

# BIER Extension Headers

draft-zzhang-bier-extension-headers

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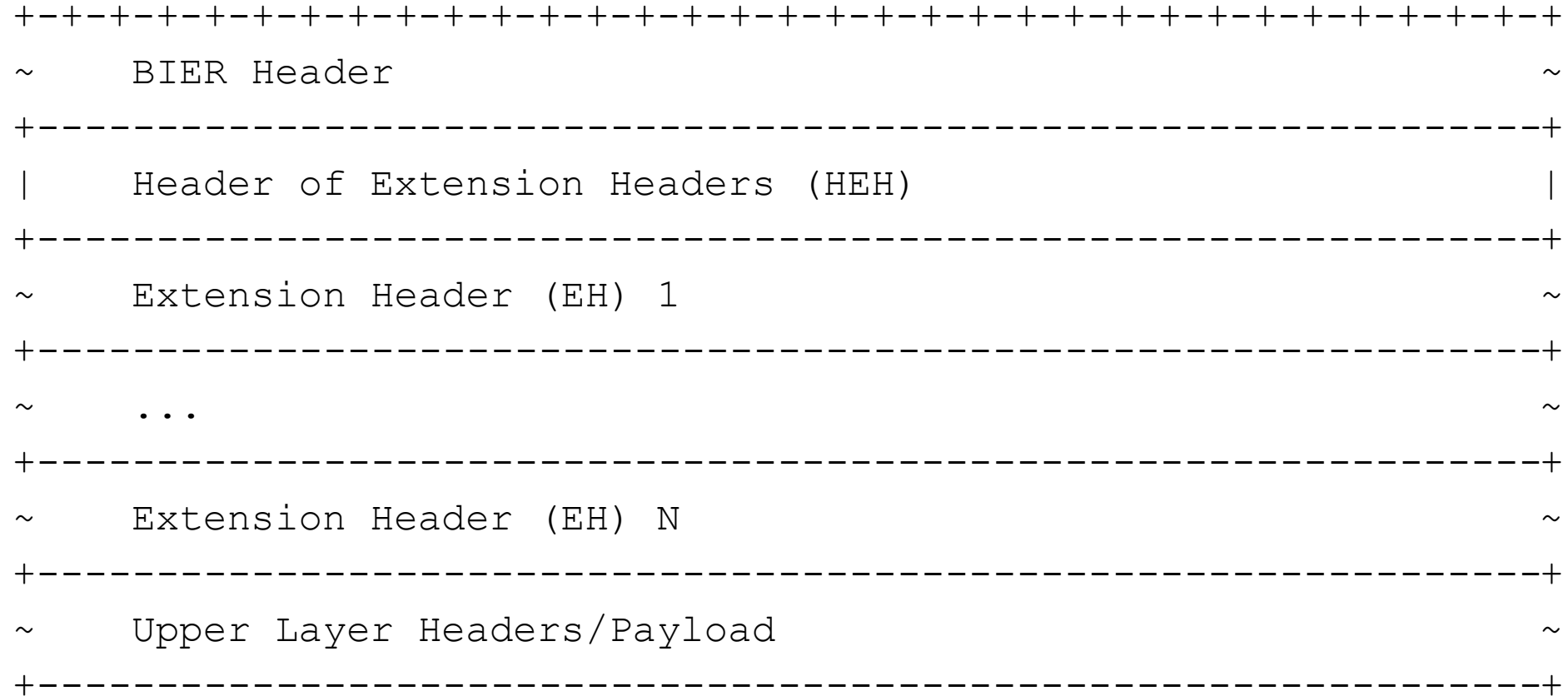
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IETF 114

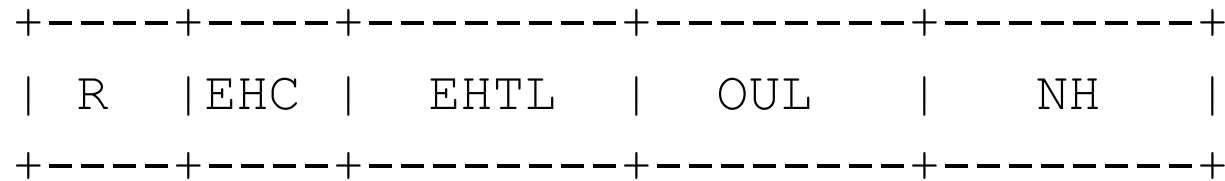
# Summary

- A follow-up of:
  - draft-zzhang-intarea-generic-delivery-functions
  - draft-xzlnp-bier-ioam
  - A presentation in IETF113
- Based on draft-song-mpls-extension-header
- Strive for:
  - Generic header extension mechanism aligned with MPLS/IPv6
  - Support for Generic Delivery Functions with same extension headers for MPLS/BIER/IPv6
  - Multi-vendor support of the proposal

# Header Definition



# Header of Extension Headers (HEH)



EHC: 4-bit; Number of EHs

EHTL: 8-bit; Extension Header Total Length in 4-octet units.

OUL: 8-bit; Original upper layer protocol type. Can be "UNKNOWN".

NH: 8-bit; Type of Next Header immediately following the HEH.  
Value is from the Internet Protocol Numbers registry,  
so that IPv6 extension headers for GDFs can be used as  
BIER extension headers as is.

# Why HEH?

- BIER header's "proto" field is 6-bit with its own space
- Having an 8-bit NH field in HEH from the Internet Protocol Numbers registry allows applicable IPv6 extension headers to be used as is
  - Only one codepoint from the registry is needed for all non-IP extensions (e.g. for all BIER/MPLS/whatever-specific extensions – see next slide)
- EHC/EHTL/OUL help locate upper layer payload directly w/o having to follow EHs one by one

# Extension Header: just like IPv6

```
+-----+-----+-----+-----+
|  NH    |  HLEN  |EXT    |resved |
+-----+-----+-----+-----+
~          Header Specific Data          ~
+-----+-----+-----+-----+
```

NH: 8-bit Type of the EH immediately following this EH.  
from the Internet Protocol Numbers registry.

EXT: 8-bit extension sub-type for an MPLS/BIER-specific extension header,  
from a registry specifically for BIER or MPLS. It is expected to have  
different EXT values for different BIER specific extension headers for  
different functions, and one EXT value for one extension header that  
encodes different TLVs for different functions in a single EH.

# Next Steps

- Seeking comments and suggestions