



Lower Layer Guidelines for Robust Header Compression

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Background

- All header compression schemes (RFC1144, RFC2507, RFC2508) rely on some functionality from underlying lower layer. For example:
 - Low residual bit error rate
 - Inferred length fields
 - Packet type indication
- Important to be aware of required functionality from lower layers ...
 - ... to be able to prepare for incorporation of header compression into a system without knowing the exact details of the final scheme. For example in systems like 3GPP, 3GPP2, ETSI, etc.
 - ... to be able to correctly incorporate header compression into a system
- Draft corresponds to *Layer-2 design guidelines* planned in the charter.

Guidelines for robust RTP/UDP/IP compression 1(3)

● Error detection

- Lower layer **MUST** provide error detection for compressed headers to the decompressor if the compressed header doesn't have an internal checksum for that purpose
- The residual bit error rate in headers passed up to the decompressor should be very close to zero. Value to be defined.

● Indication of erroneous headers

- It is **RECOMMENDED** that erroneous headers are passed up to the decompressor.
- If so, an indication of that the header is erroneous **MUST** be included to the decompressor.

Guidelines for robust RTP/UDP/IP compression 2(3)

- **Inferred header field information**

- The decompressor **MUST** be notified about the length of the received packet including the (compressed) header to make it possible to determine length fields: Packet length (IPv4), Payload length (IPv6) and Length (UDP)

- **Handling of header size variation**

- The link layer **MUST** be able to handle header size variations from 40 or 60 octets down to 1 octet

- **Negotiation of parameters**

- Lower layer **MUST** be able to negotiate header compression parameters in a initial setup phase
- Support for re-negotiations is **RECOMMENDED**

Guidelines for robust RTP/UDP/IP compression 3(3)

● Demultiplexing of flows

- It is RECOMMENDED that flows may be demultiplexed onto logically separated channels if possible
 - ◆ This reduces the need for context identification at header compression level

● Packet type identification

- Identification of packets is not needed since it is incorporated in the header compression scheme

● Handover procedures (cellular system specific)

- Handover SHOULD NOT cause significant long loss
- System MAY have internal mechanism for transferring context at handover
- If context is re-initialized by sending “full headers”, the lower layer must indicate handover to the header compression scheme



Guidelines for robust TCP/IP compression

To Be Written

Summary

- **Lower layer guidelines for robust header compression**
 - To enable incorporation of ROHC schemes into systems
 - First set of guidelines for RTP/UDP/IP compression
 - Nothing on TCP/IP compression yet
- **From the charter:**
 - Sep 00 Layer-2 design guidelines submitted to IESG for publication as Informational*
- **What's next...**
 - Make an *draft-ietf-rohc-lower-layer-guidelines-00* submission
 - Continue work on existing guidelines for RTP/UDP/IP compression
 - Need input on TCP/IP compression