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

draft-ietf-pce-pcep-ifit-01

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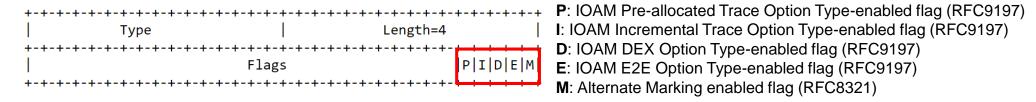
#### Background and Motivation

- In-situ Flow Information Telemetry (**IFIT**) refers to dataplane on-path telemetry techniques, including **IOAM** (RFC9197) and **Alternate Marking** (RFC8321bis, RFC8889bis)
- □ The PCEP extension defined in this document allows to distribute paths carrying IFIT information. In this way IFIT methods are automatically activated and running when the path is instantiated.
  - □ A PCC can indicate which IFIT features it supports
  - ☐ A PCE can configure IFIT behavior at a PCC for a specific path in the stateful PCE model.

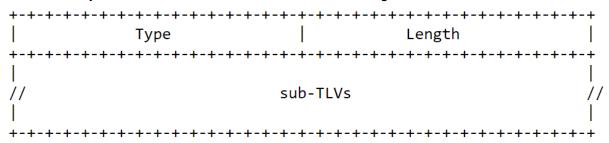
The IFIT attributes can be generalized and included as **TLVs** carried inside the **LSPA** (**LSP Attributes**) **object** in order to be applied for all path types, as long as they support the relevant data plane telemetry method

## IFIT capability advertisement TLV and IFIT Attributes TLV

A new **IFIT-CAPABILITY TLV** as an optional IFIT TLV in the OPEN Object for PCEP capability advertisement



The **IFIT-ATTRIBUTES TLV** provides the configurable knobs of the IFIT feature, and it can be included as an optional TLV in the **LSPA object** 



IOAM and AltMark Sub-TLVs defined:

- ✓ IOAM Pre-allocated Trace Option Sub-TLV
- ✓ IOAM Incremental Trace Option Sub-TLV
- ✓ IOAM Directly Export Option Sub-TLV
- ✓ IOAM Edge-to-Edge Option Sub-TLV
- ✓ Enhanced Alternate Marking Sub-TLV

### Changes from -00

#### Main comments addressed after the adoption:

- Clarification on the headend support of IFIT capability. It is supposed that there are at least two
  nodes (e.g. starting and ending node) which support it
- IFIT methods (IOAM and Alternate Marking) are more mature for SRv6 and compared to SR-MPLS.
  - For SRv6, the references are <u>draft-ietf-6man-ipv6-alt-mark</u> (RFC Ed Queue) and <u>draft-ietf-ippm-ioam-ipv6-options</u> (IESG review)
  - For SR-MPLS, there are different proposals and references are not included in the current draft version
- Relation with <u>draft-ietf-idr-sr-policy-ifit</u>: both PCEP and BGP can be used to instantiate SR Policies, so it is reasonable to have the same IFIT mechanism for PCEP and BGP.
- Clarification about the IFIT terminology and framework (<u>draft-song-opsawg-ifit-framework</u>)
- Editorial comments

#### Next Steps

Relevant document to enable IFIT (IOAM and AltMark) control mechanisms

Welcome questions, comments

Thank you