

I E T F[®]

Extension of the MLD proxy functionality to support multiple upstream interfaces

<draft-contreras-multimob-multiple-upstreams-00.txt>

Luis M. Contreras
Telefónica I+D

Carlos J. Bernardos
Universidad Carlos III de Madrid (UC3M)

Atlanta, MULTIMOB WG, November 2012

Motivation

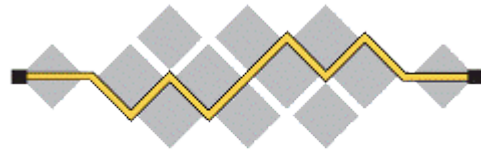
- The support of multiple upstream interfaces on an MLD proxy functionality has been identified as an opportunity for system optimization
- Advantages:
 - Traffic routing optimization within the PMIPv6 domain
 - Simultaneous support of remote & local multicast subscription
 - Avoidance of multi-MLD proxy instances on MAG
- Complexity
 - Handling of control messages for/from multiple upstreams
 - Efficient handling of data traffic for/from multiple upstreams
- Purpose
 - Requirements identification for supporting multiple upstreams
 - Specification of the needed MLD proxy functional extensions

Scenarios of applicability for MULTIMOB

- Listener mobility
 - ✓ Single MLD proxy instance on MAG
 - ✓ Remote and local multicast subscription
 - ✓ Dual subscription to multicast groups during handover
- Source mobility
 - ✓ Support of remote and direct subscription in basic source mobility
 - ✓ Direct communication between source and listener associated with distinct LMAs but on the same MAG
 - ✓ Route optimization support in source mobility for remote subscribers

Summary of needed functionality per scenario

	Multicast Listener			Multicast Source		
Functionality	Single MLD proxy (4.1.1)	Remote & Local Subscr. (4.1.2)	Dual Subscr. during HO (4.1.3)	Direct & Remote Subs. (4.2.1)	Listener & Source on MAG (4.2.2)	Route Optimiz. (4.2.3)
Upstream Control Delivery	x	x	x	x	x	x
Downstream Control Delivery	x	x	x		x	
Upstream Data Delivery				x		x
Downstream Data Delivery	x	x	x		x	
1:1 MN to Upstream Association	x					
1:N MN to Upstream Association		x	x	x	x	x
Upstream i/f selection per mcast group		x				
Upstream i/f selection for all groups			x			
Upstream traffic replication				x		x



I E T F[®]

Extension of the MLD proxy functionality to support multiple upstream interfaces

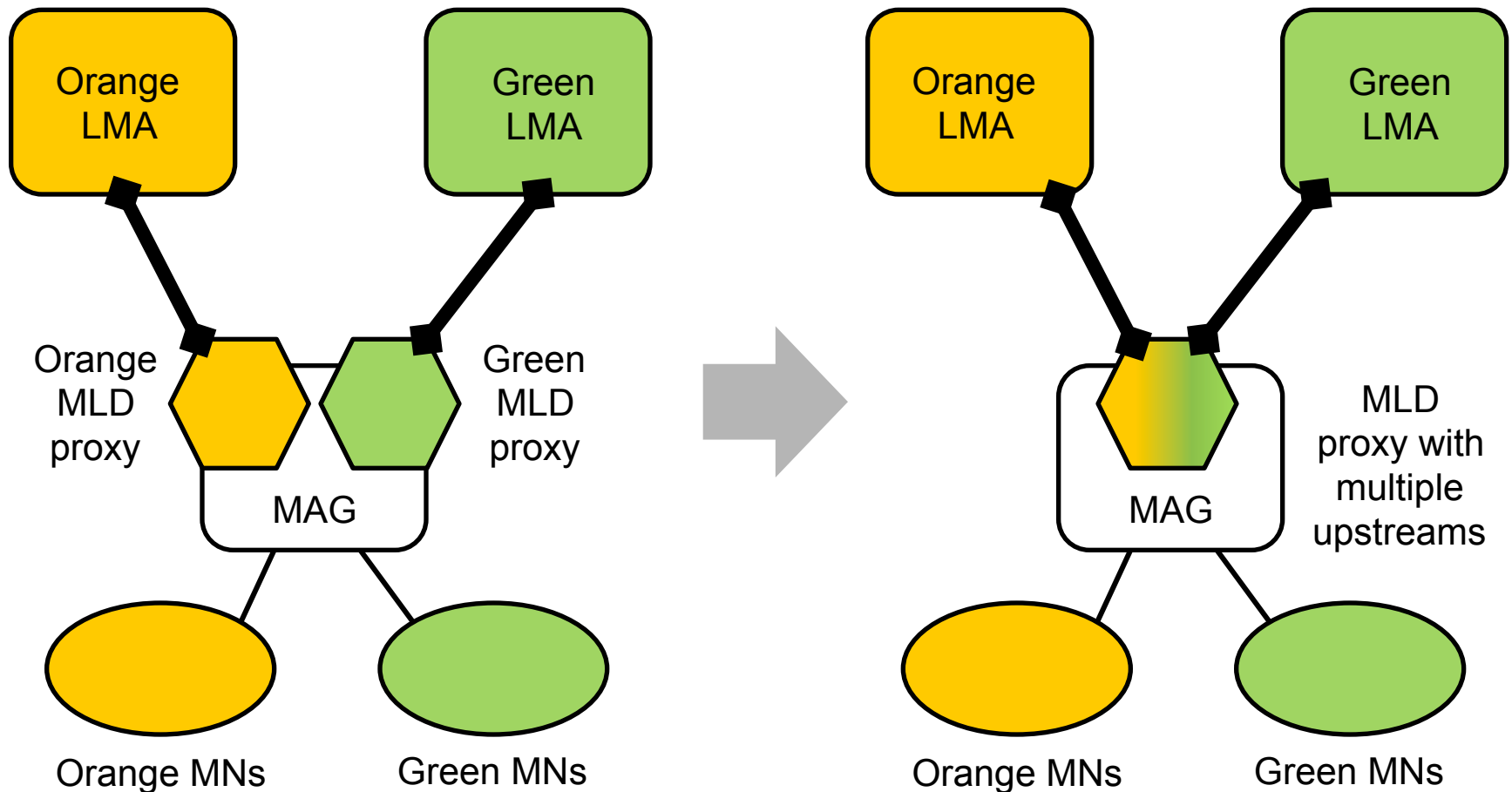
<draft-contreras-multimob-multiple-upstreams-00.txt>

Backup slides

Applicability Scenarios for MULTIMOB

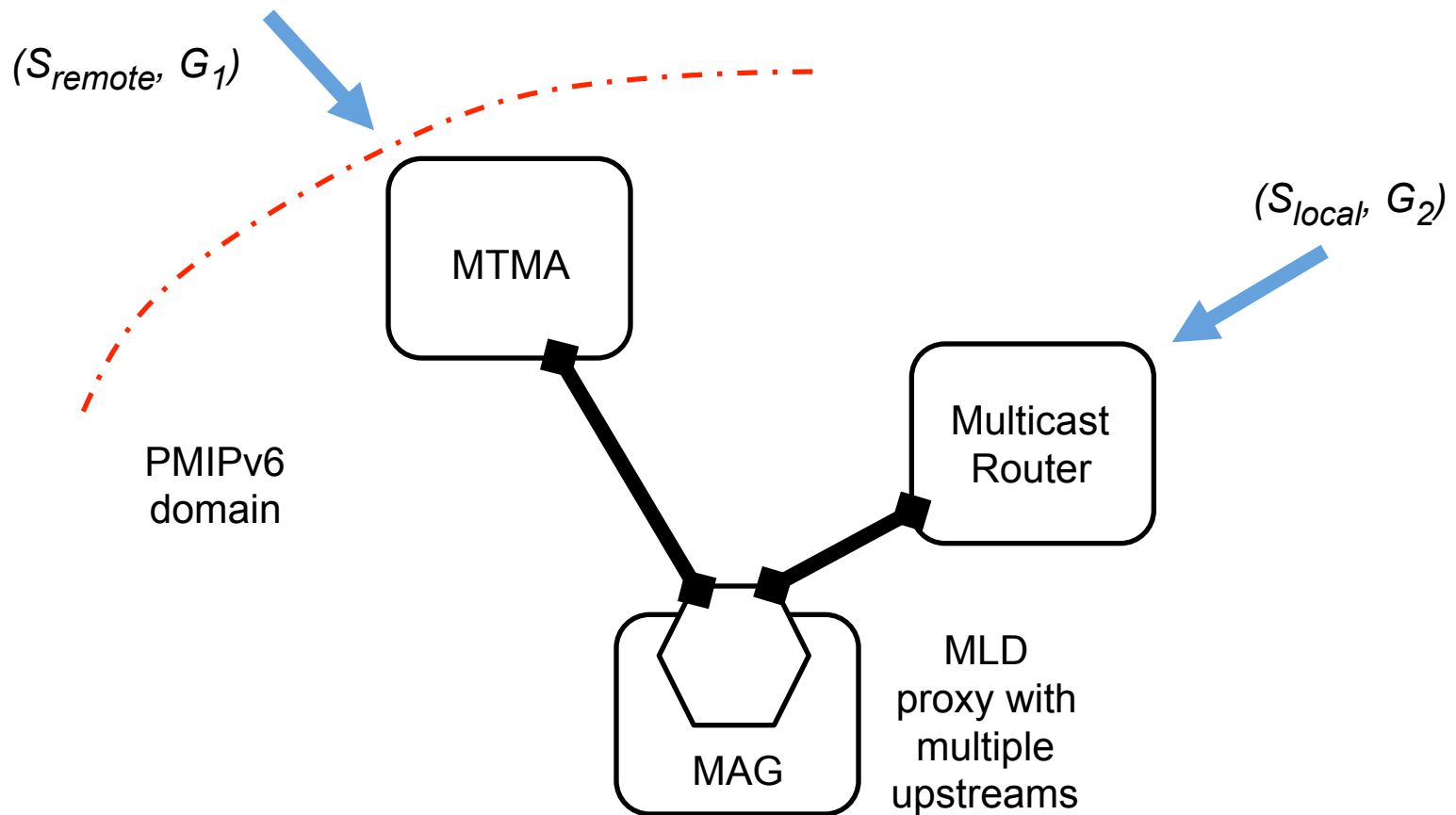
Listener mobility

Single MLD proxy instance on MAG



Listener mobility

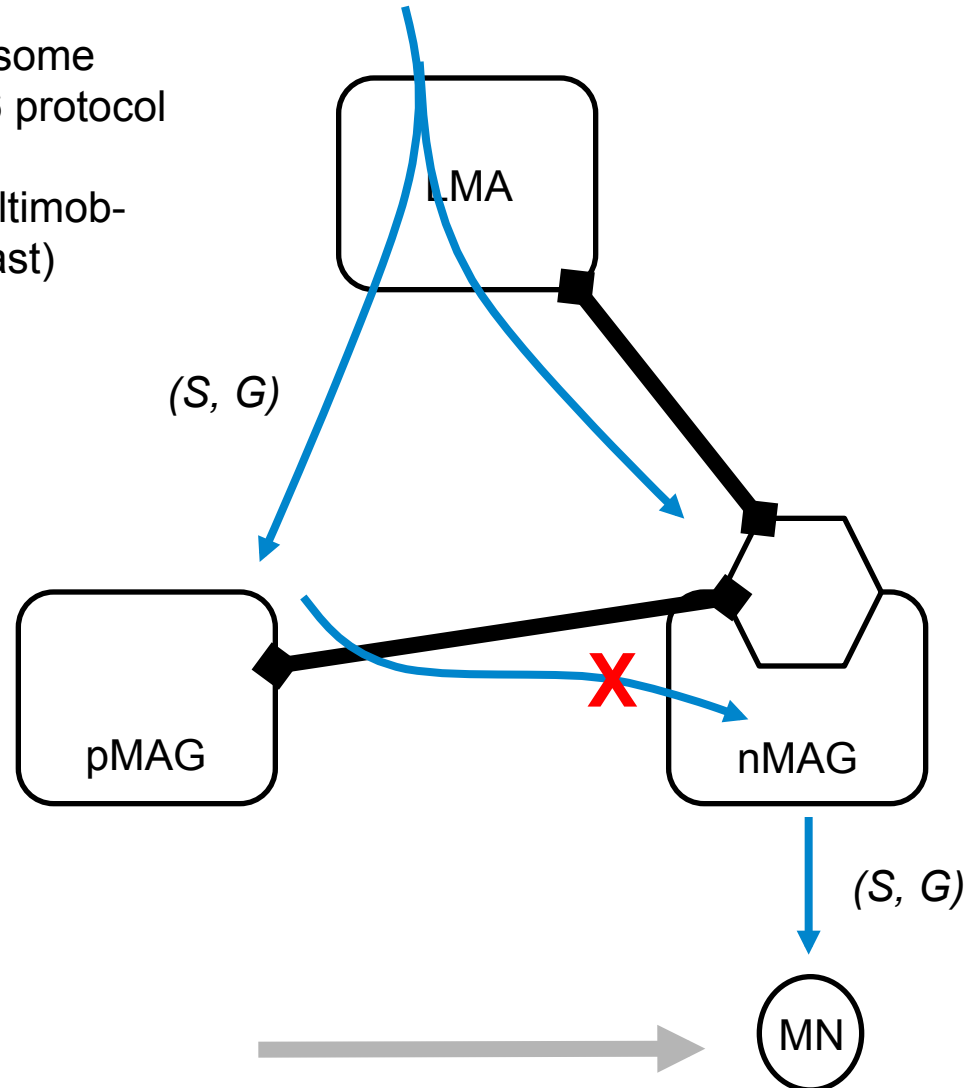
Remote and local multicast subscription



Listener mobility

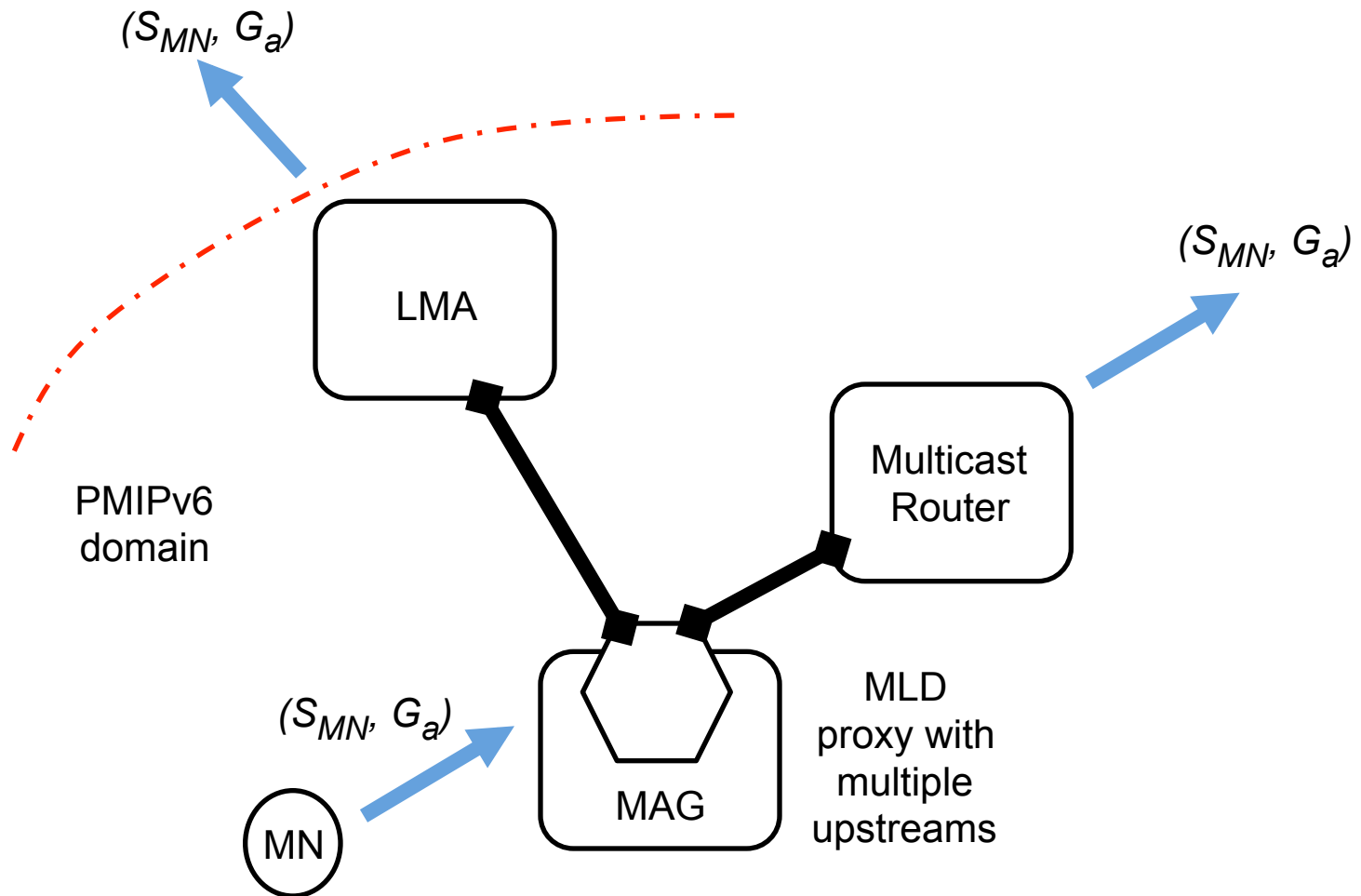
Dual subscription to multicast groups during handover

Handover assisted by some adaptation of FPMIPv6 protocol for multicast traffic (e.g., draft-schmidt-multimob-fmipv6-pfmipv6-multicast)



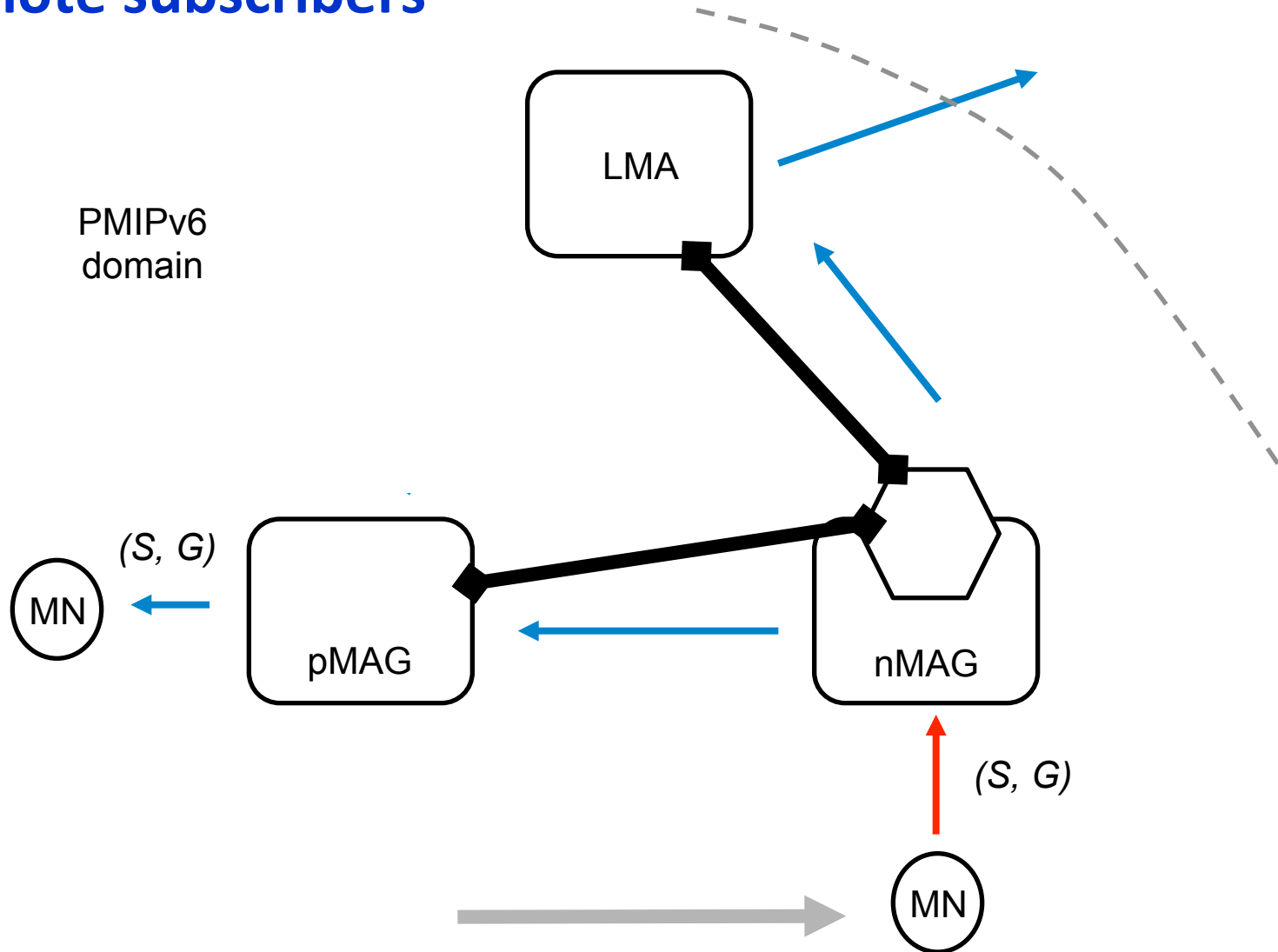
Source mobility

Support of remote and direct subscription in basic source mobility



Source mobility

Route optimization support in source mobility for remote subscribers



Source mobility

Direct communication between source and listener associated with distinct LMAs but on the same MAG

