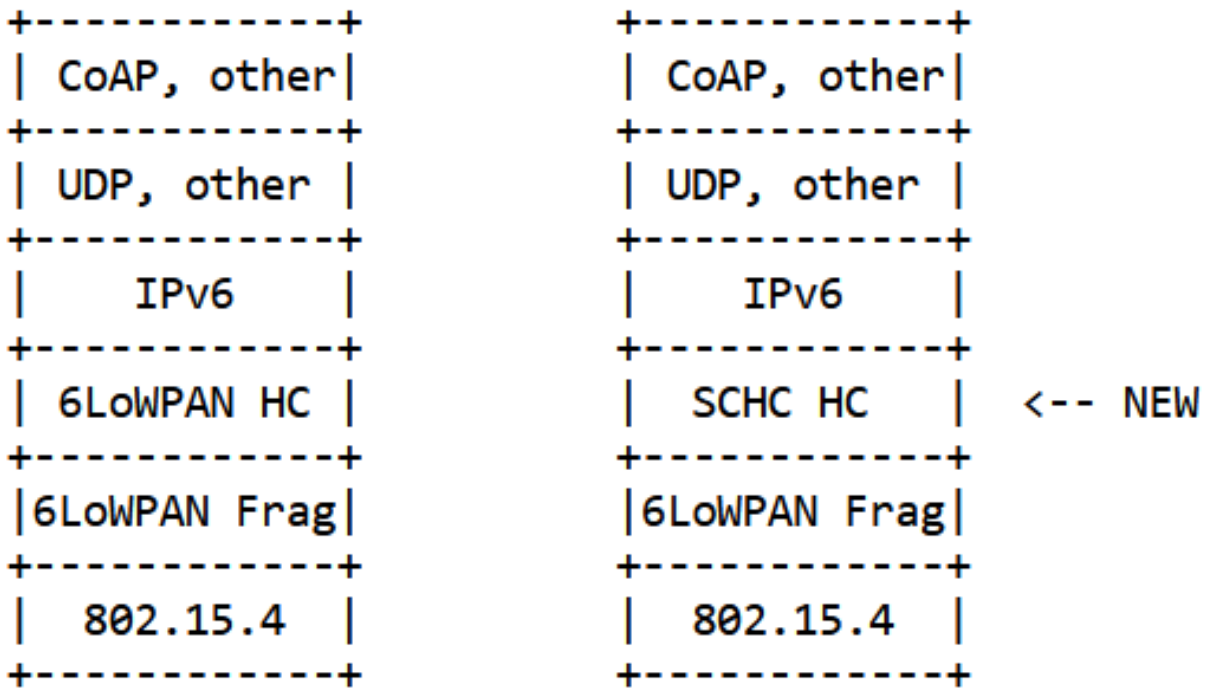
Transmission of SCHC-compressed packets over IEEE 802.15.4 networks

draft-ietf-6lo-schc-15dot4-09

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Main goal



Traditional 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

- Versions -08 and -09
  - Alignment with draft-ietf-schc-architecture
    - Updated twice since the last IETF (-03 and -04)
    - Terminology
  - SCHC Stratum Header format

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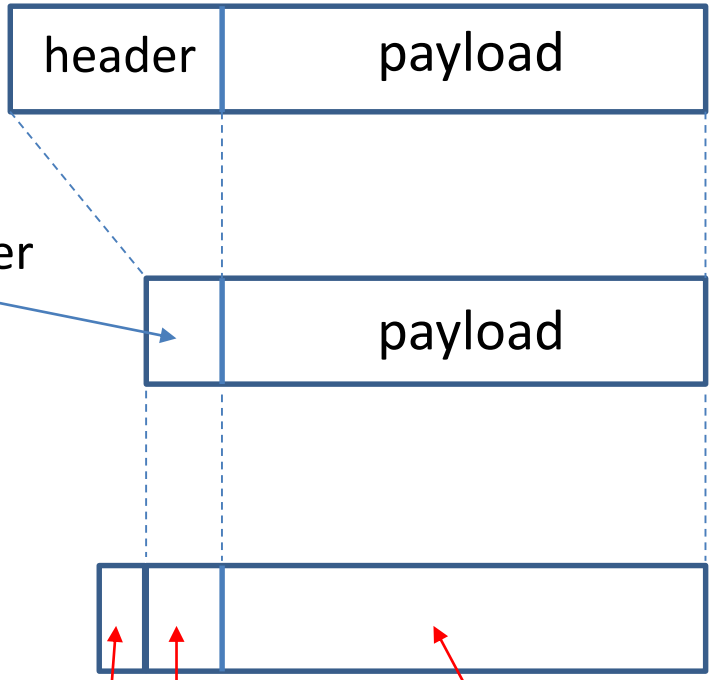
- Stable structure
  - Terminology updates

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Updated terms: background

RFC 8724:



draft-ietf-schc-architecture-04:

SCHC Stratum Header

SCHC Payload

user payload

Updated terms (I)

- In draft-ietf-schc-architecture, updated accordingly in draft-ietf-6lo-schc-15dot4-09:

OLD		NEW
SCHC Header	→	SCHC Stratum Header
Compressed header	→	SCHC Payload
Instance	→	end point
endpoint	→	node

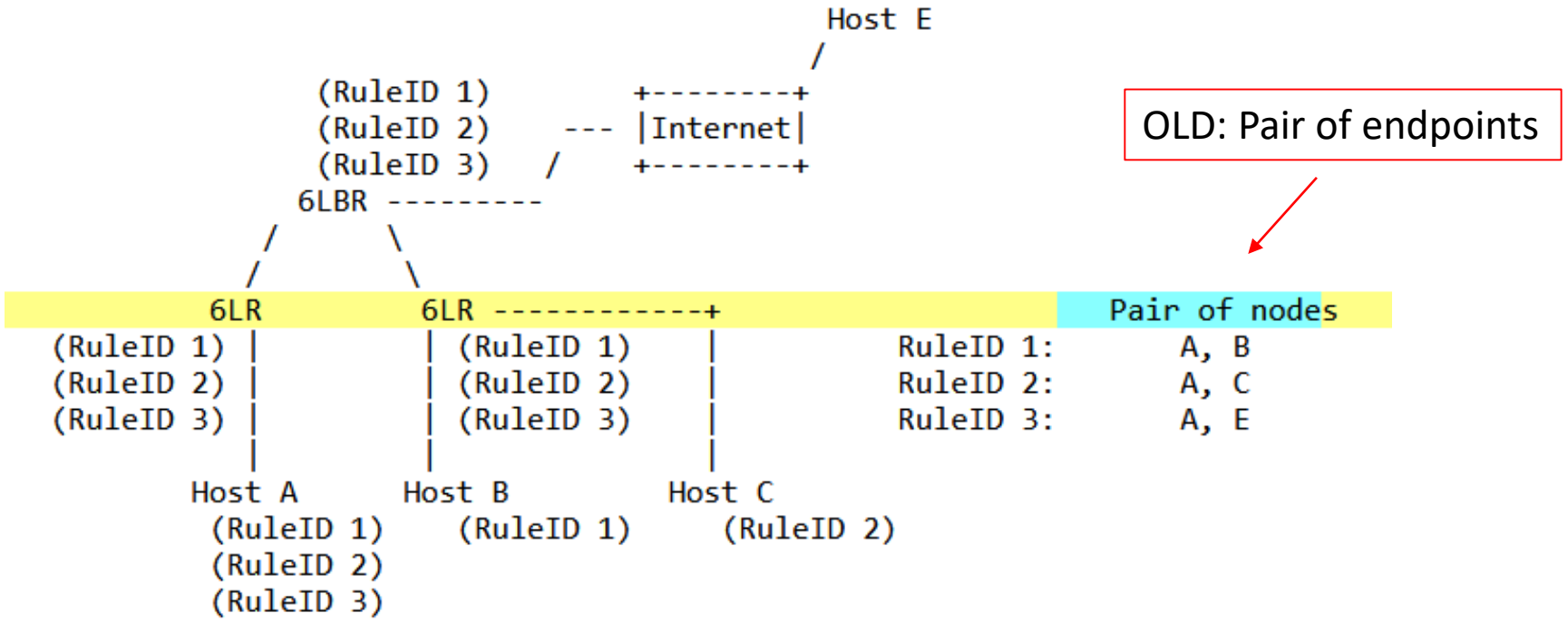
NOTE: SCHC Instance now defined as the session between SCHC end points using same SoR and SoV

- Own terms in draft-ietf-6lo-schc-15dot4-09:

OLD		NEW
Single-instance networks	→	Single-end point networks
Multiple-instance networks	→	Multiple-end point networks

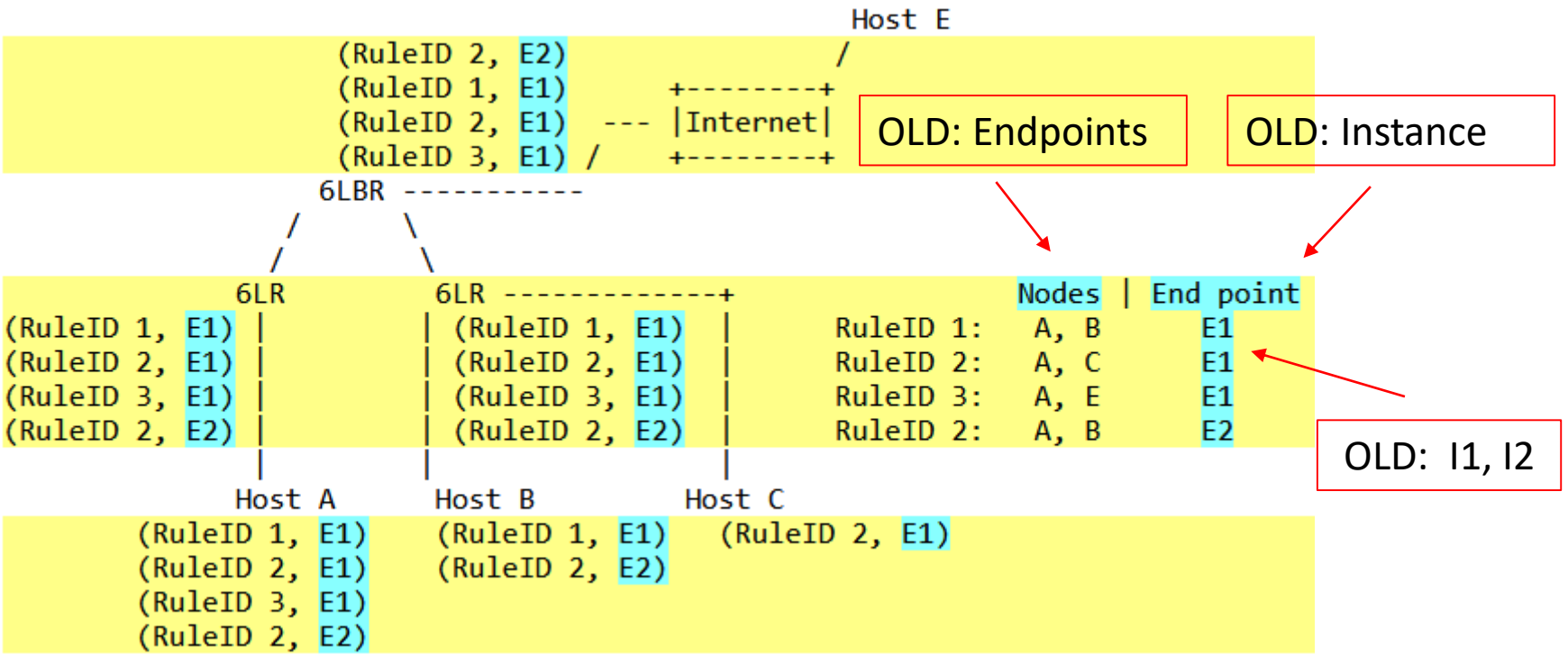
Updated terms (II)

- All example figures have been updated accordingly
  - Example: SRO, single-end point networks



Updated terms (III)

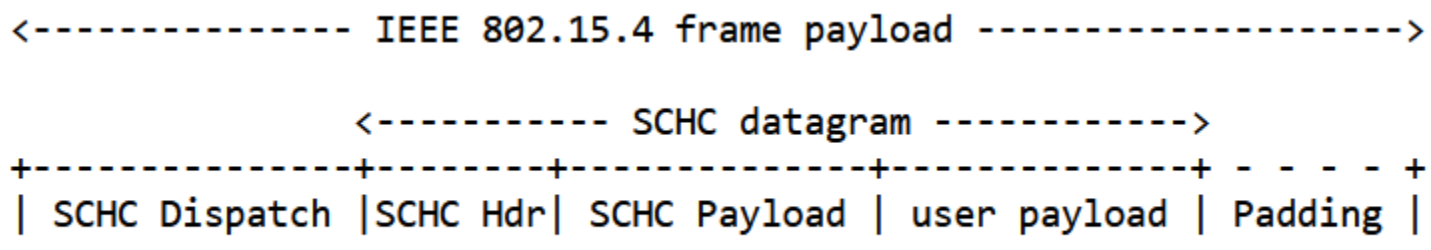
- All example figures have been updated accordingly
  - Example: SRO, multiple-end point networks



4.1. Single-hop or SRO frame format

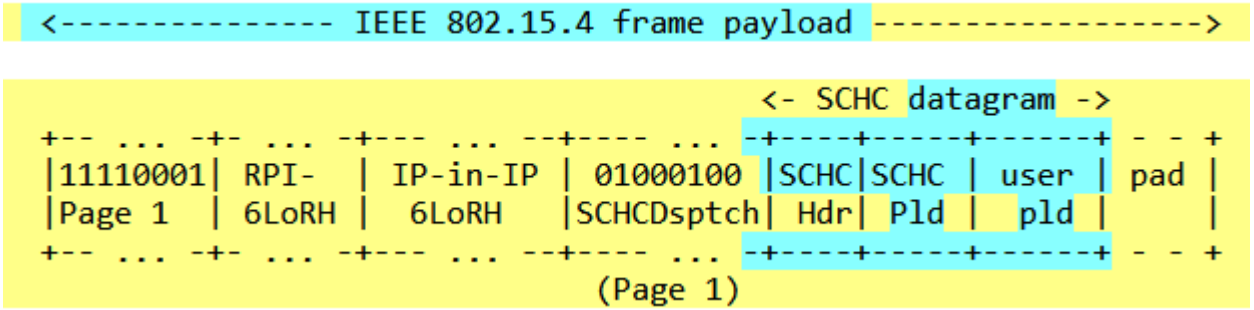
- New terms and description
  - SCHC datagram
  - SCHC Payload
    - SCHC-compressed header of the packet being carried over IEEE 802.15.4
  - user payload
    - The payload of the packet being carried over IEEE 802.15.4

- Format:

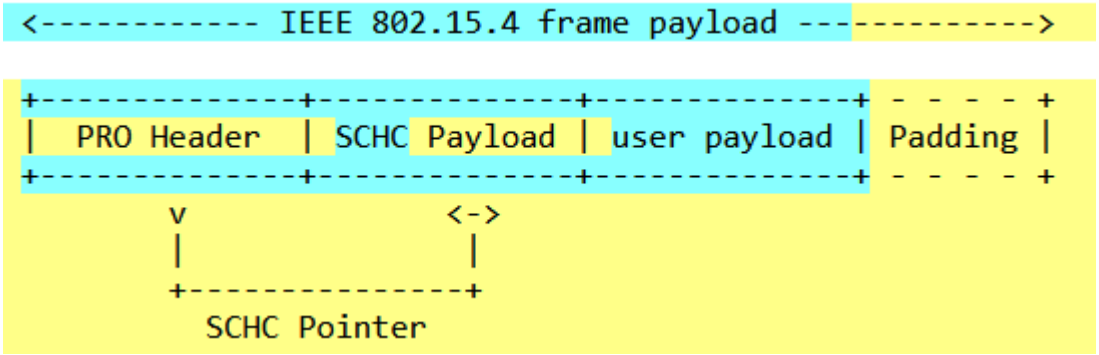


4.2-4.4. Updated remaining formats

- Examples
  - TRO upward frame format



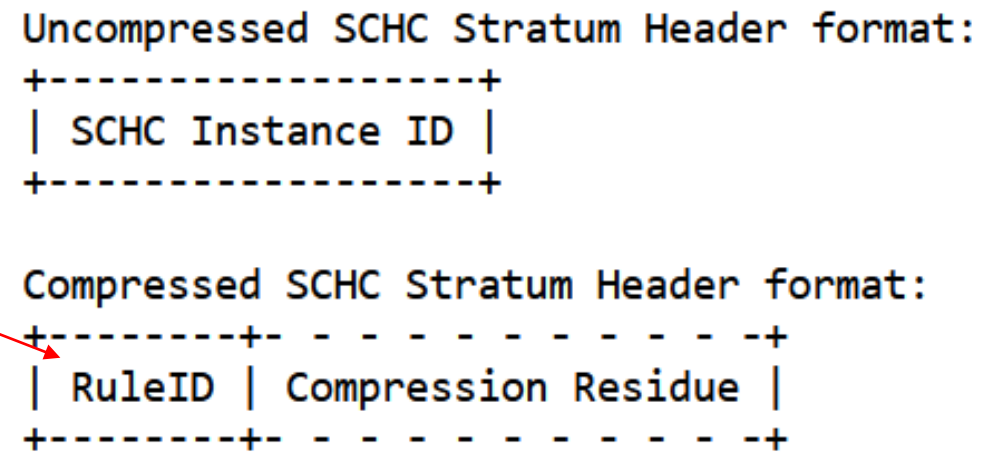
  - PRO frame format



4.1.2. SCHC Stratum Header format (I)

- SCHC Instance ID
  - Unsigned integer that identifies the session between SCHC end points in two or more peer nodes using a common SoR
  - RECOMMENDED size between 1 and 8 bits
- Formats:

RECOMMENDED
between 0 and 8 bits



4.1.2. SCHC Stratum Header format (II)

- Example C/D Rules:

RuleID 1

FID	FL	POS	DI	TV	MO	CDA
SCHC.instid	8	1	Bi	value	equal	not-sent



Best match leads to compression residue of 0 bits

RuleID 2

FID	FL	POS	DI	TV	MO	CDA
SCHC.instid	8	1	Bi	0x00	MSB(7)	LSB



Best match leads to compression residue of 1 bit

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
- Complete the examples in Appendix A
- Complete Appendix B
  - Perhaps reassess the current consensus on 3 modes for route-over multihop

Comments/Questions?

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