

Signal-Free LISP Multicast

draft-farinacci-lisp-signal-free-00

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Problem Statement

- Can we get a multicast overlay to connect multicast distribution trees at LISP sites?
- Can we do it with zero xTR signaling?
- Simpler alternative to RFC 6831 and `draft-farinacci-lisp-mr-signaling`

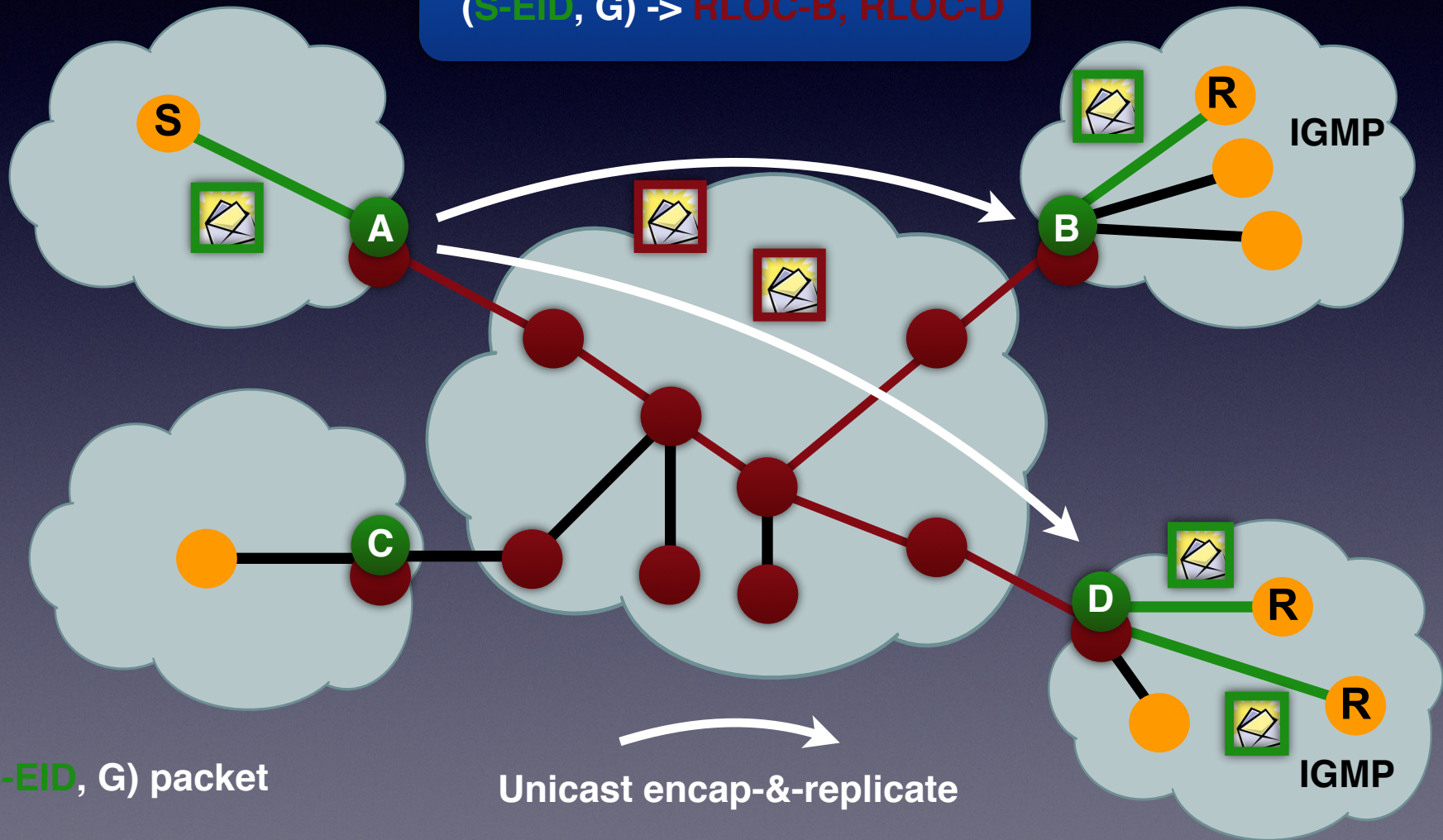
Solution

- Use Mapping Database System to rendezvous ITRs and ETRs per (S-EID, G) entry
- Centralized control for access and policy

Simple Case

Mapping-Database

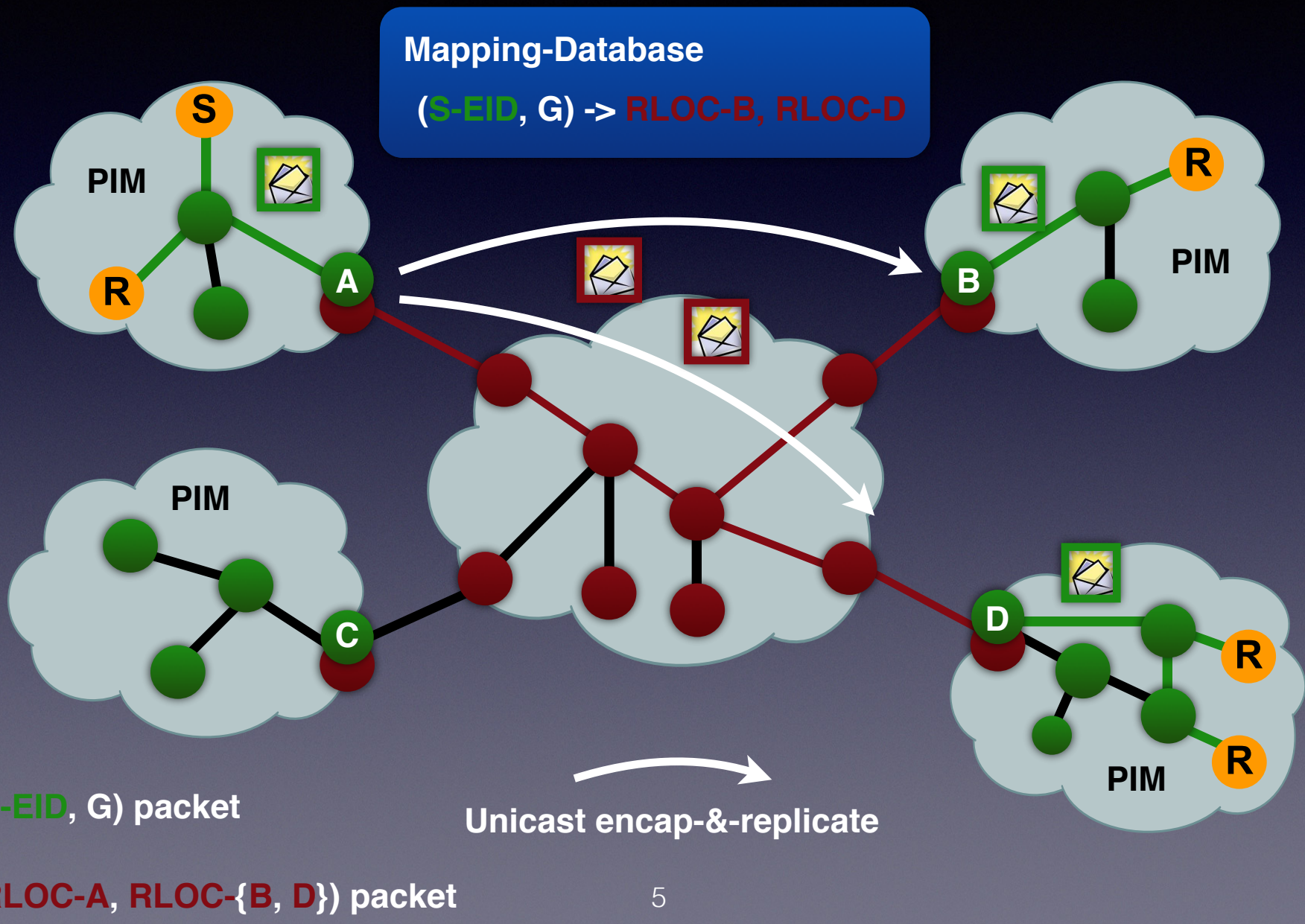
(S-EID, G) -> RLOC-B, RLOC-D



(S-EID, G) packet

(RLOC-A, RLOC-{B, D}) packet

Complex Case



Receiver-ETR Procedures

- When ETR learns about receivers
 - From IGMP or PIM at receiver site
 - ETR merges itself into (S-EID, G) entry via a Map-Register
 - The ETR is adding itself to a replication-list

Sender-ITR Procedures

- When ITR receives packet from inside of site
 - It looks up (S-EID, G) in mapping database
 - To retrieve replication list - caches entry
 - Replicates multicast packet and encapsulates to each ETR in the replication list
 - **"Rep-encapsulation"**
- ITR sends Map-Register for (S-EID-prefix, *) for site

Notification Procedures

- When Map-Server receives (S-EID, G) Map-Register from new ETR added to replication-list
 - Sends Map-Notify to all registered ITRs for (S-prefix, G)
 - So ITR can update replication-list
 - So ITRs can do site-specific actions

Encoding

- Use LCAF Multicast Info Type for EID-record encoding
- Use LCAF Replication-List-Entry (RLE) for RLOC-record encoding
 - Set level number to 128
 - So possible future integration with LISP-RE
 - RLOC address can be unicast or multicast

Constraints

- Supports SSM only
 - ASM support would require prune signaling on shared-tree
 - But shared-tree-only could be supported
- Head-end replication could stress ITR and bandwidth into core network
 - But could integrate with LISP-RE for hierarchical replication
- All ETRs must register to same Map-Server set for a given (S-EID, G)

Questions?