

# Path MTU Discovery in BIER Layer

draft-mirsky-bier-path-mtu-discovery-00

Greg Mirsky      [gregory.mirsky@ericsson.com](mailto:gregory.mirsky@ericsson.com)

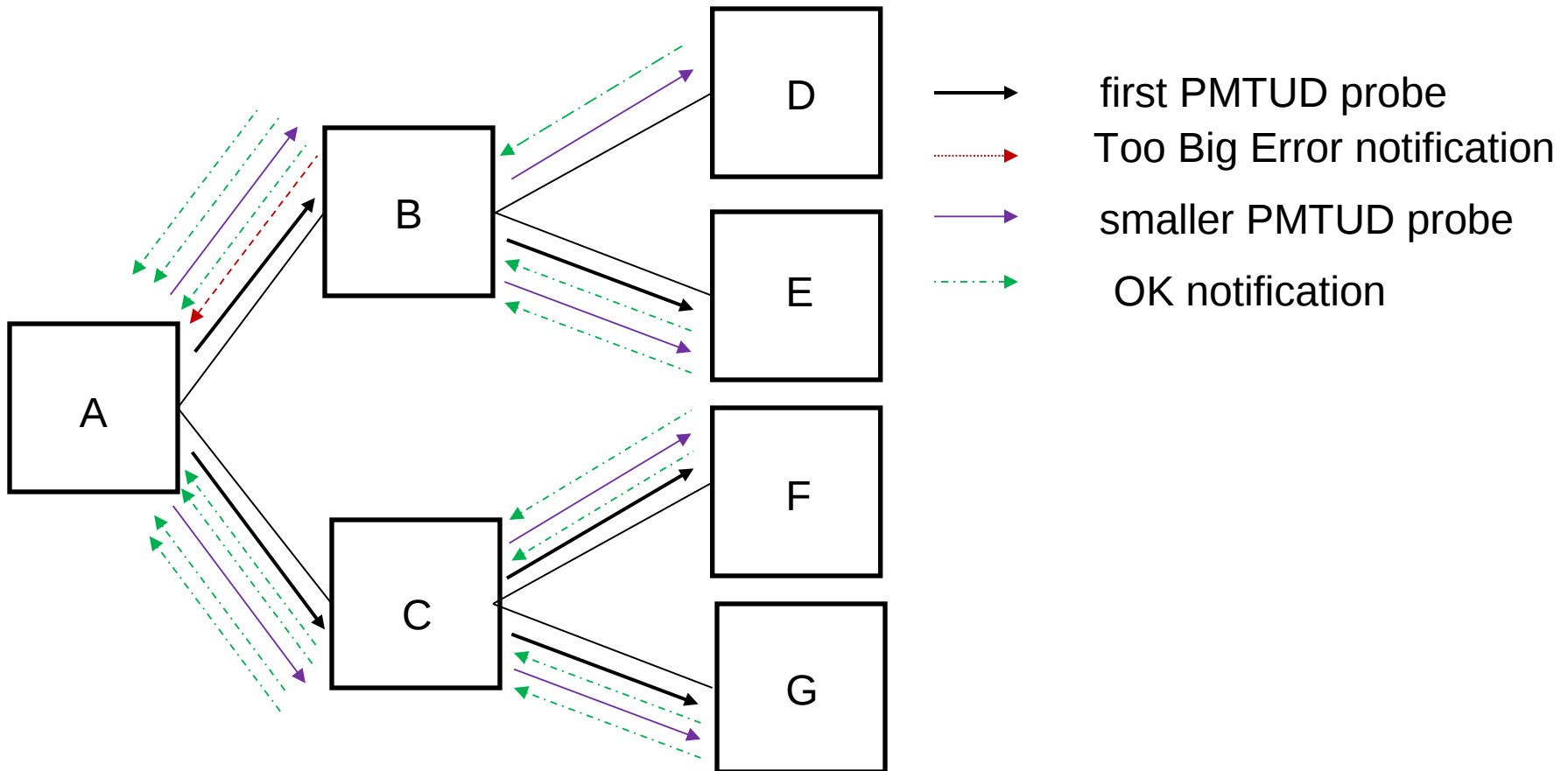
Antoni Przygienda [antoni.przygienda@ericsson.com](mailto:antoni.przygienda@ericsson.com)

Andrew Dolganow [andrew.dolganow@alcatel-lucent.com](mailto:andrew.dolganow@alcatel-lucent.com)

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# Problem Statement

- BIER layer OAM needs Path Maximum Transmission Unit (MTU) Discovery solved
- Existing PMTUD is inefficient



# Proposed Solution

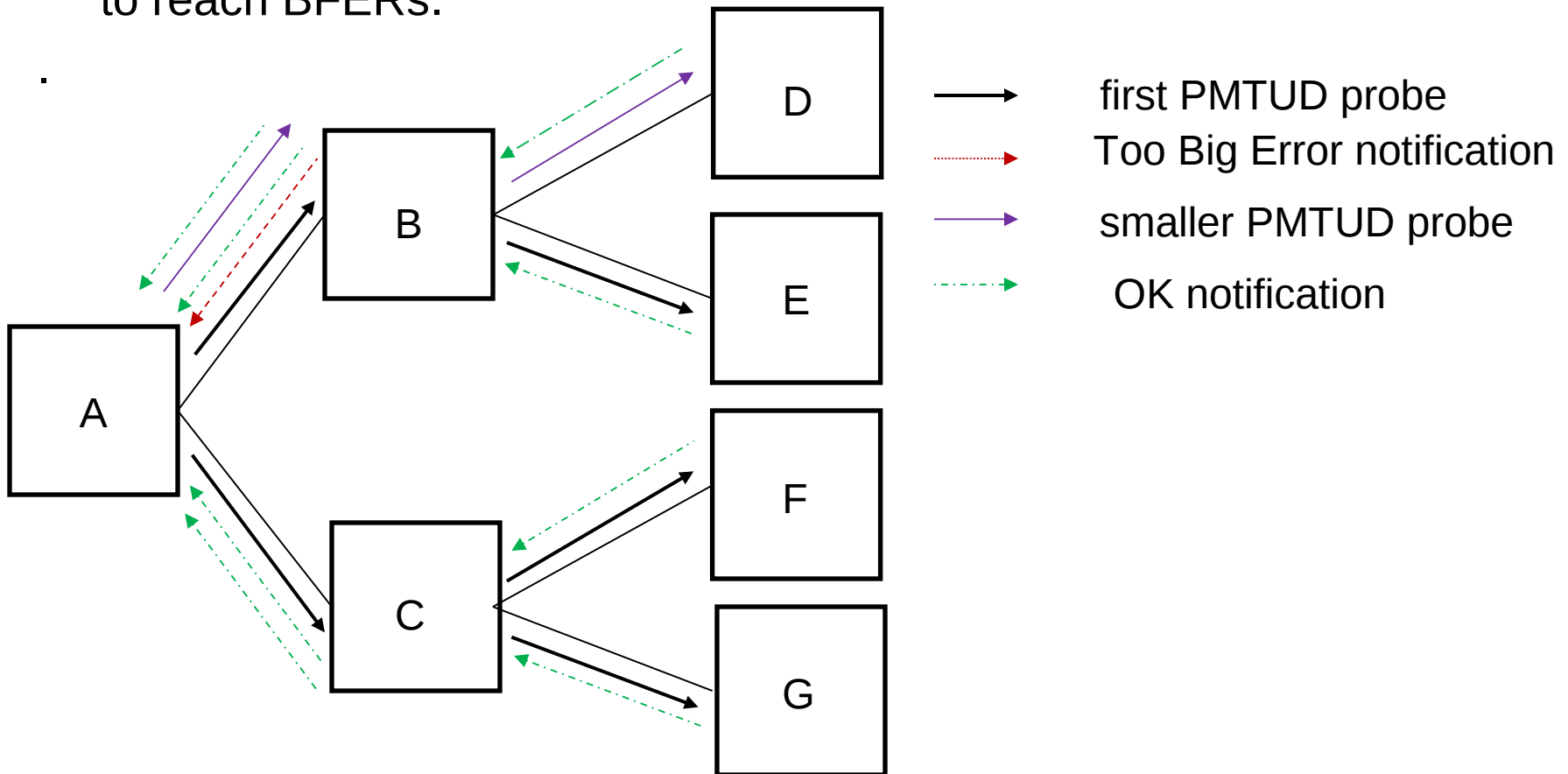
- Use BIER Ping with Data TLV as payload;
- Intermediate BFR forwards packet according to BIER-MPLS label;
- A Too Big to Forward probe MAY be processed at the appropriate network layer where it will be recognized as BIER Echo Request;
- BFR MAY send BIER Echo Reply indicating unreached BFERs and MAY propose its MTU;
- The BFIR will receive either of the two types of packets:
  - a positive Echo Reply from one of BFERs to which the probe has been sent;
  - a negative Echo Reply with bit string listing unreached BFERs and recommended MTU.
- The BFIR MUST continue sending probes using BMS until the bit string is clear or the discovery is declared unsuccessful.
- In case of convergence of the procedure, the size of the last probe indicates the MTU size that can be used for all BFERs in the initial BMS without incurring fragmentation.

# Special Case

- A non-compliant BFR will more likely drop the PMTUD probe, causing Echo Request timer to expire
- If upon expiration of the Echo Request timer BFIR didn't receive any Echo Replies, then the size of the probe SHOULD be decreased. There are scenarios when an implementation of the PMTUD would not decrease the size of the probe and the BFIR MAY continue to retransmit the probe using the initial size and MAY apply probe delay retransmission procedures.

# Conclusion

- a BFR SHOULD support PMTUD;
- a BFR MAY use defined per BIER sub-domain MTU value as initial MTU value for discovery or use it as MTU for this BIER sub-domain to reach BFRs.



# Next steps

- Welcome comments from the WG
- Asking WG to consider adoption of the draft