# Simplified Multicast Forwarding (SMF) Update 

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## Outline

- SMF Goal Review
- Document Update
- SMF Node Architecture
- Some initial results with different relay set selection algorithms and mobility
- Next steps


## SMF Goal Review

- Provide a basic multicast packet forwarding function
- Simple baseline (all nodes receive)
- Target native IP multi-hop forwarding
- Both IPv4 and IPv6 design
- Support dynamic, optimized relay set algorithms (e.g., MPRs, CDS variant)
- Experience with MPR-variants. Other CDS algorithms of interest being considered
- Internet connectivity and interoperability
- Support potential mix of "neighborhood aware" and "unaware" SMF nodes?
- "draft-ietf-manet-smf-01" was submitted since the last IETF.


## Summary of Changes

- Document restructured to reflect a modular SMF framework:
- Components: Forwarding process, Efficient relay set selection, Neighborhood Discovery
- E.g., SMF forwarding might be done in context/presence of different protocols (OLSR, DYMO, MANET-OSPF) providing organic neighborhood discovery and/or relay set selection.
- Also, portions of SMF framework might be useful to other protocols (Autoconf or even routing protocols)
- Addressed comments from mailing list
- Incorporated some of "SMURF" (draft-perkins-manet-smurf00.txt) concepts
- More to be done here if these documents are to be merged.
- Defined IPv6 Duplicate Packet Detection (DPD) hop-by-hop header option
- Document expanded to include "Gateway Considerations" section
- More input and thoughts needed here


## SMF Node Architecture



## Flooding Algorithms

P R O T E A N

- Classical (simple) - All nodes forward
- NS-MPR - All MPR nodes forward all LSs
- S-MPR - Standard OLSR forwarding online pruning
- MPR-CDS - offline pruning of MPR nodes
- MDR (ecds) - Shared tree; All MDR nodes forward
- Cluster - Global knowledge CDS






## Next Steps

- Define baseline neighborhood discovery mechanism (e.g. SMURF) and enumerate requirements specific to different relay set algorithms (and identify the proper "home" for this mechanism and it message formats)
- More exhaustive simulations of relay set algorithms \& SMF in progress.
- Better address potential for mix of "aware" and "unaware" forwarding nodes
- Continue to explore and solicit input for "Gateway Considerations"
- Enumerate primitives for inputs/outputs (notional API) between the different SMF functional modules so that compatible implementations might be instantiated.

