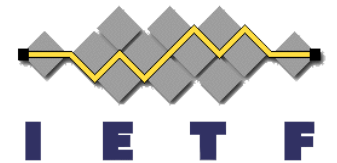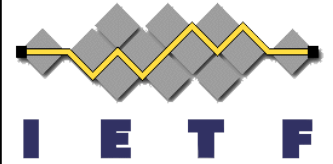# IPv6 Hop-by-Hop Header Handling

draft-ietf-6man-hbh-header-handling
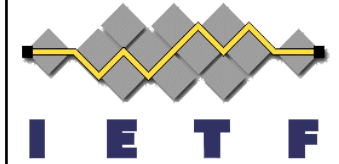
-00

Updates since IETF 93

- Responding to reviewer comments
- Section 2:
  - If HBH is not first extension header, packet MUST be dropped
  - Of course, this only applies to hosts. Routers don't look beyond the HBH header, RFC 2460 4.1.
- Section 2.1: detail a number of other options
- Section 3: minor additional text on interoperation with older equipment

Status

- Now a working group document (as of Sunday)
- The discussion on the list resulted in some updates, but not major ones.
- I have not had comments on section 2.2 or 2.3 until yesterday
  - Jinmei describes his comments as "minor"
  - But one could be a serious issue, requiring working group consensus one way or the other

Section 2.2: changing options in transit
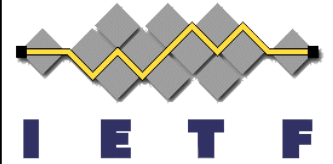
- Change-in-place supported by RFC 2460
- This allows us to capture OAM information in transit *IF* the host included the relevant header and option

- But – what if the originating host was unaware that the network wanted to perform an OAM measurement?
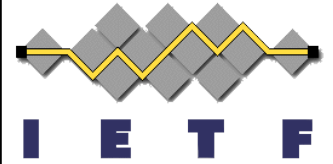
Section 2.3: Adding headers or options in transit
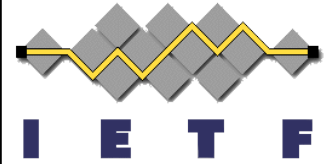
- To perform an OAM measurement, we would like to be able to add a HBH option, and if necessary a HBH header, to a datagram being forwarded

- In some use cases, it may be appropriate or necessary to remove the header and/or option in the last router prior to delivery

Section 2.4: Security Extension Header

- There are some interactions with AH when playing with such options:
  - "Assumed to be immutable in transit"
  - The integrity check may fail, especially if a header was added or its length is changed.
  - To avoid this, IPv6 header must be restored to original condition before final delivery
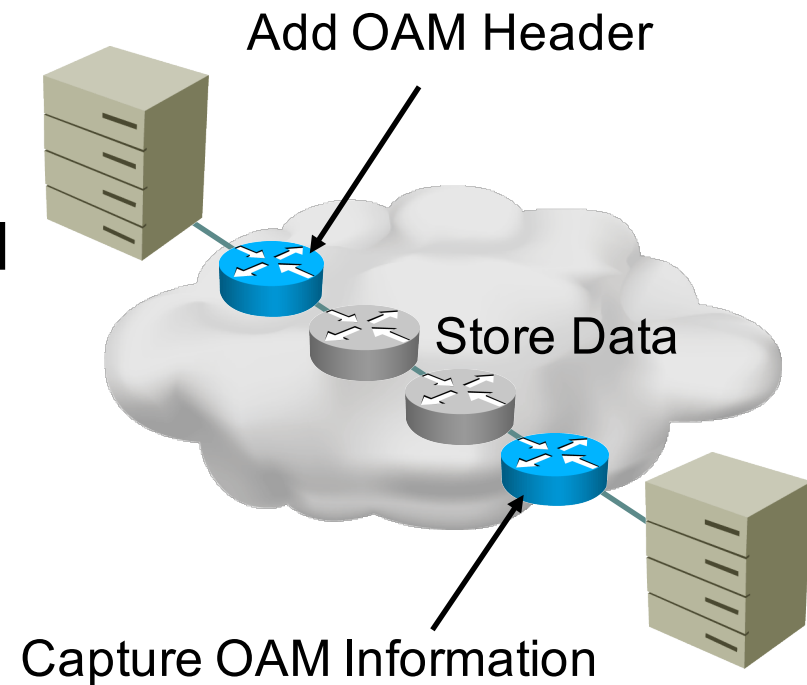- ESP doesn't include the extension headers, and so should evade this.

Jinmei's comment 2015-11-03

- - Section 2.3
  - *Use cases under current consideration take this a step further: a router or middleware process MAY add an extension header, [...]*

- "I suspect this violates the latest clarification in rfc2460bis:"
  - *Extension headers must never be inserted by any node other than the source of the packet.*
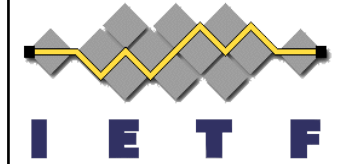
Imagine this design

- Something we're thinking about but not married to
- Process:
  - IPv6 packet sent by host
  - First hop router adds OAM header
  - Subsequent routers store OAM information
  - Last router captures OAM information
  - IPv6 packet, potentially without OAM information, delivered

Add OAM Header

Store Data

Capture OAM Information

What is the working group preference?
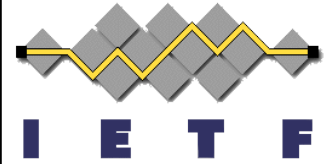
- - Section 2.3
  - *Use cases under current consideration take this a step further: a router or middleware process MAY add an extension header, [...]*
- "I suspect this violates the latest clarification in rfc2460bis:"
  - *Extension headers must never be inserted by any node other than the source of the packet.*
  - How about options within extension headers?

Questions?