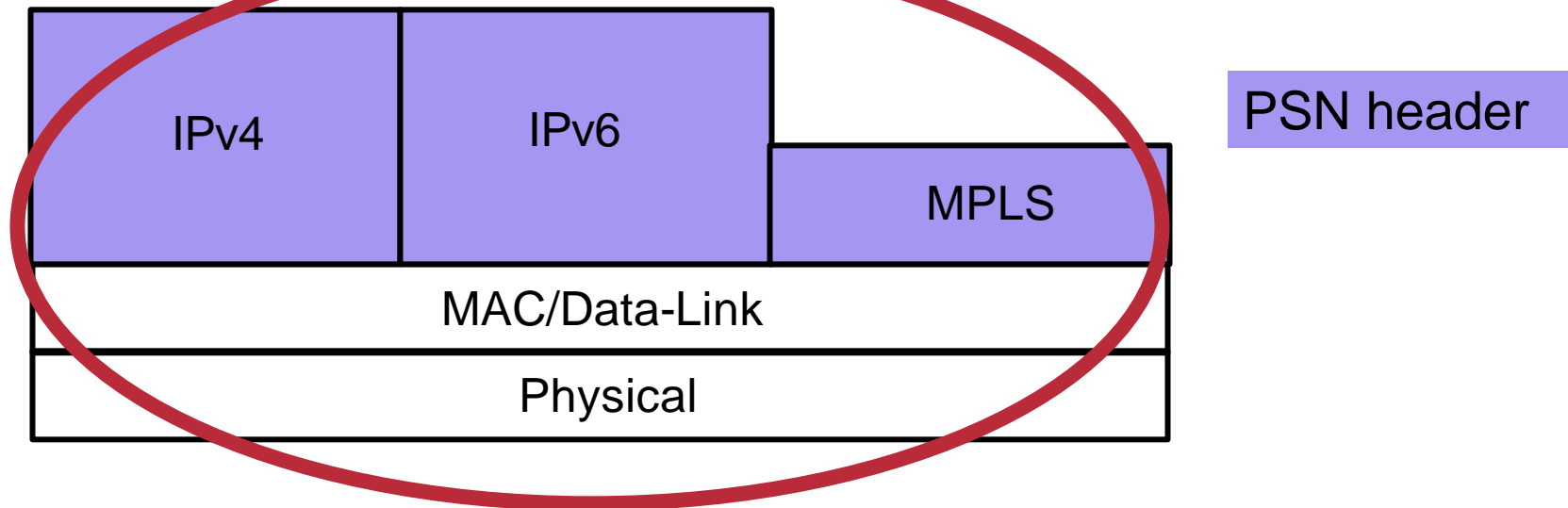


Protocol Layering Model

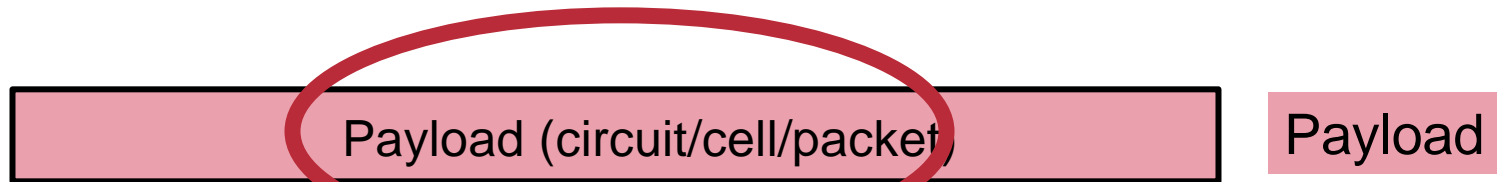


PSN Header

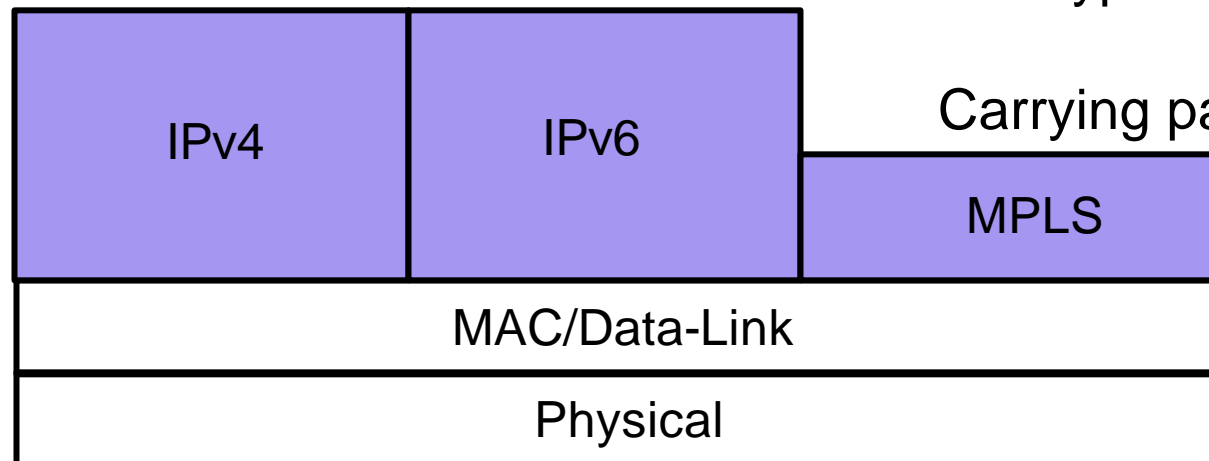
There is agreement that these are the lower layers



Payload

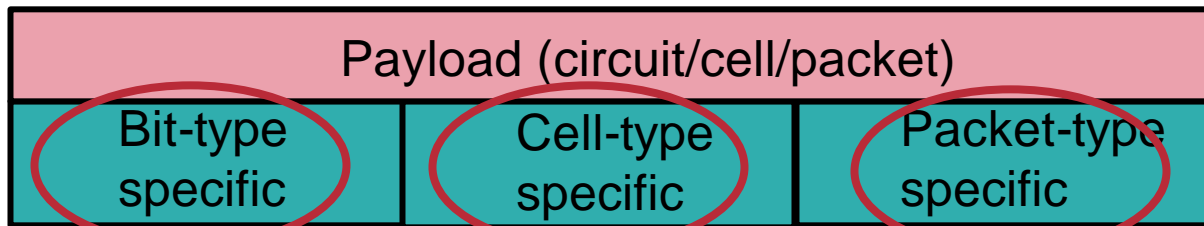


Use of generic payload types reduces number and scope of definitions and give guidance on how to support new types.



Carrying payloads unchanged transparently is simpler and leads to greater flexibility.

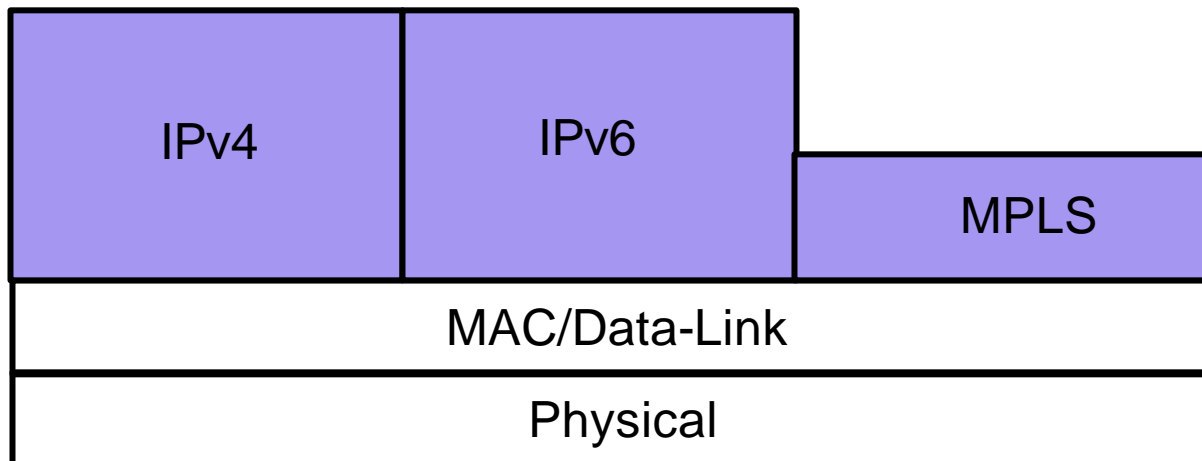
Payload Framework



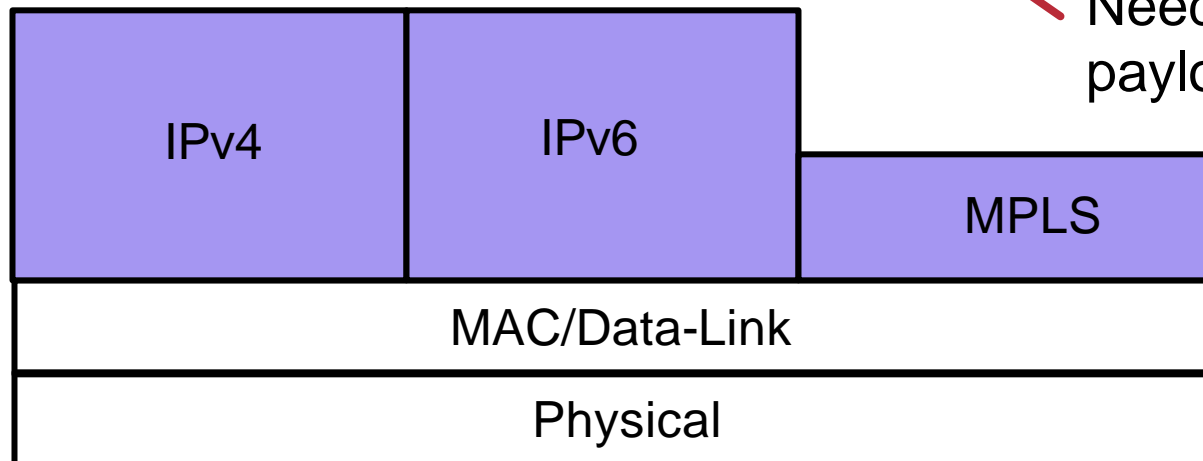
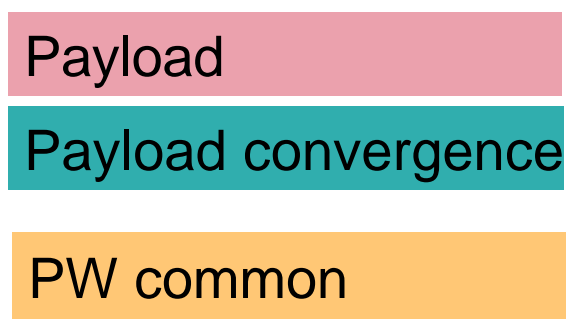
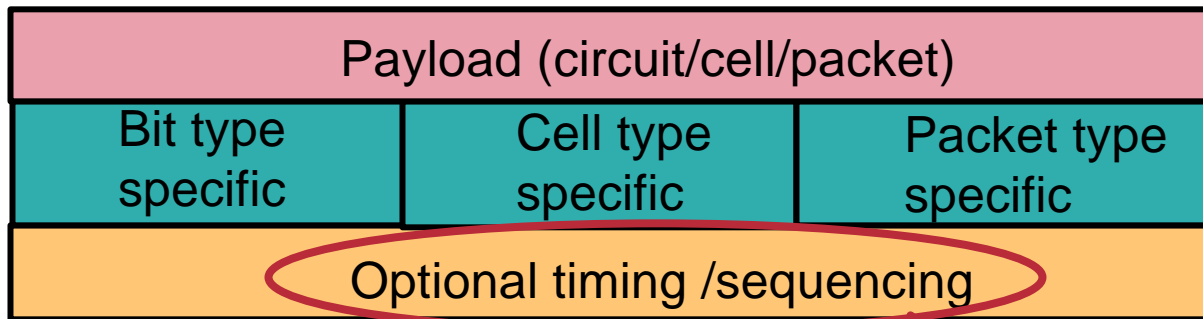
Payload

Payload convergence

Needed to carry "replay context" info. Area of maximum type difference. Goal is minimum number of sub-types.



Payload common support

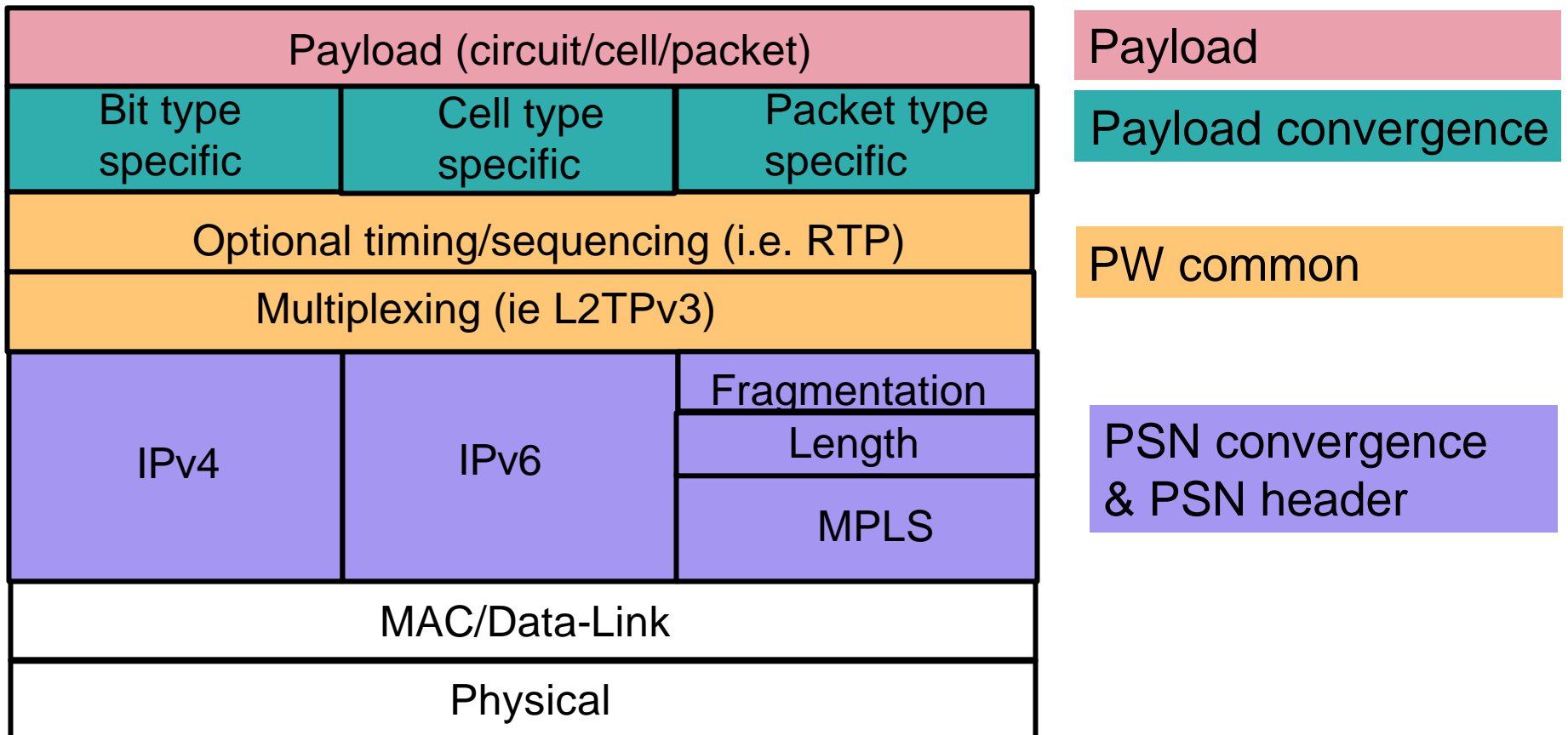


Needed for all generic payload types.

Requirements may evolve with time as new payload and PSN characteristics change.

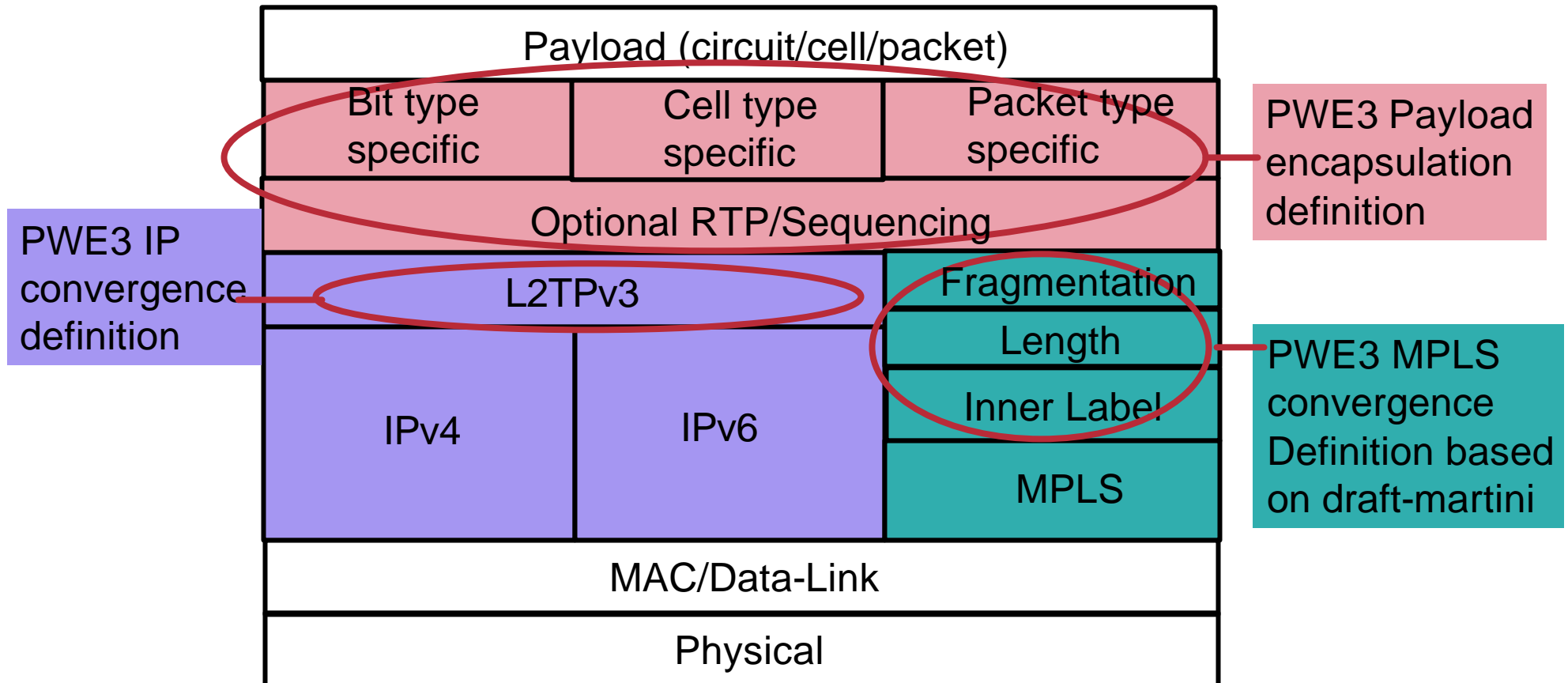
A proposed protocol layering

Focus of PWE3 - above common multiplexing layer



Alternative layering model

Focus of PWE3 - above a PSN specific multiplexing layer



Recommendations

- A layering model be incorporated in the PWE3 framework draft.
- We move to generic, rather than individual, payload types.
- Payloads sent transparently (as received), making translation for switch support a value-added service.
- We define operation of PWE3 over IP and MPLS separately.