

Path Computation Element Communication Protocol (PCEP) Extensions to Enable IFIT

draft-chen-pce-pcep-ifit-04

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Background and Motivation

- ❑ In-situ Flow Information Telemetry (**IFIT**) refers to dataplane on-path telemetry techniques, including **IOAM** (draft-ietf-ippm-ioam-data) and **Alternate Marking** (RFC8321, RFC8889)
- ❑ The **PCEP extension** defined in this document allows to signal the IFIT capabilities. In this way IFIT methods are automatically activated and running.

The IFIT attributes can be generalized and included as **TLVs** carried inside the **LSPA (LSP Attributes) object** in order to be applied for all path types, as long as they support the relevant data plane telemetry method

Changes from -02

- Specified the usage scenario of IFIT

IFIT is a solution focusing on specific network domains according to RFC8799.

- For a number of reasons, such as policies, options supported, style of network management and security requirements, it is suggested to limit applications including the emerging IFIT techniques to a controlled domain.

- Improved Security Considerations section

IFIT data **MUST** be propagated in a limited domain to avoid malicious attacks. Solutions to ensure this requirement are respectively discussed in [draft-ietf-ippm-ioam-data](#) and [draft-ietf-6man-ipv6-alt-mark](#).

- A limited administrative domain provides the network administrator with the means to select, monitor and control the access to the network, making it a trusted domain also for the PCEP extensions defined in this document.

IOAM Sub-TLVs

- IOAM Pre-allocated Trace Option Sub-TLV

Type=1		Length=8	
Namespace ID		Rsvd1	
IOAM Trace Type		Flags	Rsvd2

- IOAM Incremental Trace Option Sub-TLV

Type=2		Length=8	
Namespace ID		Rsvd1	
IOAM Trace Type		Flags	Rsvd2

- IOAM Directly Export Option Sub-TLV

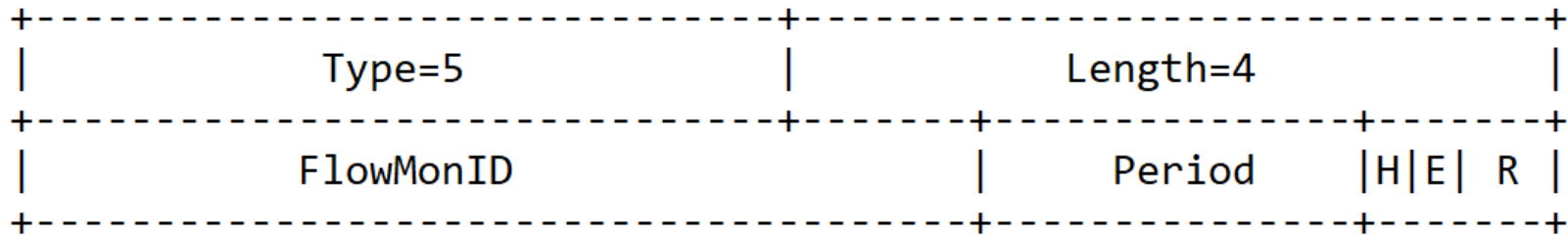
Type=3		Length=12	
Namespace ID		Flags	
IOAM Trace Type		Rsvd	
Flow ID			

- IOAM Edge-to-Edge Option Sub-TLV

Type=4		Length=4	
Namespace ID		IOAM E2E Type	

Enhanced Alternate Marking Sub-TLV

- Enhanced Alternate Marking Sub-TLV



H: A flag indicating that the measurement is Hop-By-Hop.

E: A flag indicating that the measurement is end to end.

Discussion & Next Steps

- Since IFIT methods are becoming mature for SR-MPLS and SRv6, IFIT attributes TLV also complements [draft-ietf-pce-segment-routing-policy-cp](#) to enable SR policy with native IFIT.
- Evaluate WG adoption
- Welcome questions, comments

Thank you