

LISP Multicast Replication Engineering

draft-coras-lisp-re-02

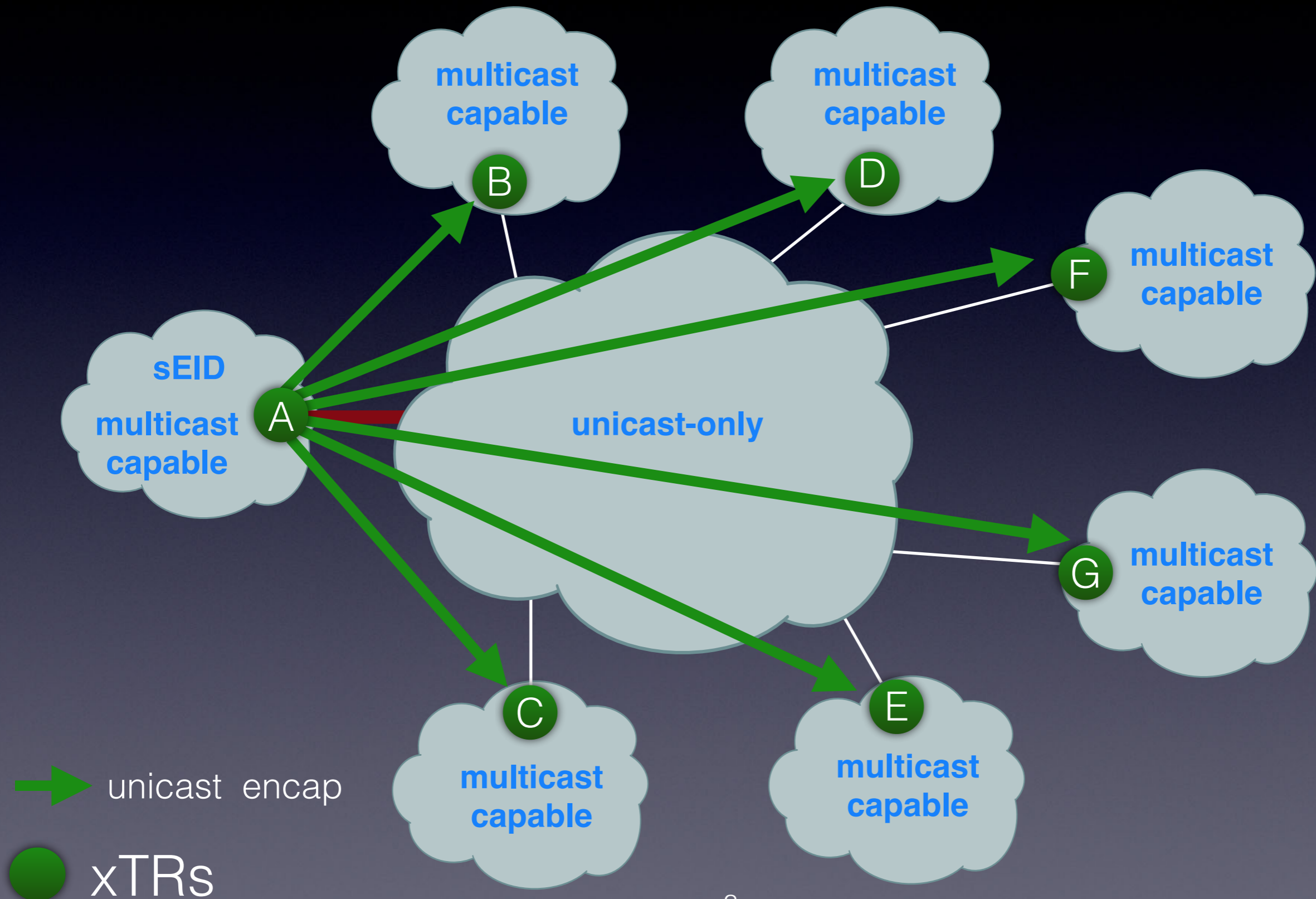
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Dino Farinacci
Florin Coras
Albert Cabellos-Aparicio
Jordi Domingo-Pascual
Fabio Maino

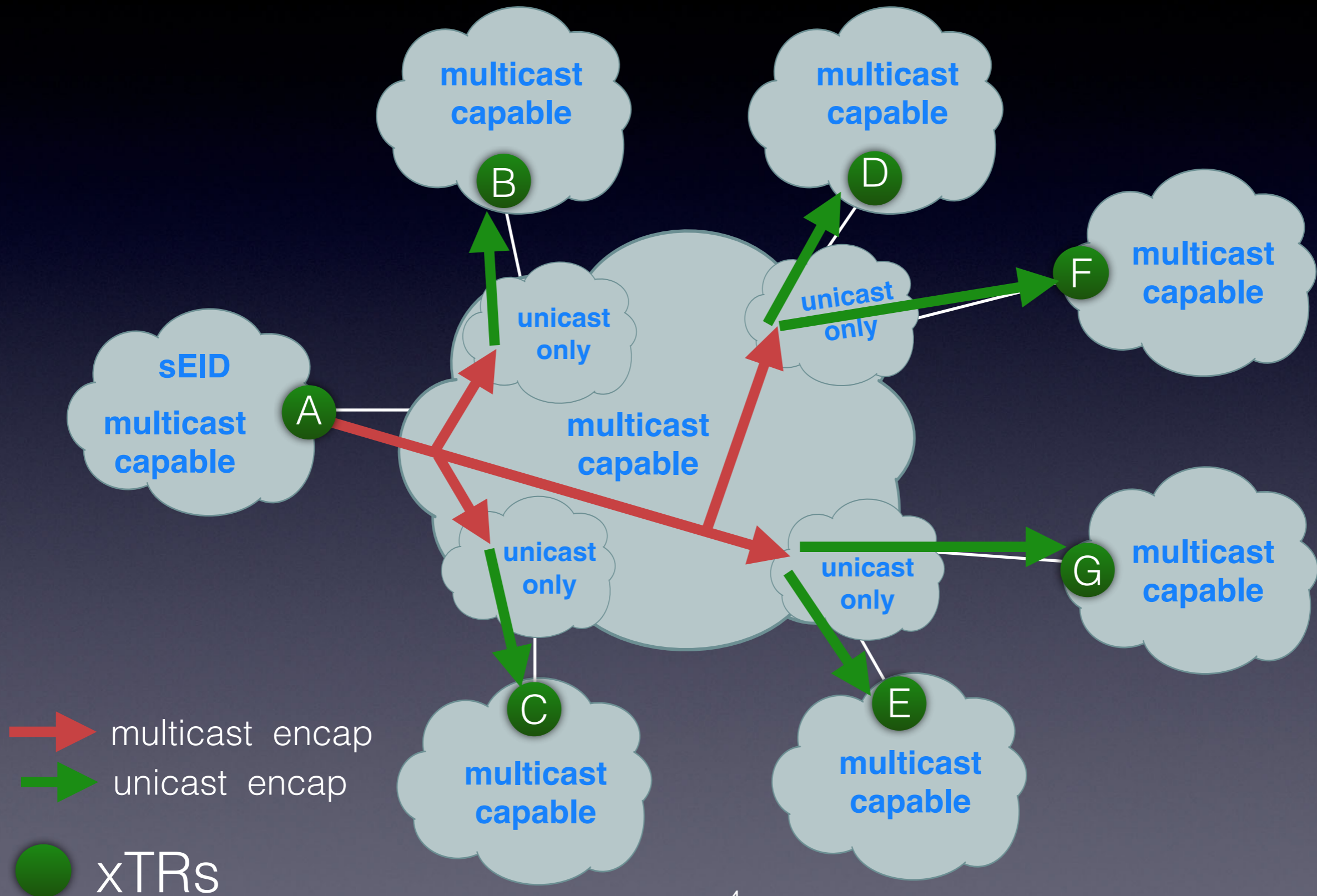
Agenda

- Do we really want ubiquitous multicast?
- Do we want multicast sources to be mobile?
- Do we want IPv6 multicast over an IPv4 infrastructure
- If so, we have to encapsulate multicast inside of unicast
- And we have to do it in a scalable way
- LISP-RE allows us to decide where replication points are in the network
- We will avoid head-end replication in sources and upstream routers

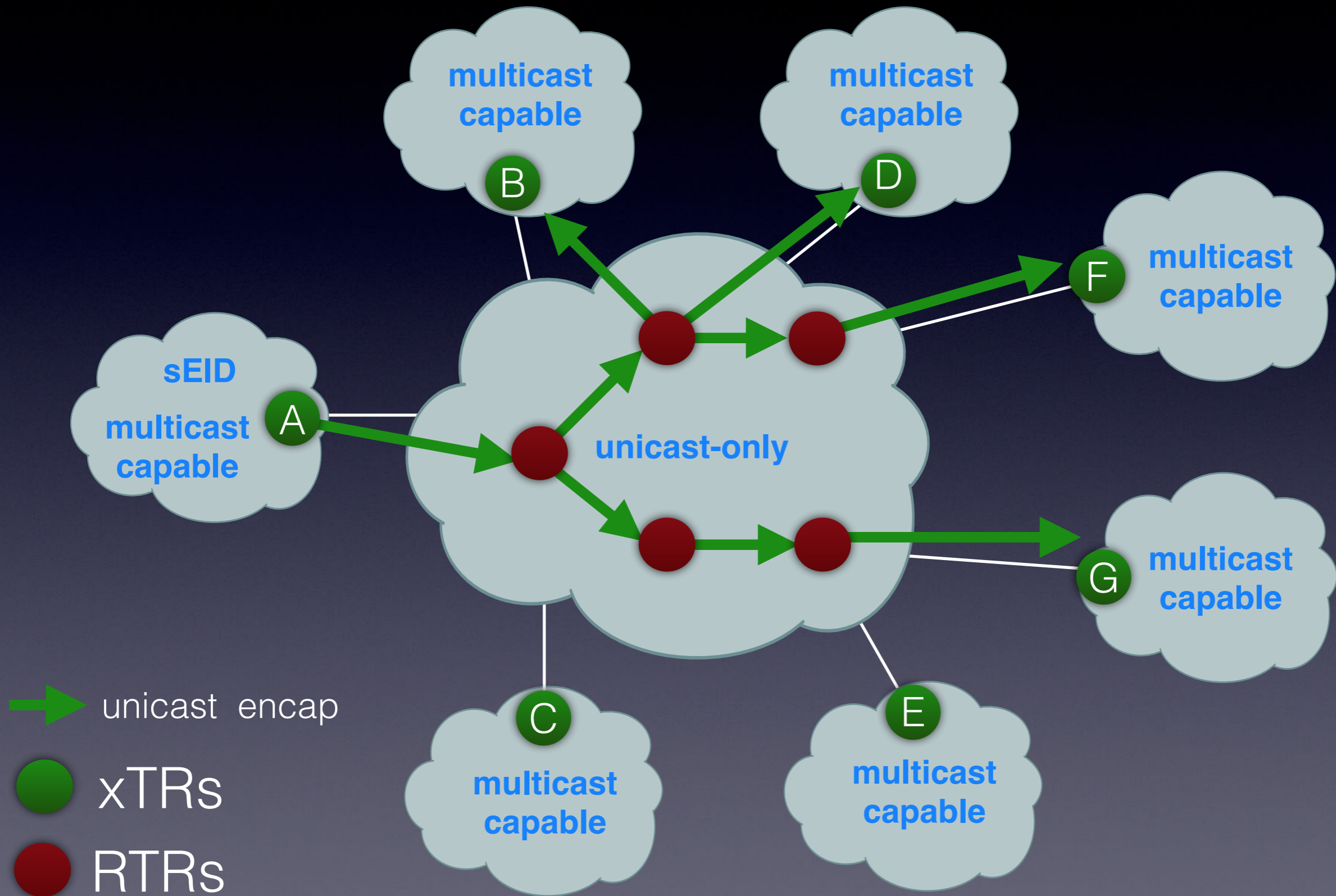
The Problem



A Solution



But When No Multicast in Core



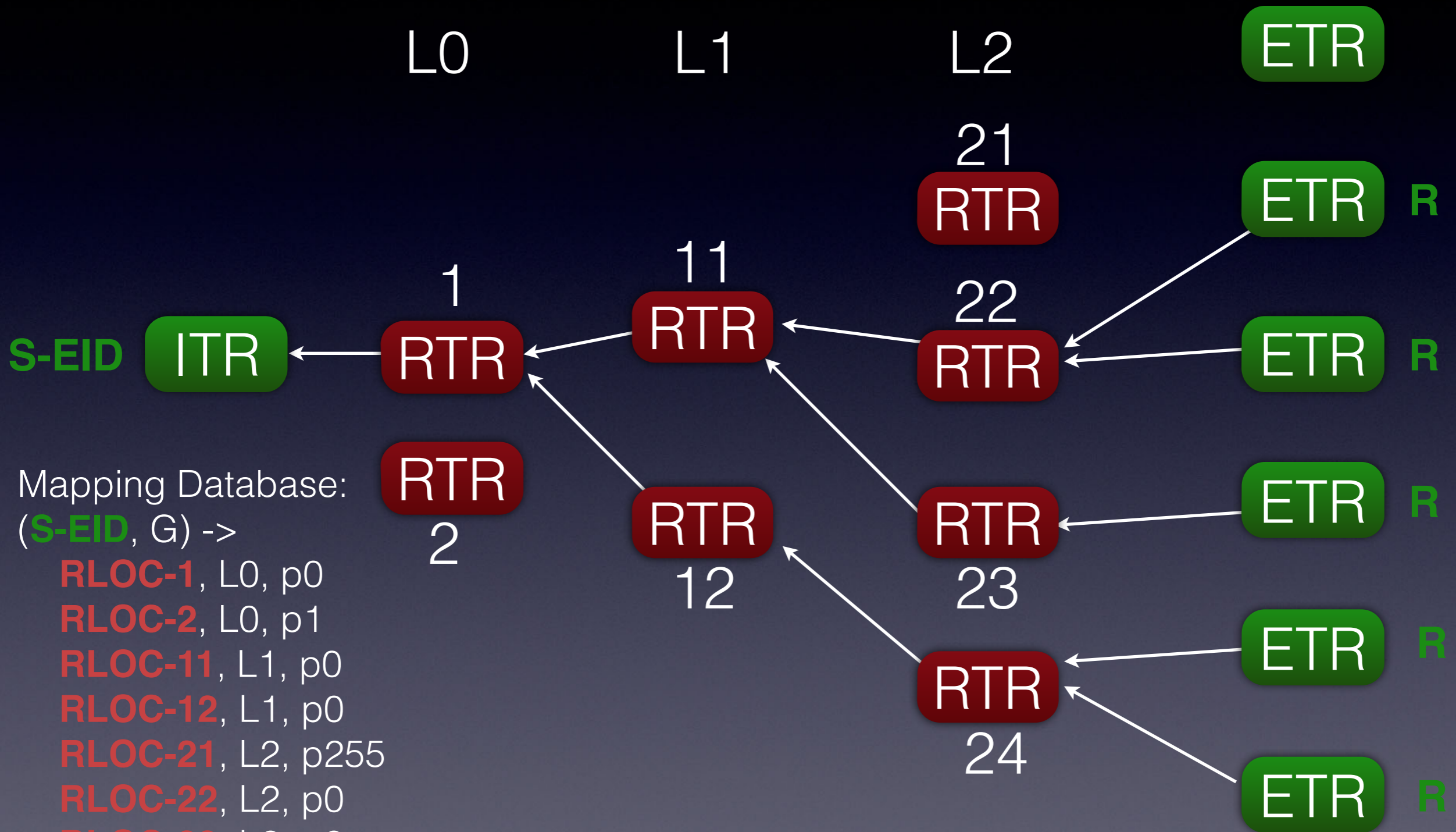
LISP-RE

- Introduces a multi-level RTR hierarchy
- RTRs and levels are registered as RLOCs in a mapping database entry for (S-EID-prefix, G-prefix)
- Protocol signaling (PIM or LISP) is used by ETRs to join to level- (n) RTRs
- Level- (n) RTRs join to level- $(n-1)$ RTRs
- Level- 0 RTRs join to ITRs

LISP-RE

- The Mapping Database Entry informs **how** to build distribution trees
- Protocol signaling informs replicators **where** to forward packets per (S-EIDi, Gi)
- Signaling tells downstream if upstream can reach it - if not, join to alternate upstream

Possible Deployment



Mapping Database:
 (S-EID, G) ->
 RLOC-1, L0, p0
 RLOC-2, L0, p1
 RLOC-11, L1, p0
 RLOC-12, L1, p0
 RLOC-21, L2, p255
 RLOC-22, L2, p0
 RLOC-23, L2, p0
 RLOC-24, L2, p0

This is Fresh Work

- Work began last IETF
- UPC guys are working on optimization algorithms
- Considering how LISP-TE ELPs can be used to describe multi-level RTR paths
- An RTR level could be reachable via a DG
- Testing Network Controller approach

Q&A

*Any computer science problem can be solved
with another level of indirection*