

# POST-STACK MPLS NETWORK ACTION (MNA) SOLUTION (DRAFT-JAGS-MPLS-PS-MNA-HDR-03)

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Jaganbabu Rajamanickam ([jrajaman@cisco.com](mailto:jrajaman@cisco.com))

Rakesh Gandhi ([rgandhi@cisco.com](mailto:rgandhi@cisco.com))

Royi Zigler ([royi.zigler@broadcom.com](mailto:royi.zigler@broadcom.com))

Tony Li ([tony.li@tony.li](mailto:tony.li@tony.li))

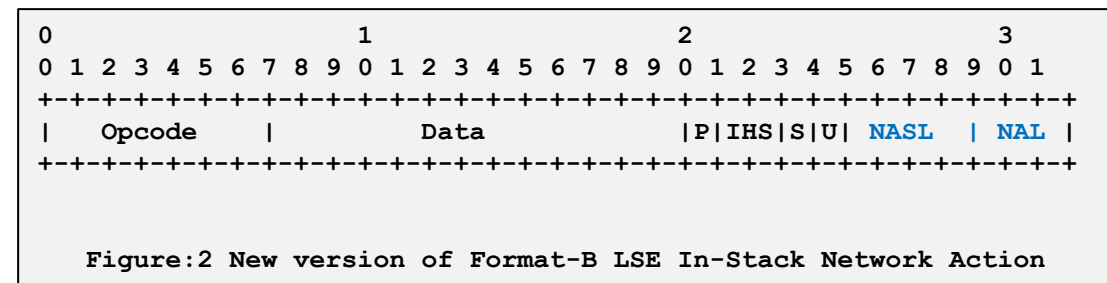
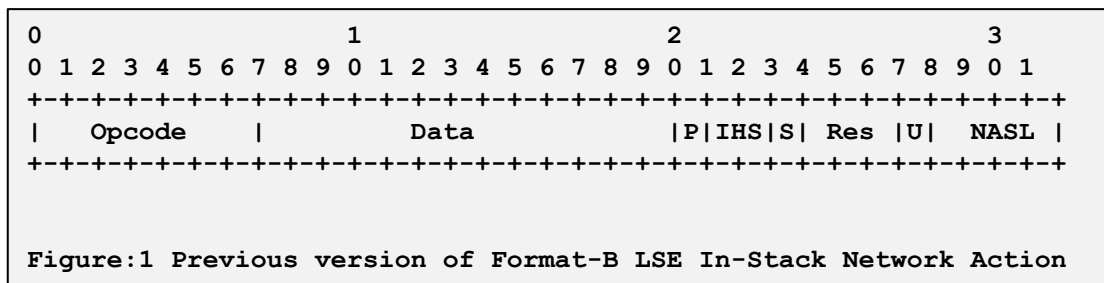
Jie Dong ([jie.dong@huawei.com](mailto:jie.dong@huawei.com))

**IETF-120, MPLSWG**

# UPDATES

1. Network Action Header Changes
2. Editorial Changes
3. Ongoing Discussions
4. Next Steps

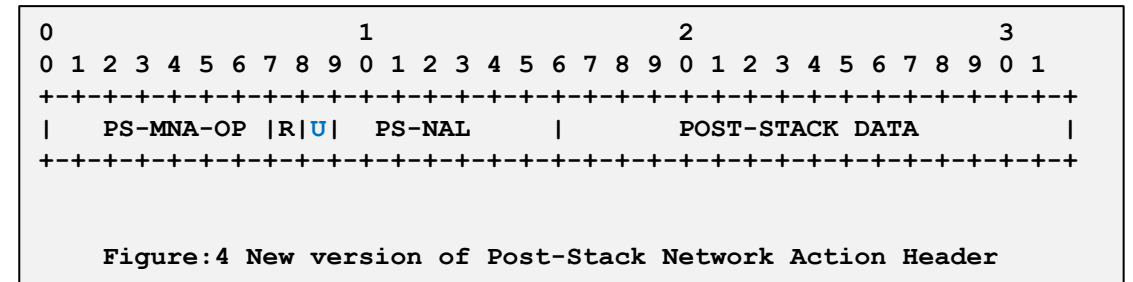
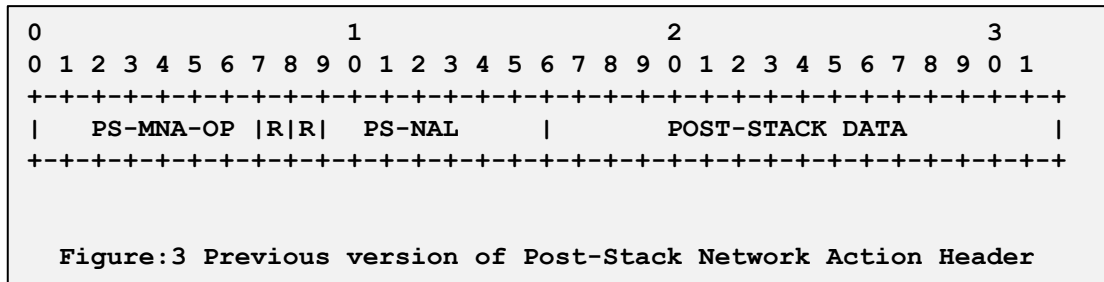
# IN-STACK NETWORK ACTION FORMAT-B LSE ALIGNED WITH DRAFT-IETF-MPLS-MNA-HDR-07



## Changes:

- Added 3-bit Network Action Length (**NAL**) field to extend Format-B LSE to carry additional data
- Adjusted the existing Network Action Sub-Stack Length (**NASL**) field to align the Format-B's NAL field with the NAL field of the Format-C LSE

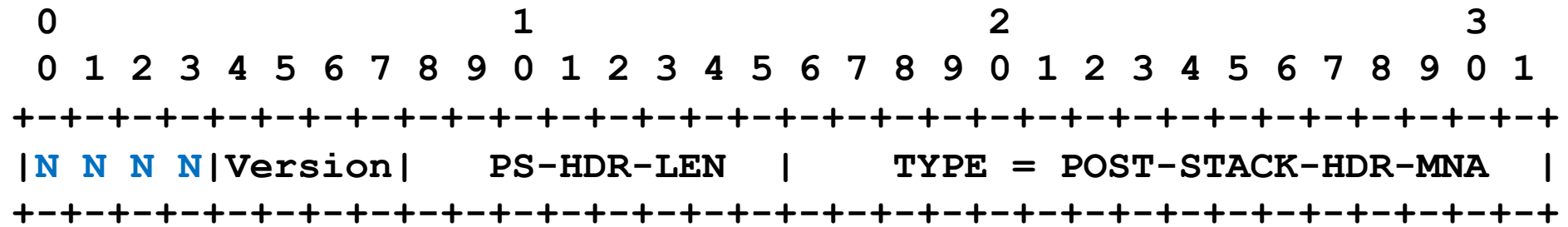
# UPDATED POST-STACK NETWORK ACTION HEADER



## Changes:

- Allocated one of the reserved R bit to U bit (Unknown Post-Stack Network Action handling)

# POST-STACK HEADER



## First Nibble **NNNN**

- Use 0000b (CW) or define a new First Nibble

# P FLAG IN IN-STACK NETWORK ACTION SUB-STACK

## **Post-Stack Network Action Presence P Flag in In-Stack Network Action Sub-Stack**

- Optimization to indicate the Post-Stack Network Action presence
- Can use Opcode instead?

# IN-STACK NETWORK ACTION OPCODE FOR POST-STACK NETWORK ACTION OFFSET AND RLD

## **IN-STACK NETWORK ACTION OPCODE - POST-STACK NETWORK ACTION OFFSET**

- Can be used to handle the Post-Stack network action not supported based on U Flag
- Can be used for handling RLD limitation

## **Discussion on Readable Label Depth (RLD) for Post-Stack Network Actions**

- RLD includes both In-Stack and Post-Stack Network Actions

# POST-STACK NETWORK ACTION USE-CASES

- The MNA use-case draft lists In Situ OAM (IOAM) use-cases, including **pre-allocated trace option use-case, for example, record timestamp and interface IDs along the packet path**
  - <https://www.ietf.org/archive/id/draft-ietf-mpls-mna-usecases-10.html#name-in-situ-oam>
- The following MNA draft defines a Post-Stack Network Action solution for IOAM and IOAM-DEX use-cases.
  - <https://datatracker.ietf.org/doc/html/draft-gandhi-mpls-mna-ioam-dex-01>



## NEXT STEPS

- Post-Stack Data already covered in [draft-ietf-mpls-mna-requirements]
- Use-cases defined in [draft-ietf-mpls-mna-usecases] that can benefit from Post-Stack MNA Solution
- Welcome WG review comments and suggestions
- Requesting WG Adoption
- Discuss issues and revise as WG document

**THANK YOU!**

# ABBREVIATIONS

<b>Abbreviations</b>	<b>Meaning</b>
AD	Ancillary Data
BOS	Bottom of Stack
bSPL	Base Special Purpose Label
DEX	Direct Export
E2E	Edge-To-Edge
HBH	Hop By Hop
I2E	Ingress-To-Egress
IHS	Ingress-To-Egress, Hop-By-Hop or Select Processing Scope
IOAM	In Situ OAM
ISD	In-Stack Data
MNA	MPLS Network Action
MSD	Maximum Stack Depth
NAI	Network Action Indicator
NAI-OP	Network Action Indicator Opcode
NAS	Network Action Sub-Stack
POT	Proof of Transit
PSD	Post-Stack Data
PSNA	Post-Stack Network Action
RLD	Readable Label Depth