# Basic Use Case and Potential Solutions for Multicast Segment Routing IPv6 (MSR6)

# Basic Use Case for MSR6

- Traditional multicast services, e.g., IPTV , the following 4 scenarios should be considered in an IPv6 network:

    - Intra-AS deployment with all nodes supporting MSR6

    - Intra-AS deployment with some intermediate nodes not supporting MSR6

    - Intra-AS deployment with some edge nodes not supporting MSR6

    - Inter-AS deployment

- Potential multicast use case for live video, e.g., Live Sports Events in IPv6 network

    - Multicast source is not static and the location of the source depends on the requirement
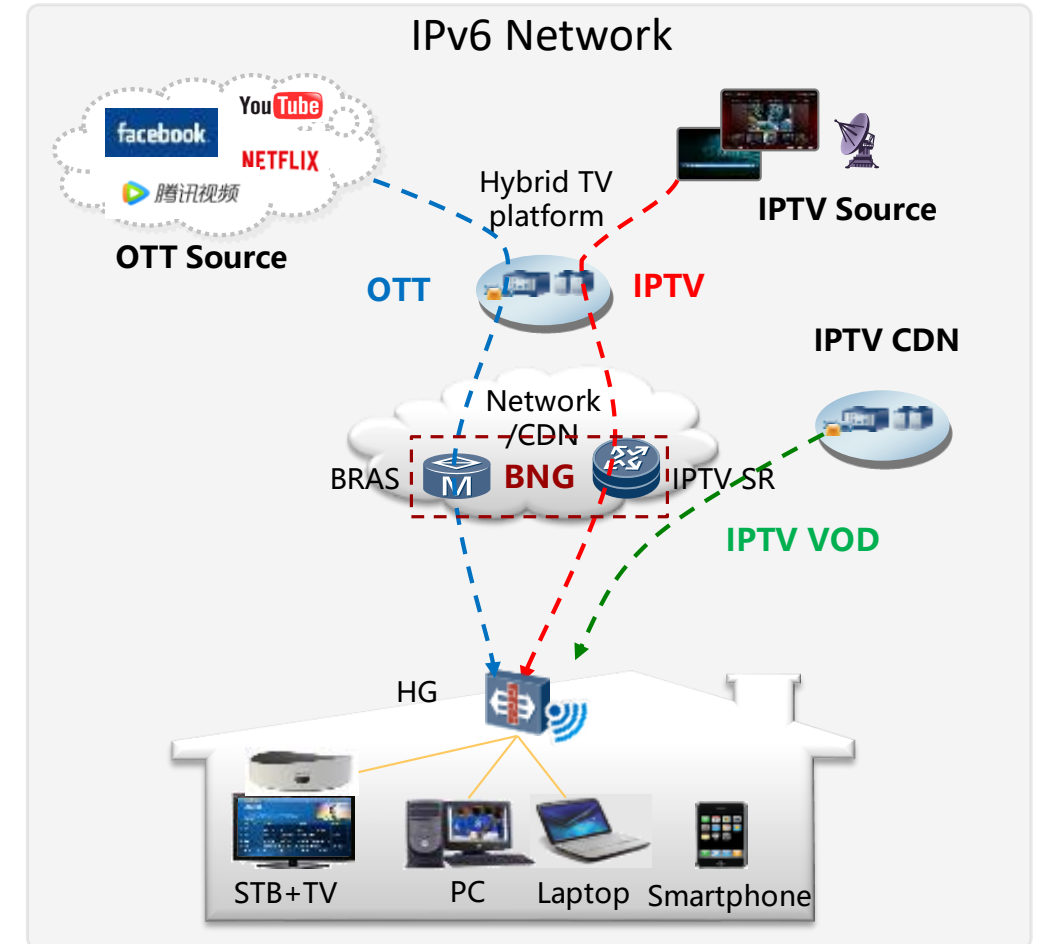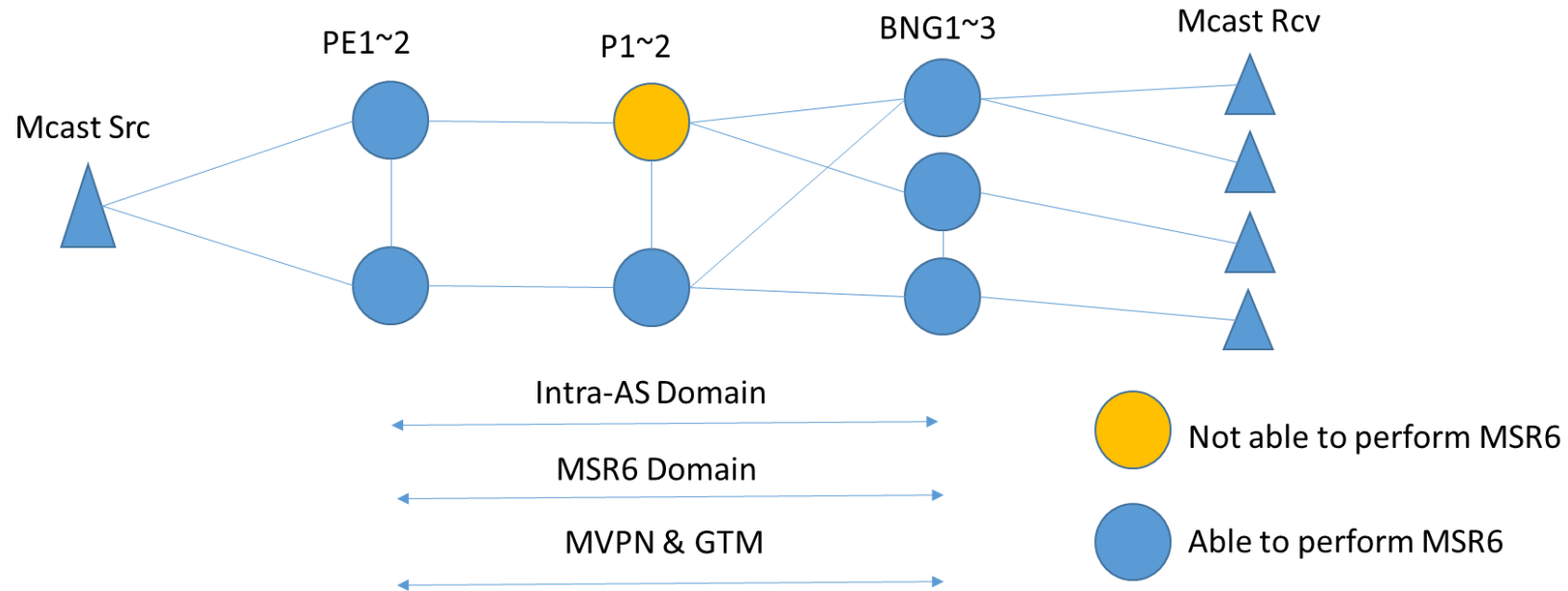
# Use Case 1: Intra-AS deployment case
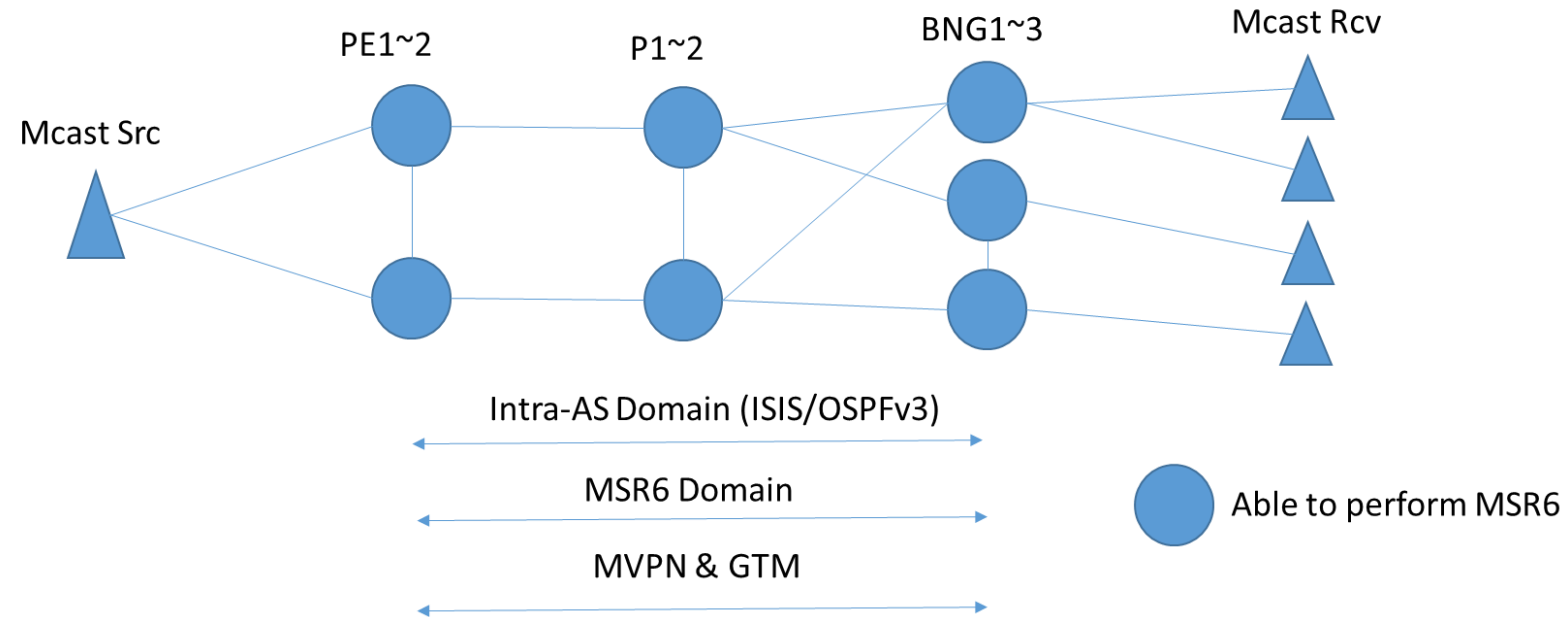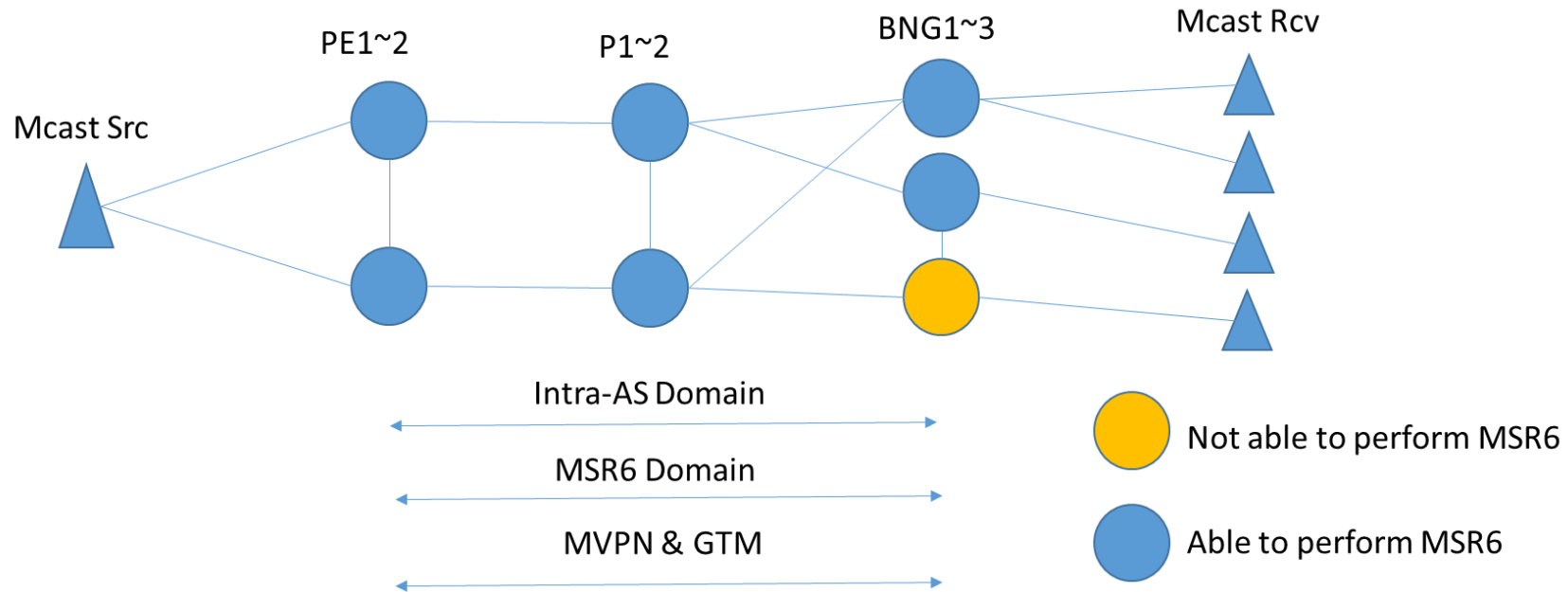


- Case-1: MSR6 Intra-AS deployment

  - Deploy MSR6 in the same AS domain

  - MVPN is used to provide service isolation among different multicast service

  - All the nodes in the network could support MSR6
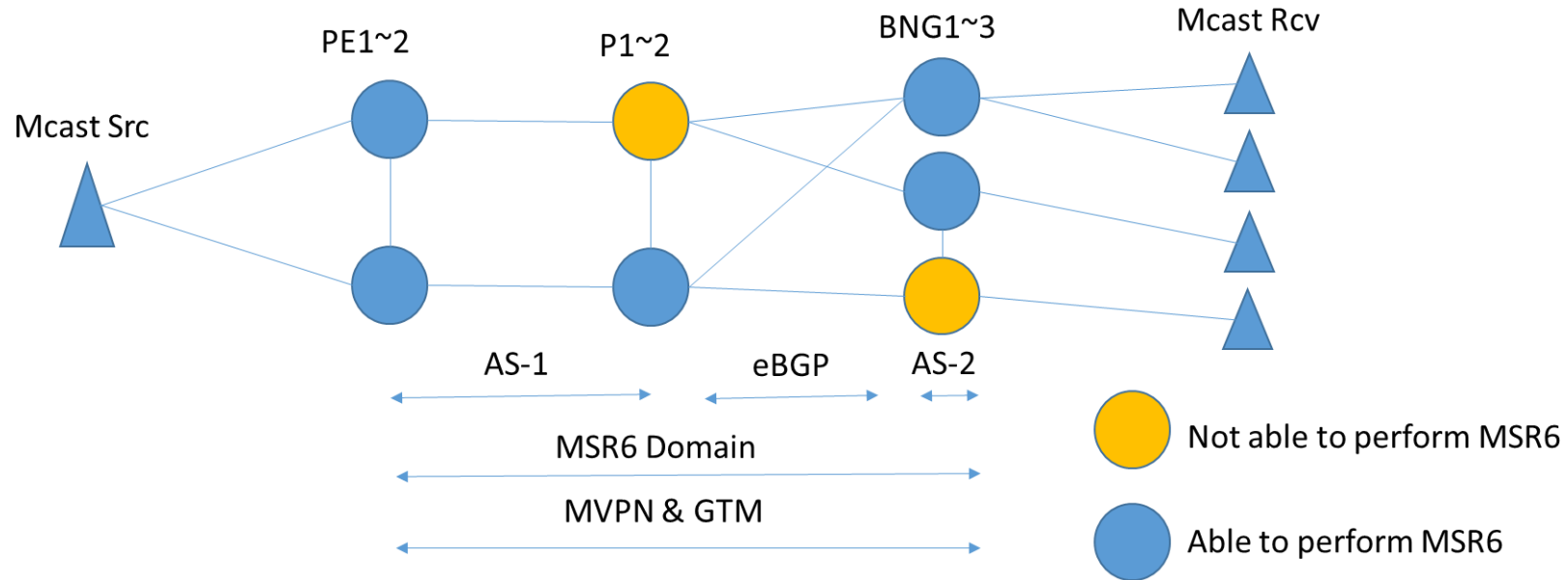
# Use Case 2: Intra-AS deployment case



- Case-2: MSR6 Intra-AS deployment, with intermediate nodes not able to perform MSR6.

  - Deploy MSR6 in the same AS domain

  - MVPN is used to provide service isolation among different multicast service

  - Not all nodes could be are upgraded
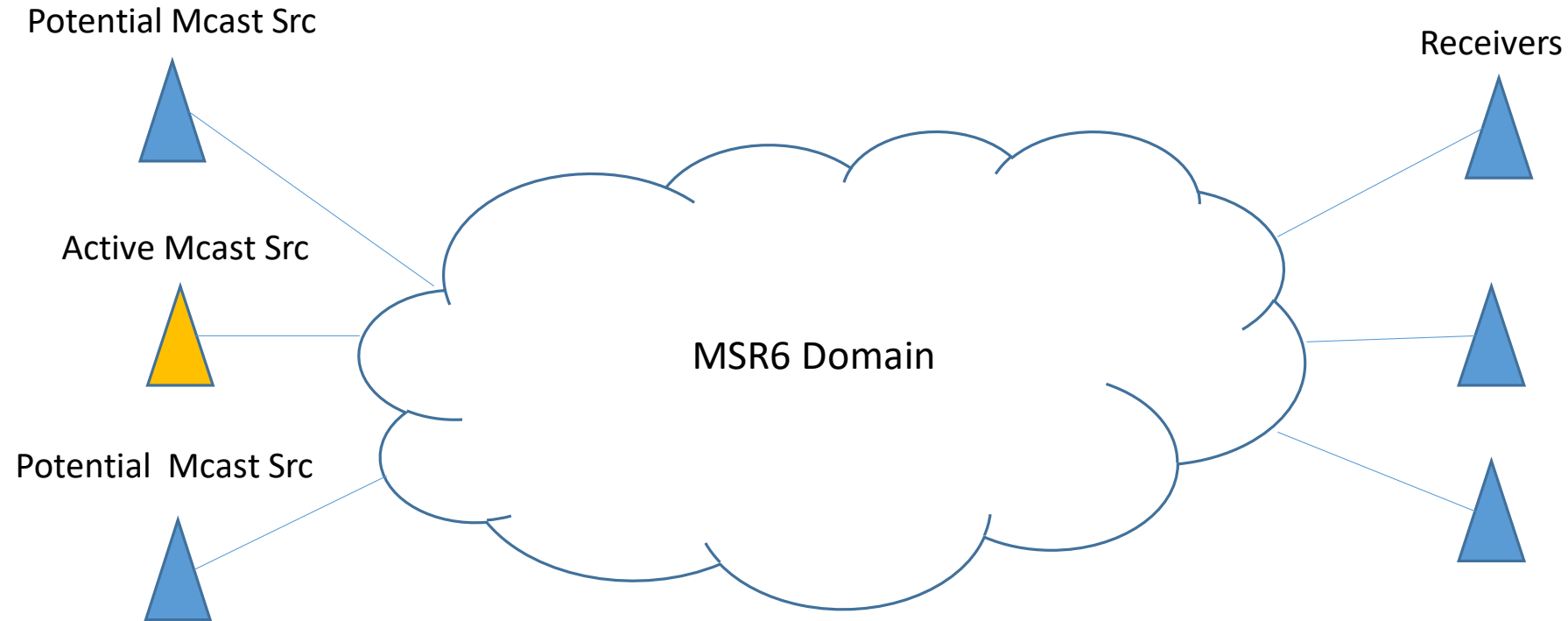
# Use Case 3: Intra-AS deployment case



- Case-3: MSR6 Intra-AS deployment, with some Edge/Bud nodes not able to perform MSR6.

  - Deploy MSR6 in the same AS domain

  - MVPN is used to provide service isolation among different multicast service

  - Some of the edge nodes could belong to different company or can't be upgraded

# Use Case 4: Inter-AS deployment case



- Case-4: MSR6 Inter-AS deployment, with Intermediate + Edge/Bud nodes not able to perform MSR6.

  - Deploy MSR6 in inter AS domains, e.g., some large province in China

  - MVPN is used to provide service isolation among different multicast service

  - Some of the intermediate or edge nodes could belong to different company or can't be upgraded

# Use Case 5: Potential multicast use case for live video



- Case-5: MSR6 Inter/Intra-AS/ deployment, with non-static multicast source.

  - Deploy MSR6 in inter/Intra AS domains;

  - The source is non-static, so the ingress is supposed to program the packet based on requirement with source routing;

# MSR6 BE Solution Proposal
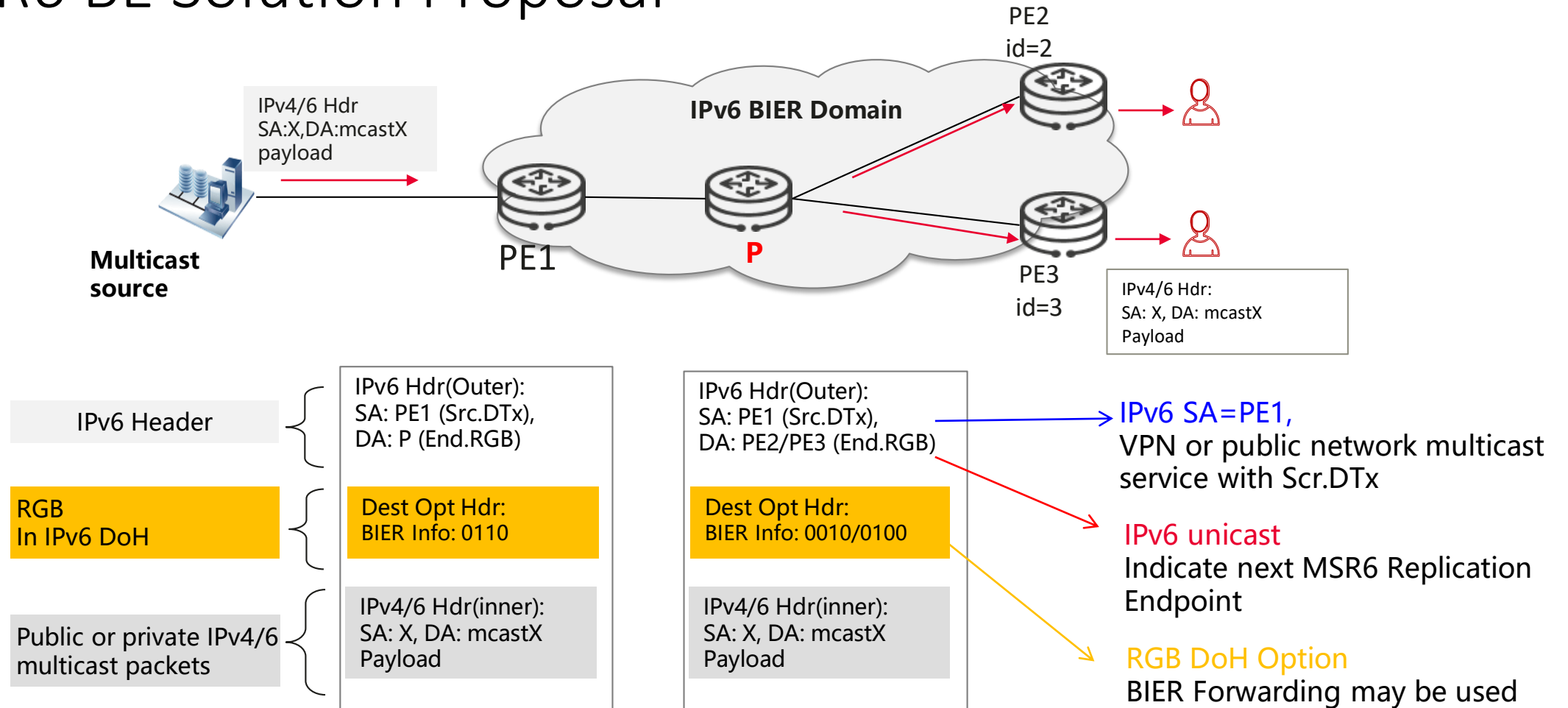


- MSR6 Source Node encapsulates IPv6 packet headers with RGB(Replication through Global Bitstring) DoH Option.
- MSR6 Replication Endpoint forwards the packet to the next-hop Replication Endpoint based on End. RGB.
- MSR6 leaf node decapsulates the outer IPv6 header, and forwards the original packet to the user based on Scr. DTx.

Thank you