Comparison of Multicast Mobility Route Optimization

draft-von-hugo-multimob-ro-compa-00.txt

AMT-approach (WG MBONED) and proposed drafts within WG MultiMob

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Requirements and charter demand

- Issues in requirements draft deng-multimob-pmip6-requirements-03
  - Conservation of (radio and backhaul) network resources
    - E.g. in terms of tunnel convergence, direct (local) routing option, dedicated multicast LMA option, …
- Set of 'agreed on' requirements to design/evaluate proposed approaches for extensions/modification
  - Multimob base protocol(s)

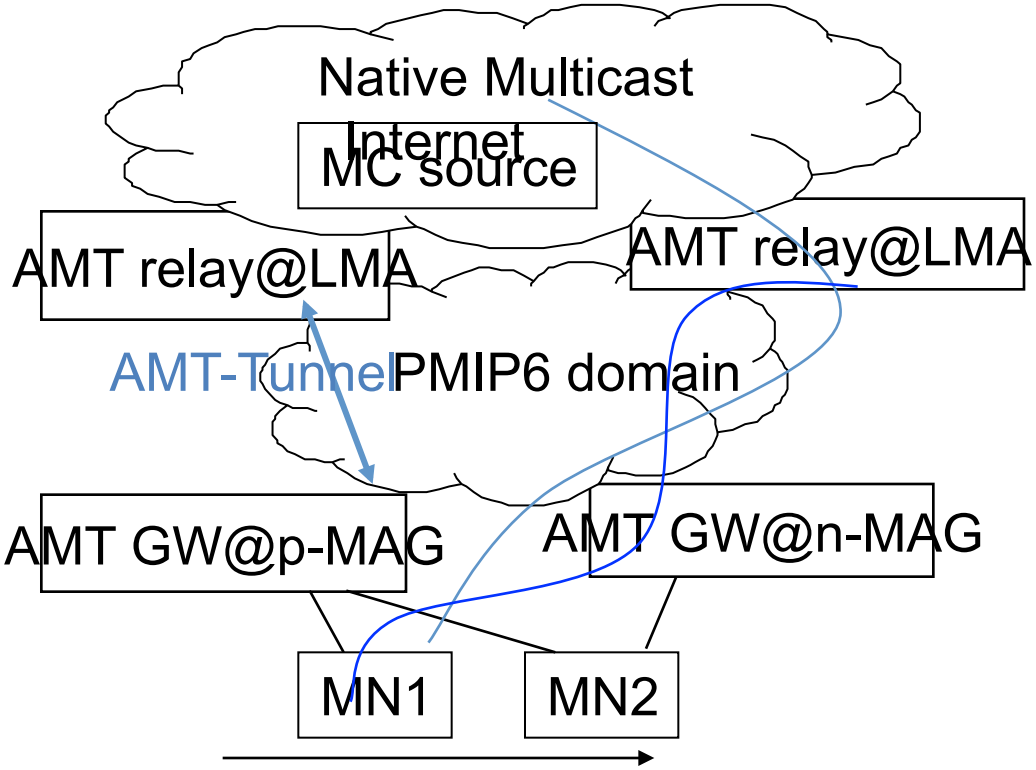
    Adaption of PMIPv6 as referred to in Multimob base protocol
  - IGMP/MLD extension (after completion of MLD parameter tuning)
- Updated Charter demands
  - Jun 2011 - Initial version of document on PMIPv6 routing optimizations to avoid tunnel convergence problem

optimizations

- Is there already an existing protocol (proposal)?
  - E.g. WG MBONED approach AMT
- If not which approach would solve the problem best?
  - Comparison of drafts
    - I-D.asaeda-multimob-pmip6-extension
    - I-D.sijeon-multimob-mms-pmip6
    - I-D.zuniga-multimob-smspmip

AddressingPMIPv6 routing optimizations to avoid tunnel convergence problem

- I-D.ietf-mboned-auto-multicast AMT approach of WG MBONED (Multicast Backbone Deployment) applied to PMIPv6



to avoid tunnel convergence problem

to a network without native multicast support - without need for any

– Adaptation of this scheme to PMIPv6 domains means additional interface and tunnel beside existing MAG-LMA relation

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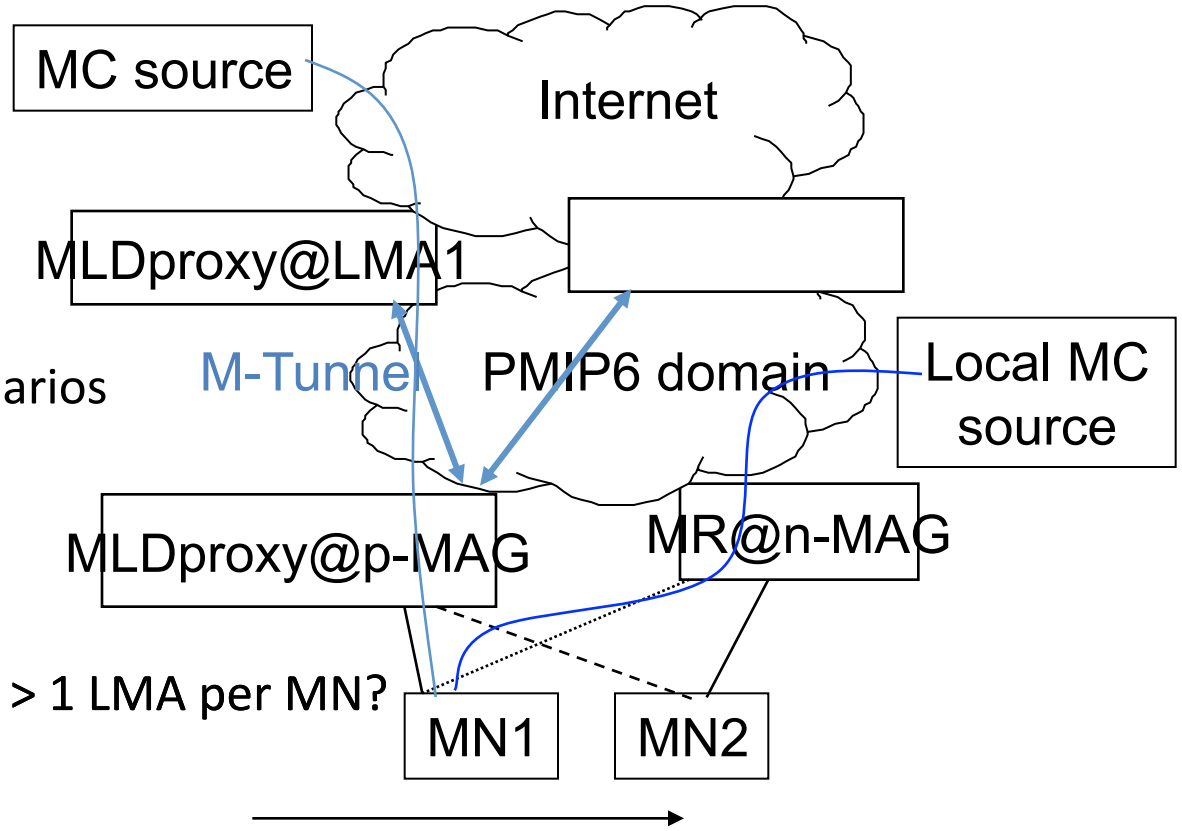
to avoid tunnel convergence problem

(dynamic or static) establishment of a common dedicated multicast tunnel. Both MAG and LMA may be operated as MLD proxy or multicast router.

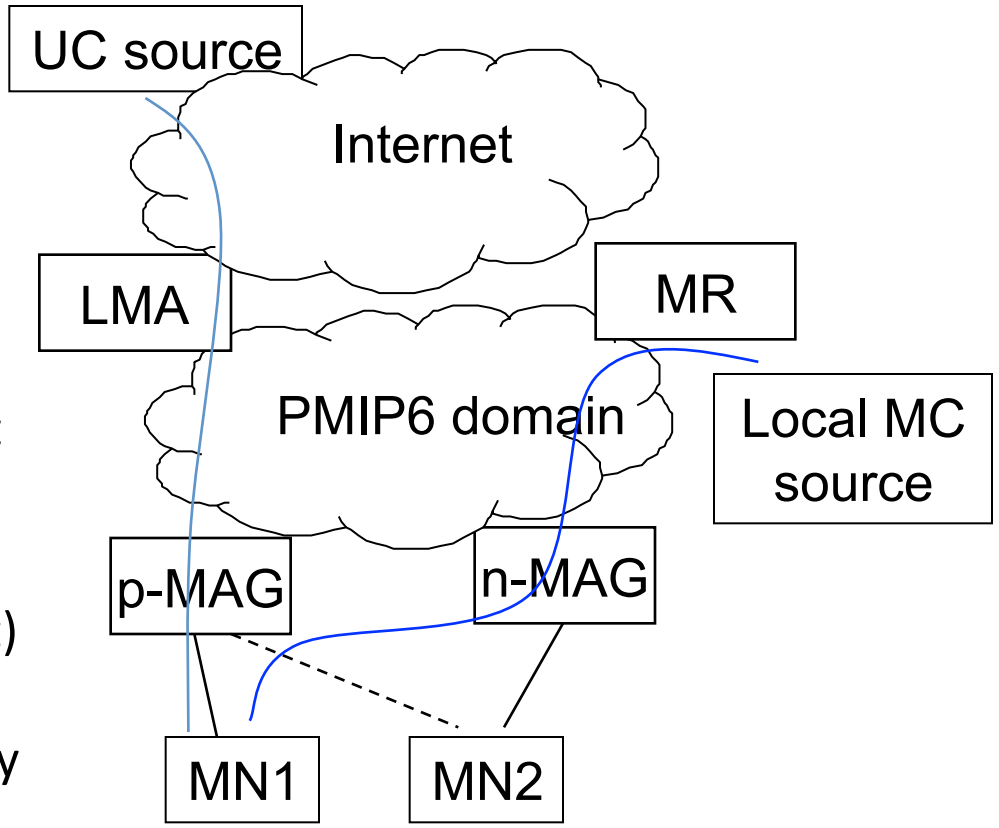
3 different scenarios



- Open question: > 1 LMA per MN?

pmip6 describes a direct or local routing approach applicable to a network topology where multicast content delivery source is located in the same network such that the optimal multicast service delivery path is not via LMA.

- Support of optimal local (direct) routing uses a direct connection between MLD proxy at MAG and a Multicast router separated from LMA.



also a Hybrid U/M one) as topological anchor point for multicast traffic.

- Protocol complexity is reduced in terms of time consuming tunnel set-up by definition of pre- or post-configured tunnels between LMA and MAG.

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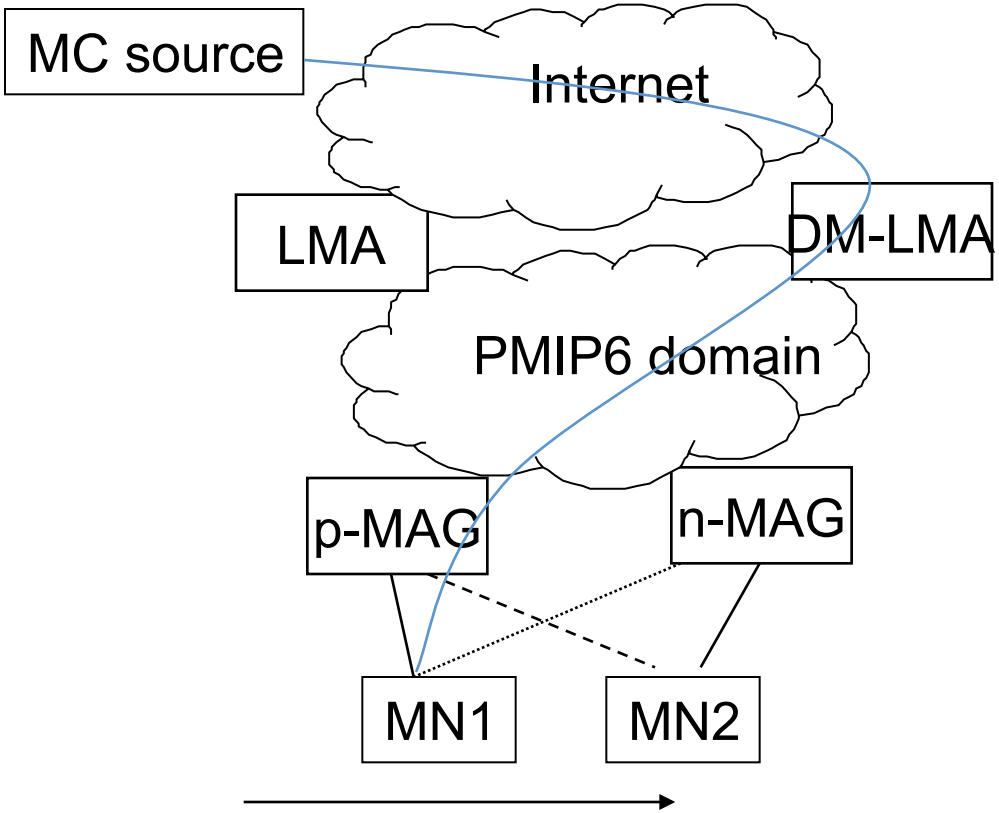

Comparison of proposed approaches

proposal	feature	solution	MLD/MR	extensions	scalability
pmip6-extension	M-tunnel	Yes	MAG	CXTP	management
multimob-mms-pmip6	routing via MR@MAG	No	of LMA	no	applicable to locally available MC content
multimob-smspmip	M-LMA/ M-LMA	Yes	Both at LMA/ MLD@MAG	profile, … profile, …	?
multicast multicast	Relay/Relay Relation	No	no	No	Yes