

# RADIUS & Diameter MIP4 Application Impacts on MIPv4 Session Setup

draft-muhanna-diameter-mip4-performance-00.txt

## MIP4 WG, IETF 69

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# Overview

- Background
- RADIUS Impact on MIPv4 Session Setup
- Diameter MIPv4 Application Impact on MIPv4 Session Setup
- Conclusion
- Next Steps and Recommendations

# Background

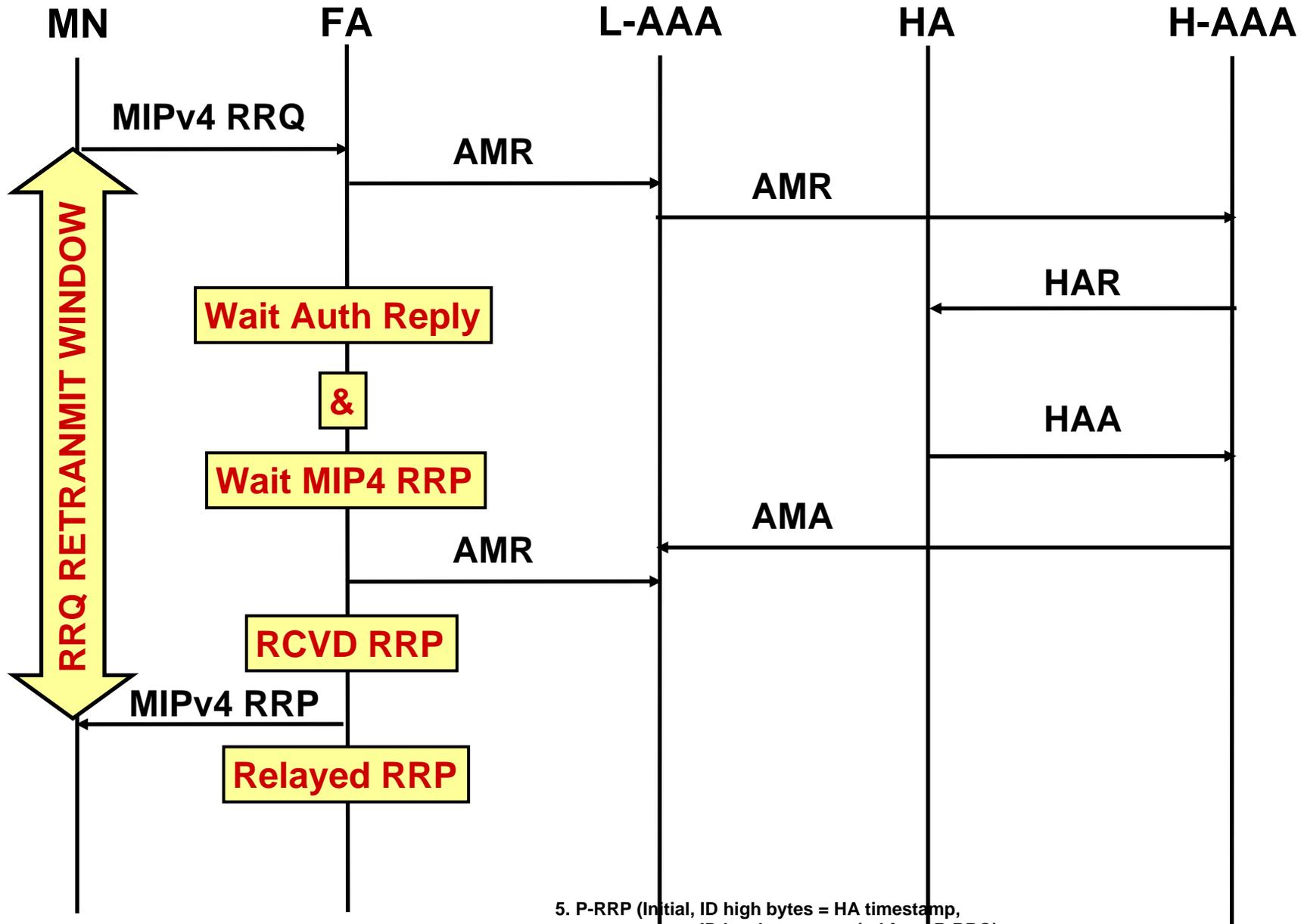
- RFC3344 mandates MN to NOT retransmit initial MIPv4 RRQ before 1 sec.
- In wireless access, Many MIPv4 Clients sets the 1<sup>st</sup> RRQ retransmit timer to 1 sec.
- Diameter MIP4 Appl uses AAA to Authorize & Authenticate MIPv4 users; Also exchange MIPv4 RRQ/RRP between FA & HA.
- RADIUS-like Model Uses AAA to Authorize, Auth. MIPv4 users. Initial MIPv4 RRQ/RRP are exchanged directly between FA and HA



# RADIUS Impact on MIPv4 Session Setup

- In RADIUS-model, AAA infrastructure is limited to Authenticating and Authorization of MIPv4 user.
- AAA infrastructure is never used to deliver or exchange MIPv4 RRQ/RRP between FA and HA.
- If the MN retransmits the initial MIPv4 RRQ at any time other than when the FA-waiting-for-AAA response, there is NO need for the FA to communicate with AAA infrastructure.

# Initial MIPv4 Registration- Diameter Appl.



5. P-RRP (Initial, ID high bytes = HA timestamp, ID low bytes = copied from P-RRQ)

# Diameter MIPv4 Application Impact on MIPv4 Session Setup

- In Diameter MIPv4 Application model, AAA infrastructure is used to Auth. and Authorization of MIPv4 user and the delivery /exchange of MIPv4 RRQ/RRP between FA and HA.
- At any time, MN retransmits MIPv4 initial RRQ, FA MUST repeat the same initial Authorization & Auth. process through the AAA infrastructure.
- If network condition, especially AAA infrastructure load, causes delay to the delivery of the initial MIPv4 RRP to FA, Diameter MIPv4 Appl. model will worsen the network condition NOT helping it.

# Conclusion

- In 4G architecture, Diameter protocol is needed for enabling MIPv4 Authentication, Authorization, and dynamic allocation and delivery MSA.
- Diameter MIPv4 Application has the potential to cause network performance issues in comparison to the current RADIUS model.
- A RADIUS-like mode of Diameter MIPv4 Application which could be specific for wireless network is needed to avoid potential performance issues.

# Next Steps & Recommendation

- Do we agree that this is an issue worth further investigation?
- IF YES, can this draft be used as a base for a problem statement document?