

# Multimob BoF

## IETF-75

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## Multimob Problem

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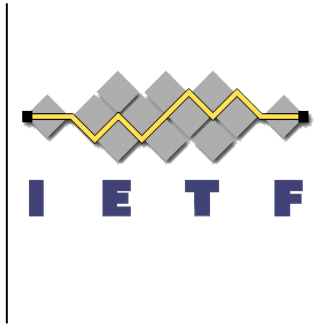
# Multimob

## Multicast Mobility

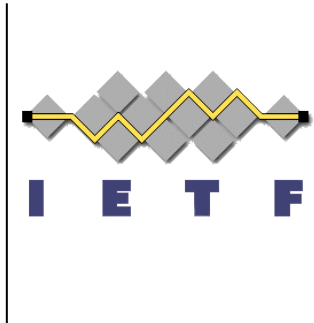


- Mailing list information at <https://www1.ietf.org/mailman/listinfo/multimob>
- PMIPv6 [RFC 5213] does not explicitly support multicast
- Work aims to develop protocol extensions and provide guidance for supporting IPv6 (and also IPv4) multicast in a mobile environment.
- Thanks to Thomas, Matthias & Gorry for the problem statement: draft draft-irtf-mobopts-mmcastv6-ps

# Charter Proposal

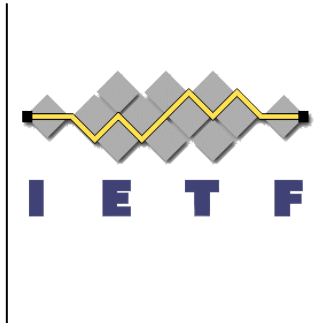


- The proposed charter is at:
  - <http://www.arkko.com/ietf/ietf-75/multimob/agenda.txt>
- Two stage approach:
  - No protocol extensions & assume unmodified hosts
  - Protocol extensions, but still assume unmodified hosts
- Two main milestone items:
  - Proxy Mobile IPv6 Multicast Support
  - Group management protocol (MLD/ IGMP) extensions



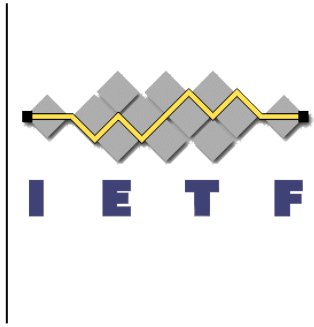
# Supporting multicast

- MIPv6/DSMIPv6 have two kinds of support:
  - Local subscription
  - Remote subscription
- Remote subscription is where an MN subscribes to multicast groups remotely at the HA
- Advantage: hides MN mobility from source
- **Problem 1: Avalanche**
  - HA tunnels multicast data to MN, HA duplicates data for each member MN, HA-FA or HA-AR tunnel receives avalanche of duplicate data packets



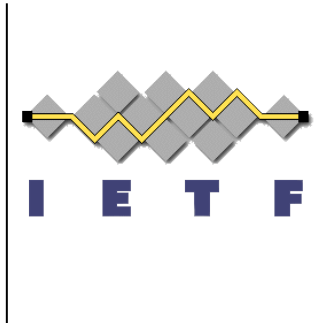
# Supporting multicast

- **Problem 2:** Handover
  - Potential loss on multicast data because MN has to subscribe multicast group with new CoA
  - Local Subscription is where an MN subscribes to multicast groups locally at the local AR
- **Problem 3:** MIPv6 enables local subscription and nothing more
- **Problem 4:** For MIPv6, local subscription is out of scope



# Supporting multicast

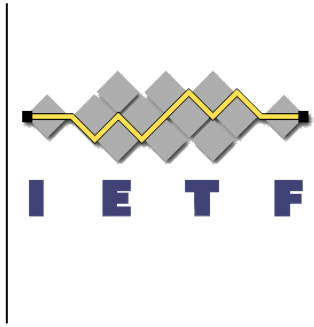
- For Multimob local subscription/local multicast support is important because local subscription offers an efficient way to provide multicast support to MN
- Arch. 1 Local multicast support, i.e. multicast router in AR
  - Multicast Router at the MAG. Multimob may work on fast handover support



# Supporting multicast

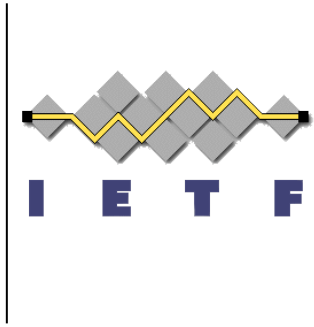
- Arch. 2 Local multicast support, i.e. IGMP/MLD proxy is widely available in ARs, especially in wired networks
- Why not exploit merge this into mobility protocol architecture with LMA or HA?
  - MR at the LMA or HA case
  - Most optimal architecture
  - Avalanche problem can be solved
  - Multicast handover can be optimized

# Group Management Protocol Extensions



- IGMP/MLD [RFC 3376] & [RFC 3810] did not consider wireless networks and mobility
  - **Problem 1:** IGMP/MLD generates periodic reports that may disturb dormant MN
  - **Problem 2:** IGMP/MLD join/leave takes time for MN
- Proposed work
  - Tune MLD for mobility
  - Define IGMP/MLD extensions for multicast mobility
  - Backward compatibility with current implementations will be assured





Thank you