LISP Trans in MPLS network

draft-hu-lisp-mpls-trans-00.txt

Fangwei Hu, Zhongyu GU and Lizhong Jin
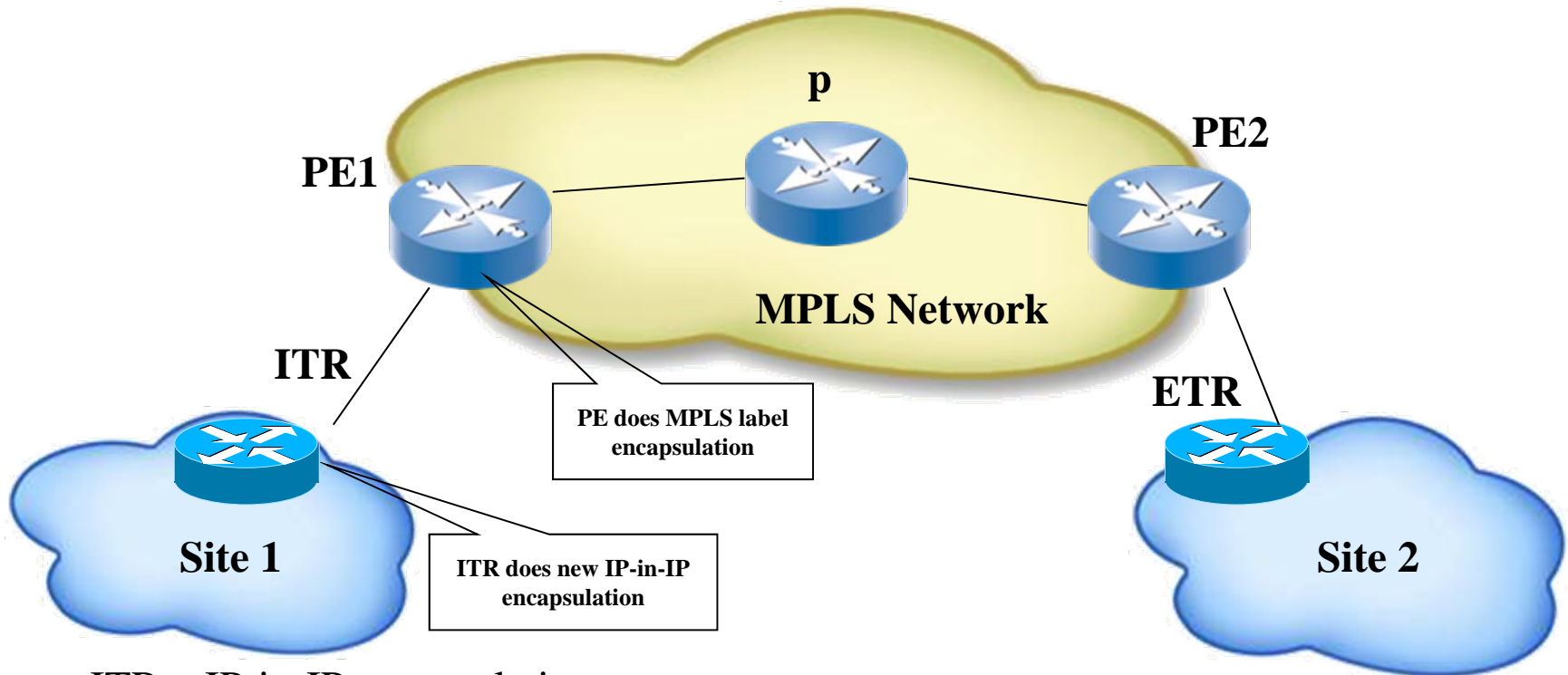
IETF 77, Anaheim, California

LISP Working Group

Mar 2010

MPLS

- Support Traffic Engineer , QoS, VPN service

- Widely deploy in current network

- considered that the label-based switching technology can be used to deploy the LISP protocol

# LISP deployment in MPLS network

ITR : IP-in-IP encapsulation

PE1: MPLS label encapsulation

End-to-end MPLS solution between PE1 and PE2

motivation

- IP-in-IP encapsulation + MPLS label encapsulation
  - too complex
  - Low encapsulation efficiency
  - Low bandwidth transport efficiency

- End-to-end MPLS deploy only between LER1 and LER2
  - ITR and ETR doesn't run MPLS

End-to-end MPLS deployment between ITR and ETR
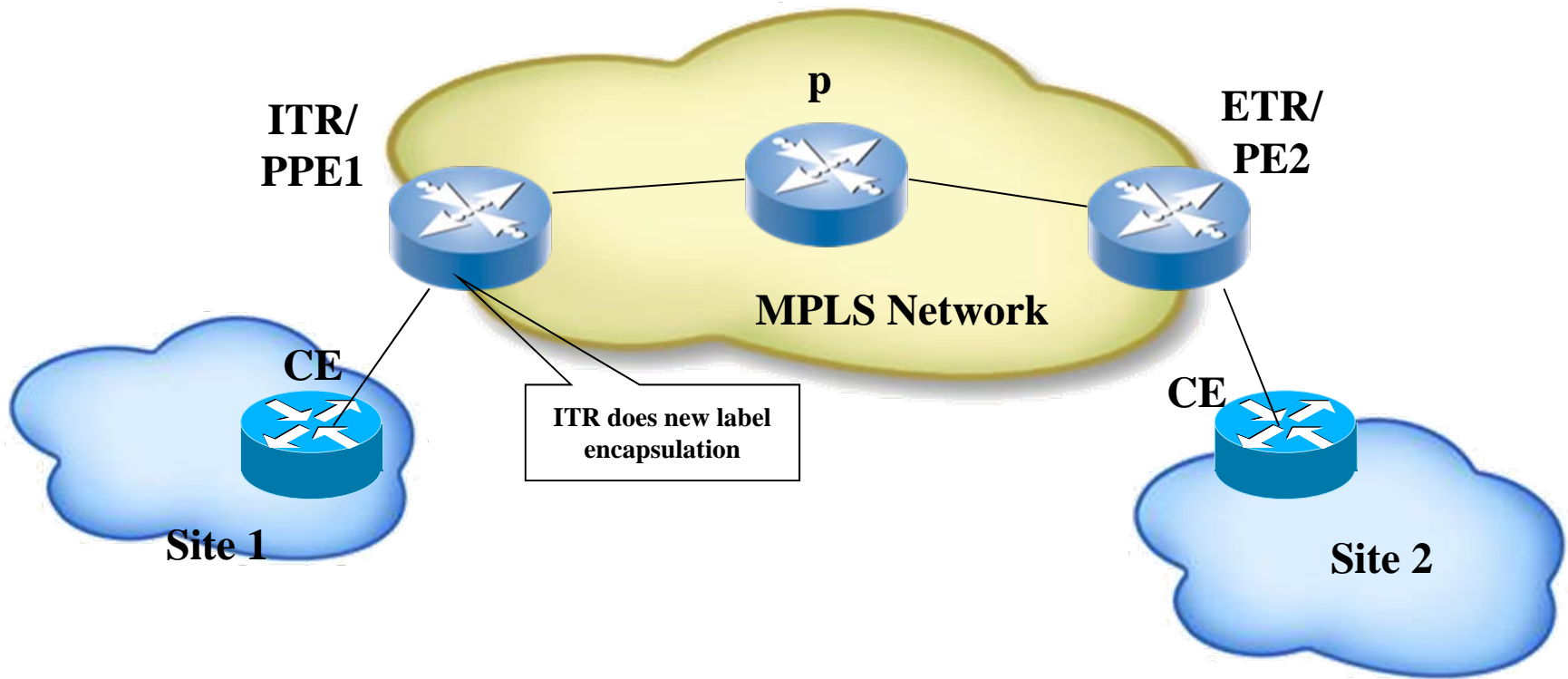
ITR /PE: ITR acts as PE, and does new label encapsulation

End-to-end MPLS solution can be deployed between ITR and ETR

data encapsulation

```
+-----------+
+  Label    +
+           +
+-----------+
+   outer   +
+ IP Header +
+-----------+
+    UDP    +
+-----------+
+   LISP    +
+-----------+
+   Inner   +
+ IP Header +
+-----------+
```

```
+---------+
+  outer  +
+  label  +
+---------+
+  inner  +
+  label  +
+---------+
+  LISP   +
+---------+
+  Inner  +
+ IP Header+
+---------+
```

IP-in-IP + MPLS encapsulation

New label encapsulation

Simplify the LISP data packet by a new MPLS label encapsulation format

Outer label

- Point to point LSP tunnel is established between ITR and ETR
- LSP tunnel and out label distribution by MPLS signaling protocol

Inner label

- identify the MPLS packet which encapsulates LISP type packet
- identify the source RLOC of the LISP packet

- be distributed by MP-BGP protocol
- AF of MP-BGP should be extended

Next Steps

- Comments and feedback from LISP group

Q&A

Thanks!