

# Transmission of SCHC-compressed packets over IEEE 802.15.4 networks

`draft-ietf-6lo-schc-15dot4-07`

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# Main goal

```
+-----+
| CoAP, other |
+-----+
| UDP, other  |
+-----+
|   IPv6     |
+-----+
| 6LoWPAN HC |
+-----+
|6LoWPAN Frag|
+-----+
|  802.15.4  |
+-----+
```

Traditional

```
+-----+
| CoAP, other |
+-----+
| UDP, other  |
+-----+
|   IPv6     |
+-----+
|  SCHC HC   |
+-----+
|6LoWPAN Frag|
+-----+
|  802.15.4  |
+-----+
```

<-- NEW

SCHC-based

SCHC (RFC 8724) exploits a priori knowledge of header field values

# Status

- **WG adoption**
  - draft-ietf-6lo-schc-15dot4-00
  - In January 2023
  
- **Version -07**
  - Waiting for updated draft-ietf-schc-architecture
  - Miscellaneous minor updates throughout the document

# Table of Contents

Table of Contents	
1. Introduction . . . . .	3
2. Terminology . . . . .	4
2.1. Requirements language . . . . .	4
2.2. Background on previous specifications . . . . .	4
3. Architecture . . . . .	5
3.1. Protocol stacks . . . . .	5
3.1.1. Main protocol stack . . . . .	5
3.1.2. Transition protocol stacks . . . . .	6
3.2. SCHC architecture concepts . . . . .	8
3.2.1. SCHC Stratum and Discriminator . . . . .	8
3.2.2. Single-instance networks . . . . .	8
3.2.3. Multiple-instance networks . . . . .	9
3.3. Network topologies . . . . .	9
3.4. Single-hop communication . . . . .	9

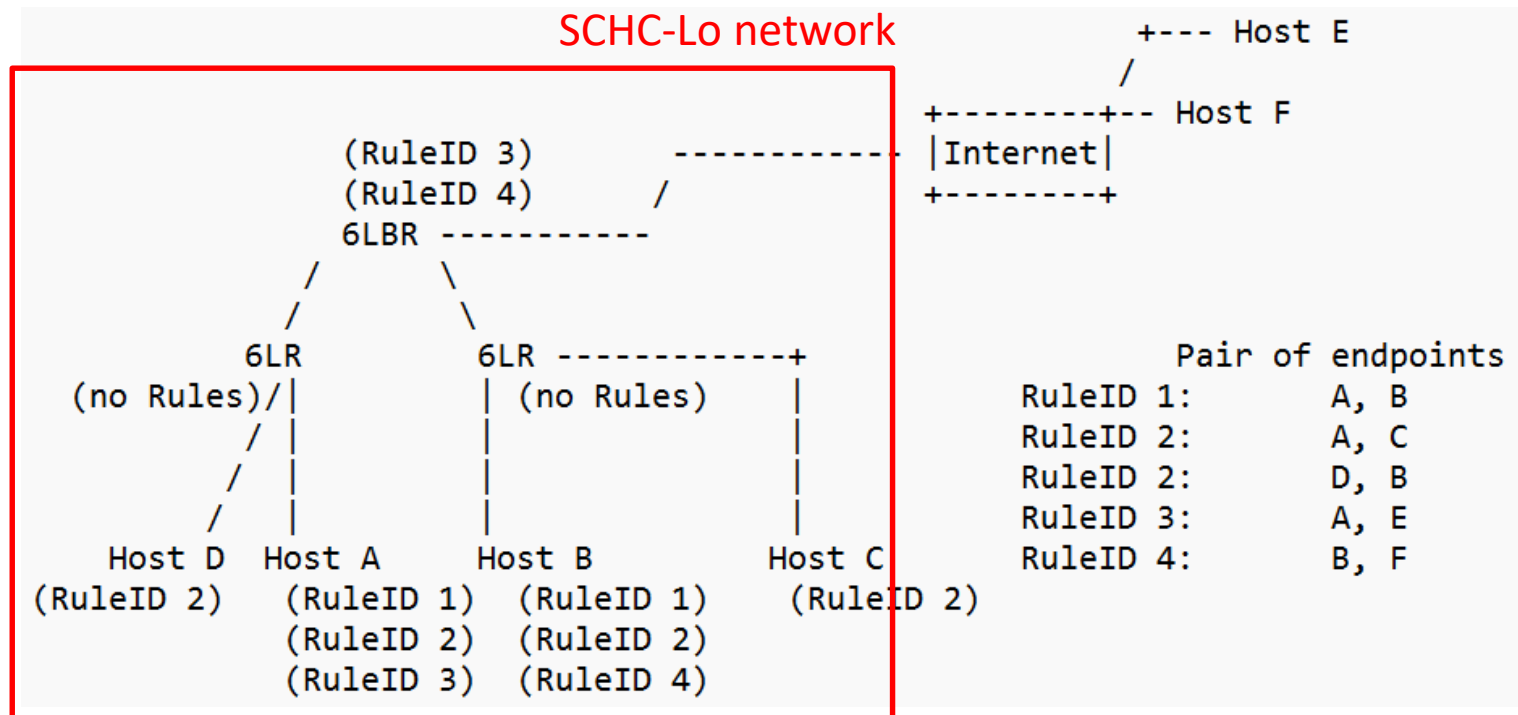
Table of Contents	
1. Introduction . . . . .	3
2. Terminology . . . . .	4
2.1. Requirements language . . . . .	4
2.2. Background on previous specifications . . . . .	5
2.3. New term . . . . .	5
3. Architecture . . . . .	5
3.1. Protocol stacks . . . . .	5
3.1.1. Main protocol stack . . . . .	5
3.1.2. Transition protocol stacks . . . . .	6
3.2. SCHC architecture concepts . . . . .	8
3.2.1. SCHC Stratum and Discriminator . . . . .	8
3.2.2. Single-instance networks . . . . .	8
3.2.3. Multiple-instance networks . . . . .	9
3.3. Network topologies . . . . .	9
3.4. Single-hop communication . . . . .	9

Appendix A. Header compression examples . . . . .	35
A.1. Single-hop or SRO frame format . . . . .	36
A.2. TRO frame format . . . . .	36
A.3. PRO frame format . . . . .	36
A.4. Mesh-Under frame format . . . . .	37
A.5. Enabling the transition protocol stack . . . . .	37
Appendix B. Analysis of route-over multihop approaches . . . . .	39
B.1. SRO . . . . .	39
B.2. TRO . . . . .	40
B.3. PRO . . . . .	40
B.4. Summary . . . . .	41
Authors' Addresses . . . . .	41

Appendix A. Header compression examples . . . . .	36
A.1. Single-hop or SRO frame format . . . . .	37
A.2. TRO frame format . . . . .	37
A.3. PRO frame format . . . . .	37
A.4. Mesh-Under frame format . . . . .	37
A.5. Enabling the transition protocol stack . . . . .	37
Appendix B. Analysis of route-over multihop approaches . . . . .	39
B.1. SRO . . . . .	39
B.2. TRO . . . . .	40
B.3. PRO . . . . .	41
B.4. Summary . . . . .	41
Appendix C. Relationship with RFC 7973 . . . . .	42
Authors' Addresses . . . . .	42

## 2.3. New term

- SCHC-Lo network:
  - A 6LoWPAN network where SCHC (RFC 8724) is used for header compression/decompression
- Example:

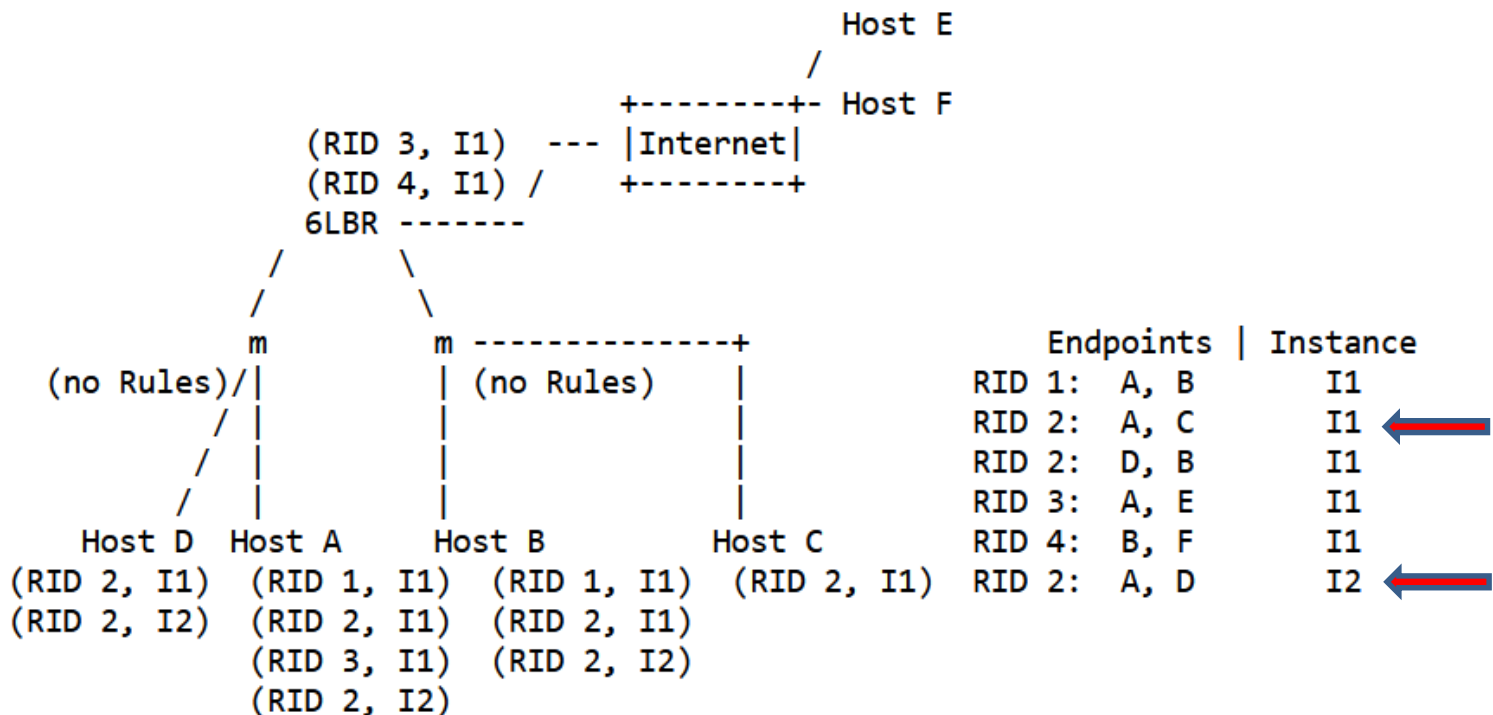


# Miscellaneous updates (I/II)

- 3.2.3. Multiple-instance networks
  - OLD:
    - In Multiple-instance networks, the SCHC Header cannot be fully compressed
  - NEW:
    - In Multiple-instance networks, the SCHC Header cannot **generally** be fully compressed
      - » Reminder on the next slide

# Reminder: 3.5. Multihop communication

- Mesh-Under:
  - Multiple-instance networks:
    - A fully compressed SCHC Header MAY be used
      - » Only if it is possible to determine the SCHC Packet Instance needed to decompress a SCHC-compressed packet based on the packet source identifier (Mesh-Under header [RFC 4944])



# Miscellaneous updates (II/II)

- 10. Security considerations
  - Comment by Peter Yee
    - Text improvement
  - OLD:
    - A malicious node might be able to modify the related fields (i.e., Bit Pointer or Address Length) to avoid a router to correctly reconstruct the IPv6 destination field of a SCHC-compressed IPv6 packet, thus avoiding delivery of the packet to its intended destination
  - NEW:
    - A malicious node might be able to modify the related fields (i.e., Bit Pointer or Address Length) to **prevent** a router **from** correctly **reconstructing** the IPv6 destination field of a SCHC-compressed IPv6 packet, thus **preventing** delivery of the packet to its intended destination



# Appendix C. Relationship with RFC 7973

- RFC 7973:
  - Report that IEEE assigned an Ethertype for "IPv6 datagrams using LoWPAN encapsulation"
  - Any IPv6 datagram using the Dispatch octet (as defined in Section 5.1 of RFC 4944, subsequently updated by RFC 6282) is regarded as using LoWPAN encapsulation
- This draft:
  - Also uses LoWPAN encapsulation, as it uses the Dispatch octet as described in RFC 7973
  - Can also benefit from the mentioned Ethertype

# Next steps

- Continue monitoring and aligning with draft-ietf-schc-architecture
- Elaborate on the “transition” protocol stack
  - E.g., defining the SCHC Header format for it

# Comments/Questions?

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