IETF 117 San Francisco

# Multicast On-path Telemetry using IOAM

## draft-ietf-mboned-multicast-telemetry-06

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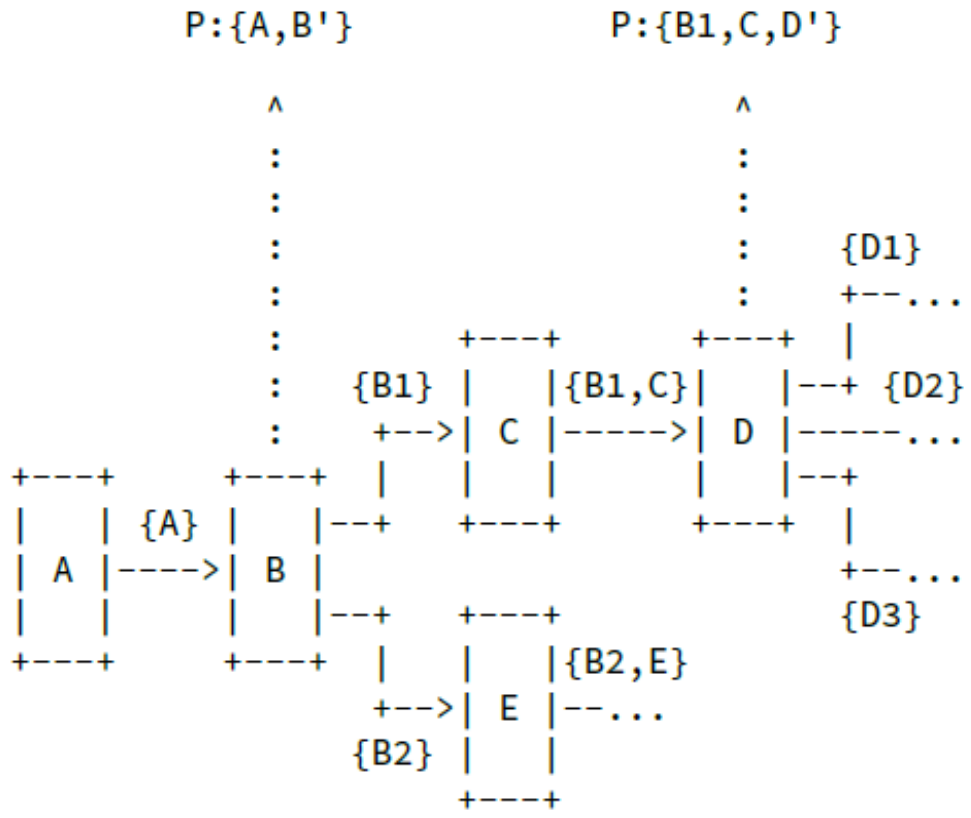
# Problem Statement and Method Recap

- On-path telemetry is useful for multicast traffic monitoring
- IOAM trace option introduces considerable data redundancy
- Two Solutions
  - Based on IOAM Trace option
  - Based on IOAM DEX

# IOAM Trace Option-based Solution (1)

- IOAM Trace: telemetry data are accumulated in user packet as a trace
- In multicast, the previous data are copied to each branch, introducing redundancy
- Solution: combine IOAM trace and the postcard-based telemetry
- Configure each branching node to export the data trace collected so far and clear the trace in user packets
- No update to RFC9197, only need control plane configuration

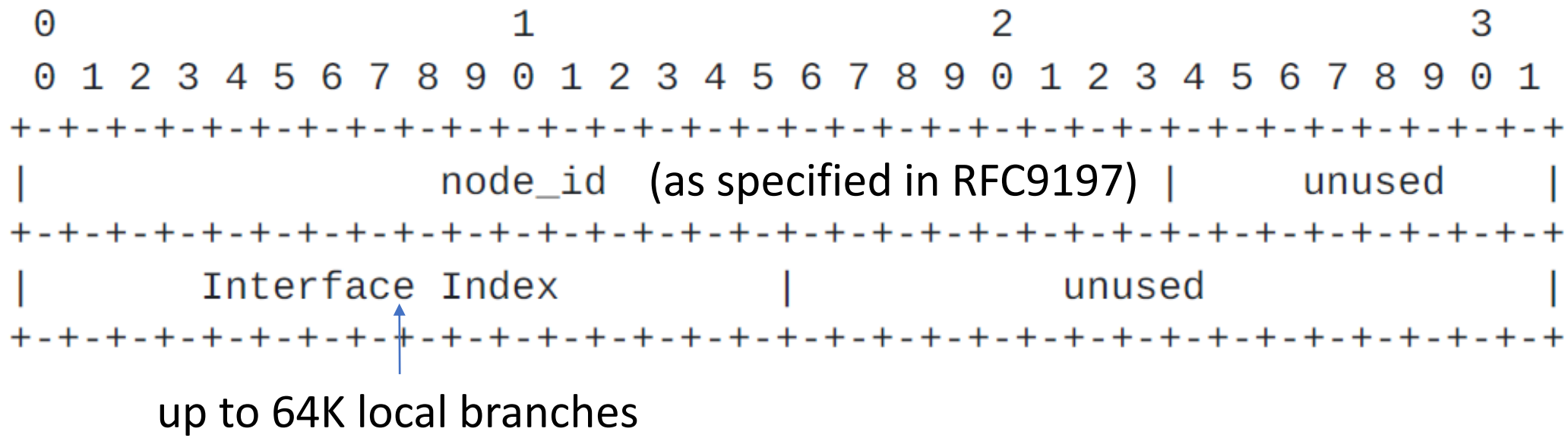
# IOAM Trace Option-based Solution (2)



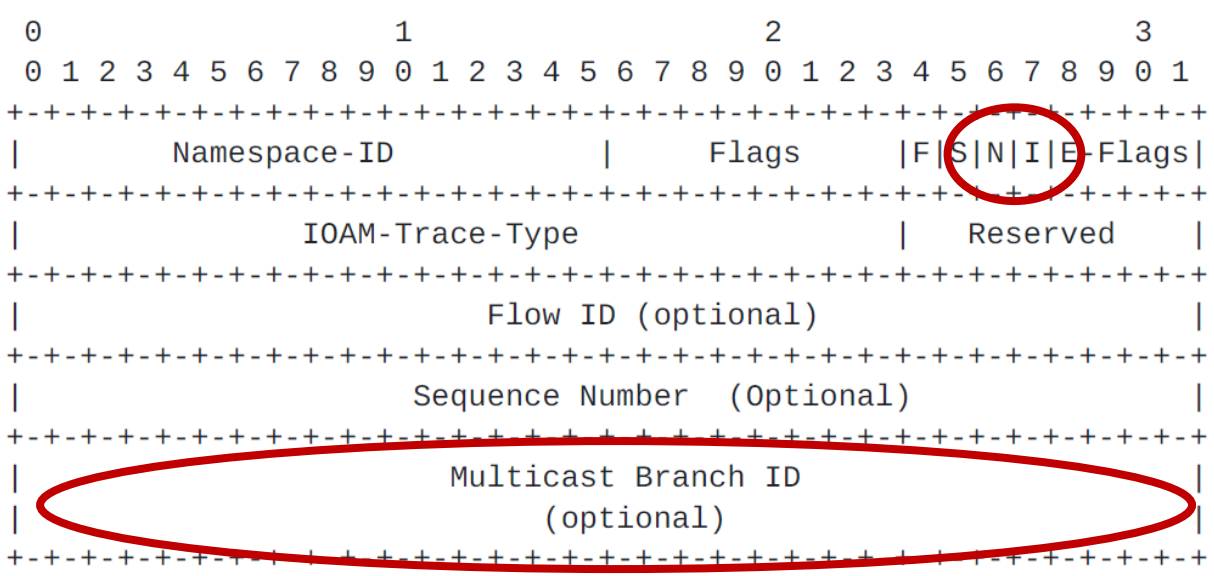

- For multicast tree reconstruction
  - Node ID data is mandatory
  - Each section’s trace needs to include the branching node

# IOAM DEX-based solution (1)

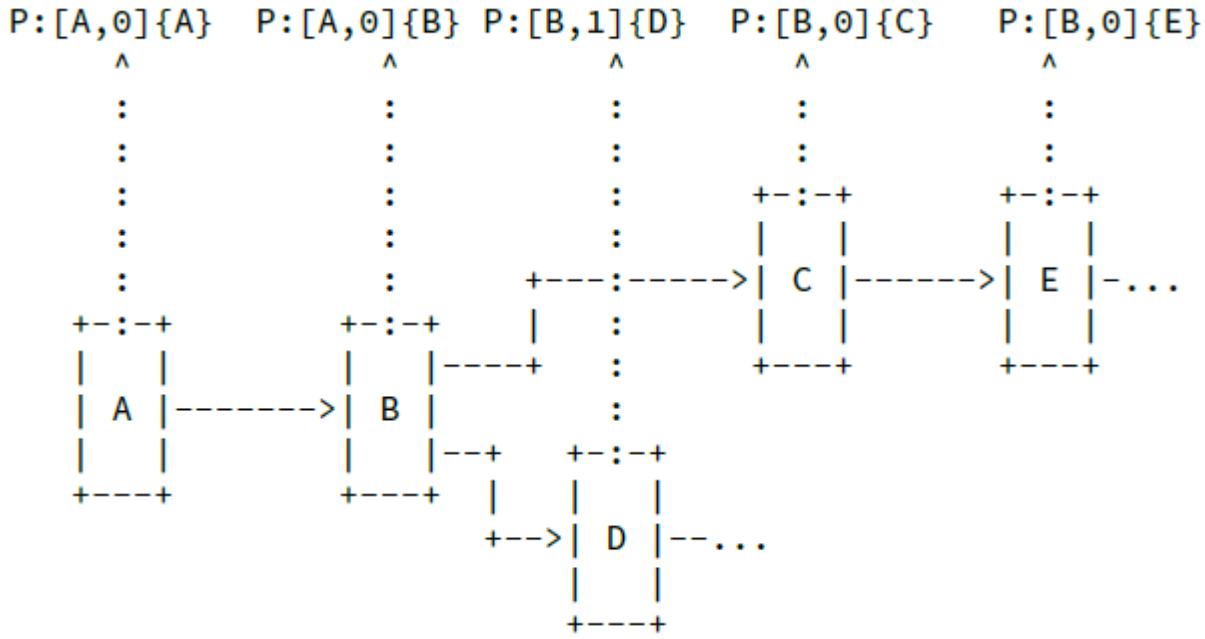
- IOAM-DEX: telemetry data sent as independent postcards based on an instruction header at each hop
- In multicast, branch identifier is needed to reconstruct the multicast tree
- Solution: instruction contains a global unique branch identifier



# IOAM DEX-based solution (2)




Update to IOAM DEX Header




Application Example

# Revisions Summary

- Reference documents updated
  - IOAM Data has been published as RFC9197
  - IOAM DEX has been published as RFC9326
- Multicast branch ID is extended to two 32-bit words for scalability
- IOAM DEX Extension Flags uses two flags (N and I) to indicate the multicast branch ID
  - According to RFC9326, each flag indicates a 32-bit option data

# Current Status and Next Steps

- WGLC issued on March 9, 2023 by MBONED chairs
  - Closed on March 31
  - Lack of responses from people other than authors

- Another round of WGLC expected