PIM Join/ Prune Attributes for LISP Environments using Underlay Multicast

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Updates since last IETF

- draft-vgovindan-pim-jp-extensions-lisp-00 was presented in PIM WG @ IETF-110, action items:
  - Need to present this draft to LISP: Will be done at IETF-111
  - Evaluate the need to have a new attribute versus reuse existing PIM J/P attribute [RFC8059]:
    - Extensive discussions were held offline.
    - Decided to reuse the existing Receiver ETR RLOC attribute[RFC8059], <u>extending</u> the scope of the definition of the Receiver RLOC field of the attribute.
    - draft-vgovindan-pim-jp-extensions-lisp-01 version proposing the extended scope of the existing attribute submitted.
    - Security considerations section is still work-in-progress.

Problem statement

- IP Multicast Source(s) and receiver(s) in different (and same) LISP sites [RFC6831]
  - ASM, SSM and BIDIR modes supported in overlay
- IP-multicast based underlay
- 'm' Overlay IP multicast groups mapped to 'n' underlay IP multicast groups, where m >> n (Sec 8.1.2 of RFC 6831)
  - Problem compounded for IP multicast flowing across multisite
  - Special case: 1 overlay mapped to 2 or more underlay groups for flexibility
  - Use different underlay groups (G-u1 and G-u2) for (S1, G-o) and (S2, G-o)
- Border nodes play a special role:
  - They participate in the PIM signaling of upto three different PIM domains: Two in the underlay and one in the overlay.

Illustration

Receiver ETR RLOC attribute [RFC8059]

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|F|E|  Type = 6 |     Length      | Addr Family  |  Receiver RLOC
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-...
```
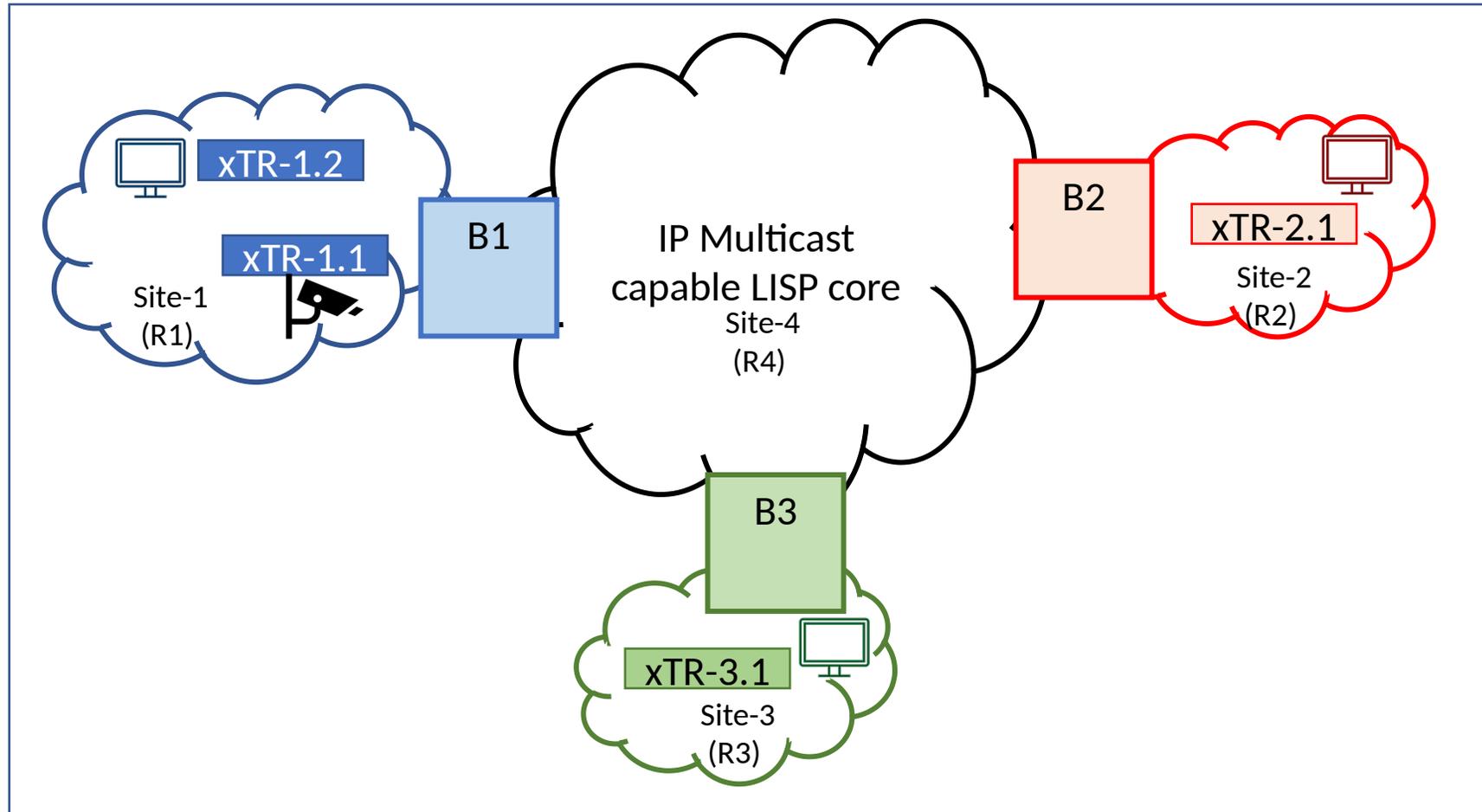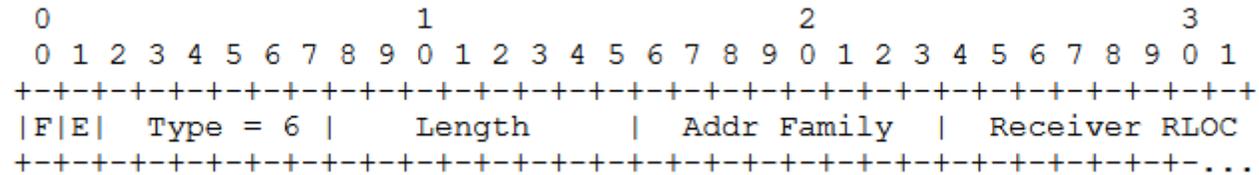
- The scope of the receiver RLOC field is now expanded to include Multicast addresses
  - Receiver RLOC: Can include the underlay group address (G-u) used for transporting the overlay multicast stream to which the downstream router is sending a join
- Definition of F, E, Type, Length and Address Family same as RFC8059

Next Steps

- Get comments from WG and request WG adoption