

1588 over MPLS Update

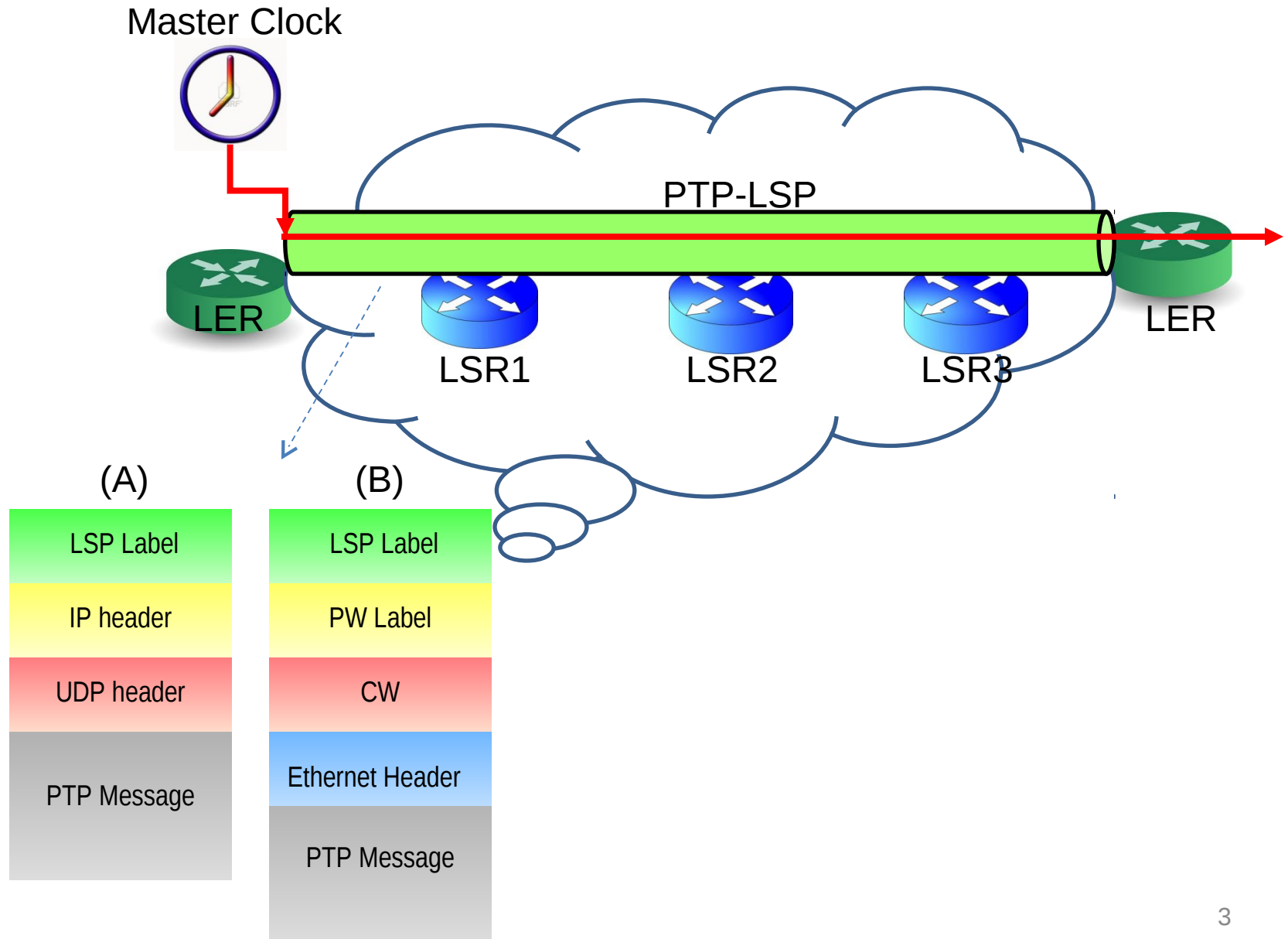
draft-ietf-tictoc-1588overMPLS-02

IETF 84 (Vancouver), July 2012
Shahram Davari

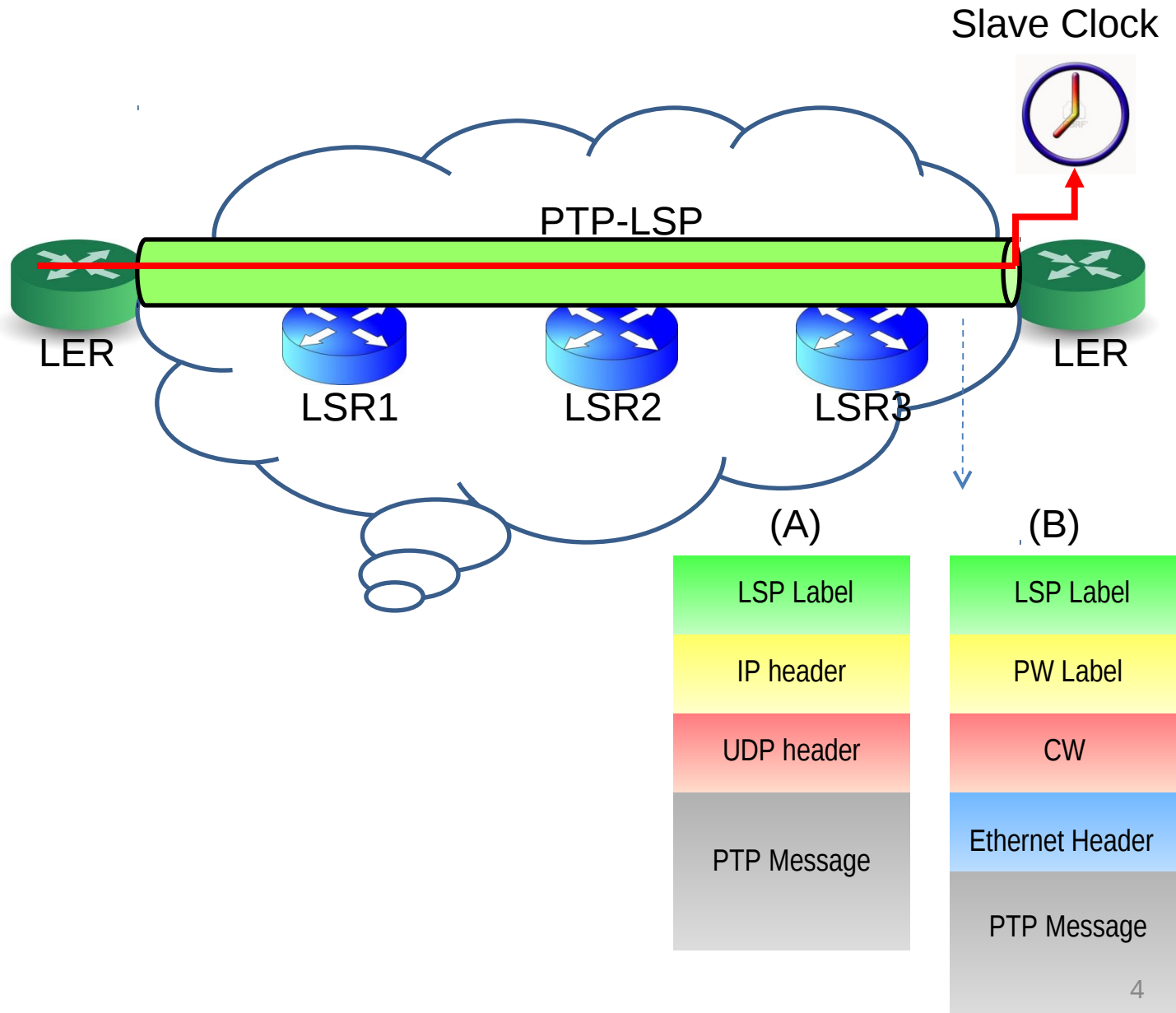
Requirements

- Transport 1588 messages over MPLS network
- Support Master, Slave, Boundary Clock and Transparent Clock at LER
- Support Transparent clock at LSR
- Backward compatible with non-1588-Capable LSRs

Master Clock at LER

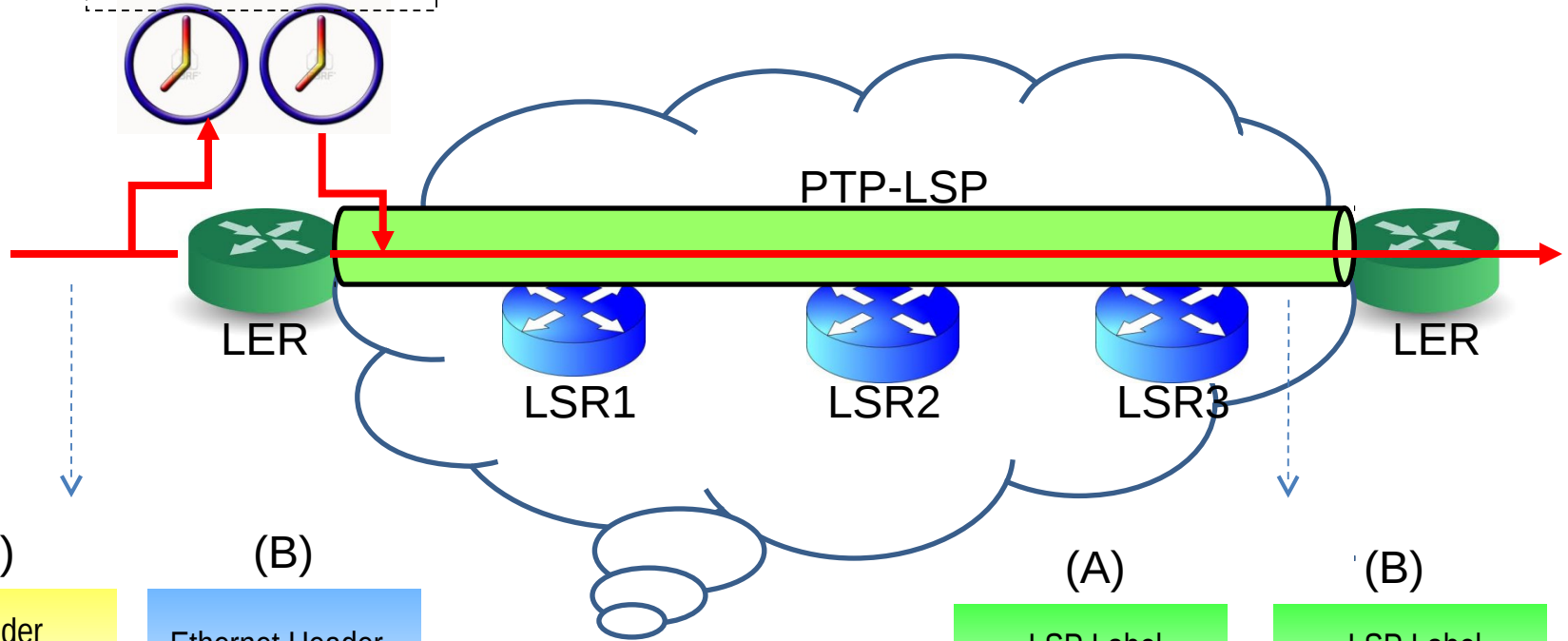


Slave Clock at LER

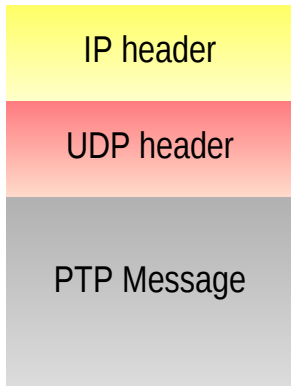


Boundary Clock at LER

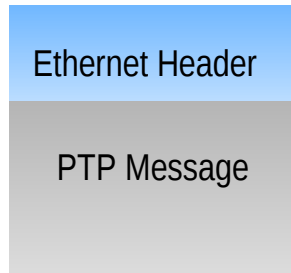
Boundary Clock
Slave Clock Master Clock



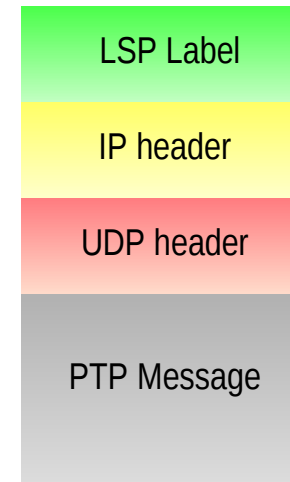
(A)



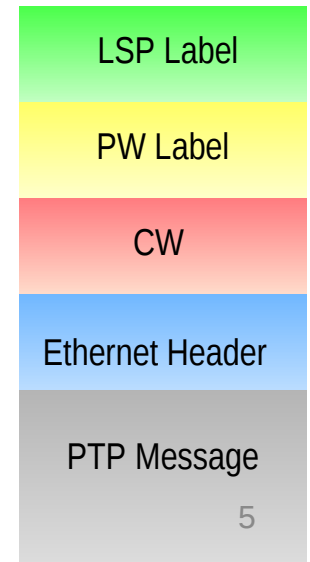
(B)



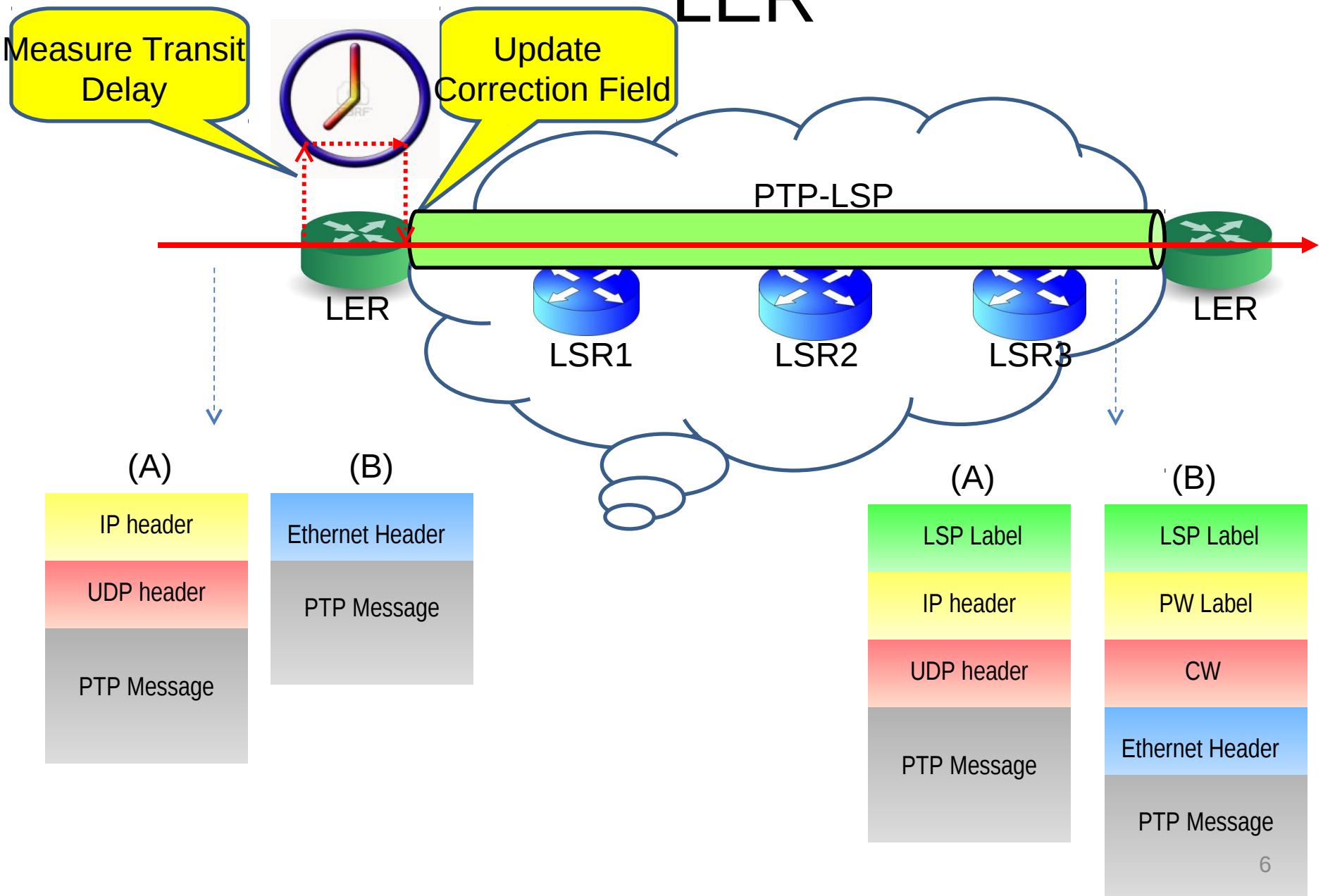
(A)



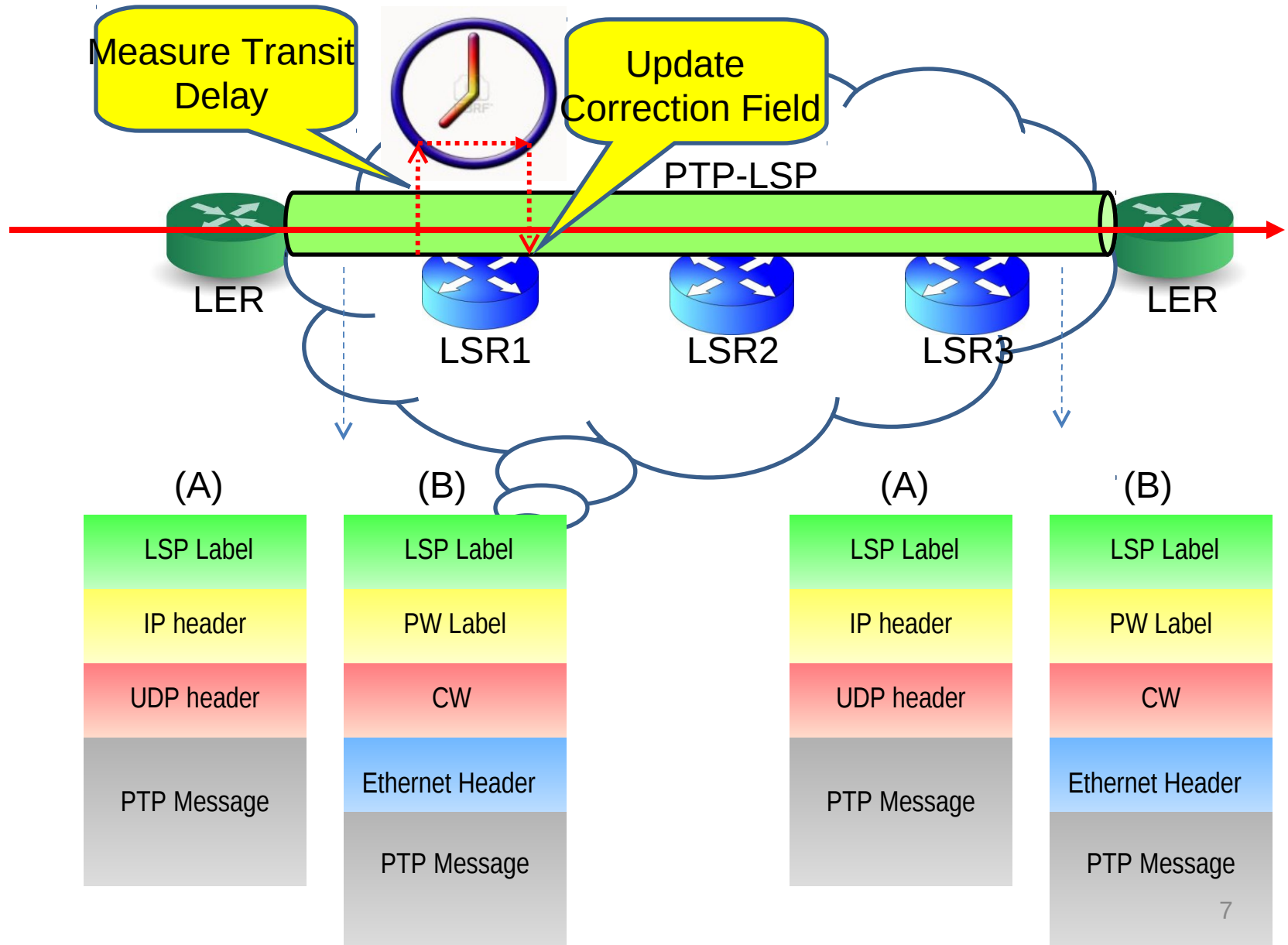
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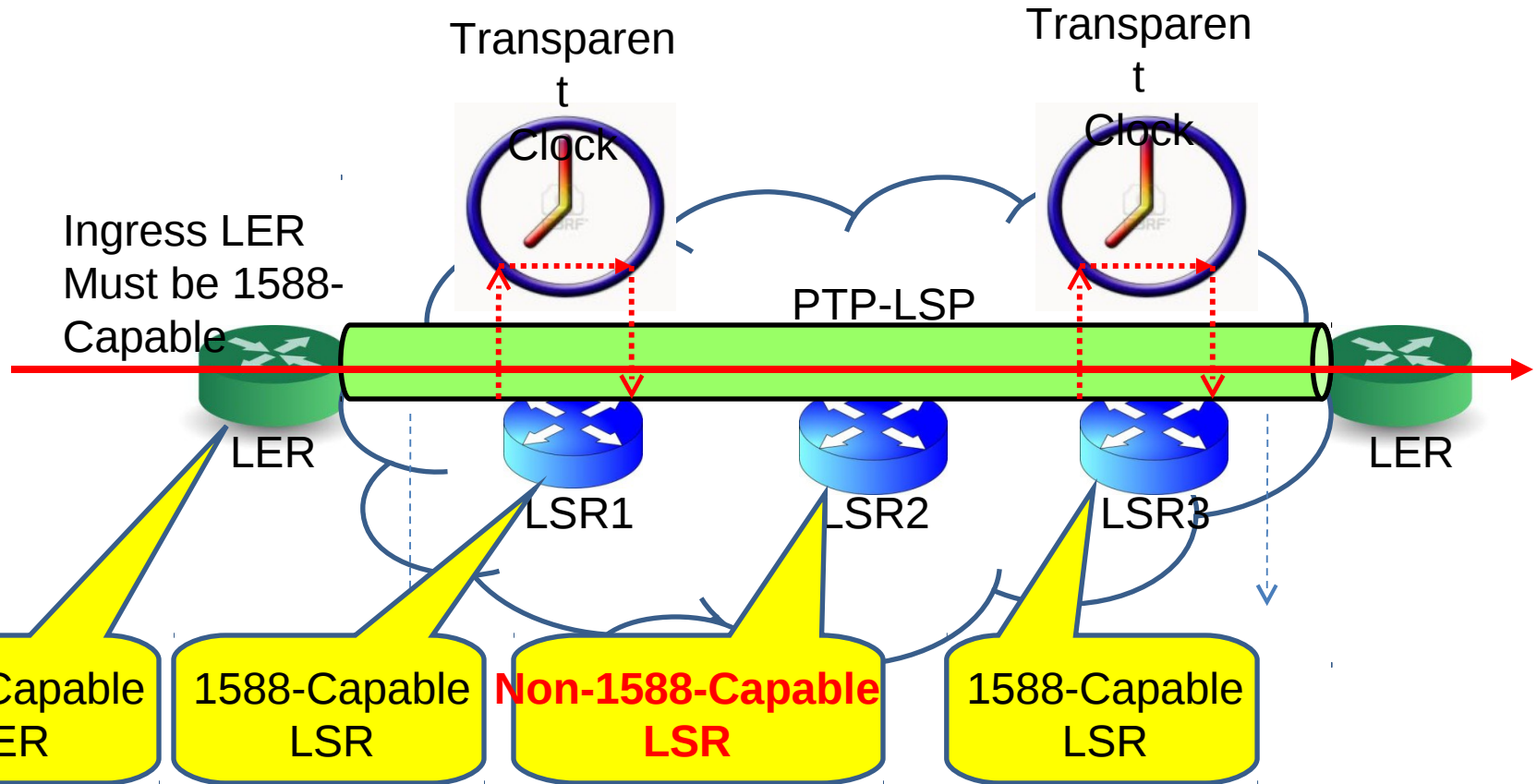
Transparent Clock at LER



Transparent Clock (TC) at LSR



Backward Compatibility



Current Solution draft-02

- Use standard Encapsulation
 - IP/MPLS or PW
- Use ***Dedicated*** LSPs/PWs to carry 1588
 - To detect 1588 messages without DPI
- PTP LSP/PW is signaled
 - RSVP-TE extension
 - LDP, BGP PW signaling extension (FFS)
- Routers advertise their 1588-capability
 - OSPF, IS-IS extension

Proposed Enhancements to draft-03

- Draft-03 to only describe data plane behavior
- Separate drafts needed for each of the Routing and Control Plane protocol enhancements
- Make the solution more generic solution
 - Support PTP, NTP, Special Shim, etc.
- Support Time-stamping and Correction Field update

Proposed Enhancements to draft-03

- Signal the following in OSPF, ISIS
 - 1588 capability per-port
- Signal the following via LDP, BGP, RSVP-TE
 - Offset to the Timing message
 - Timing message type (PTP, NTP, Special Timing Shim, etc)
 - Action Type (TS or CF update)

Status

- Draf-00 published Jan 2011
- Draft-02 published Oct 2012
- Draft-03 was written but not officially released
 - Plan is to release draft-03 after Vancouver meeting based on feedback from affected WGs

Next Step

- Require review and comments from:
 - TICTOC WG
 - MPLS WG
 - PWE3 WG
 - OSPF WG
 - ISIS WG
- Publish draft-03