

Mobile IP Working Group

Internet Draft

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**Conformity Statement of Mobile IPv6 Hierarchical Paging to [RFC 3154](#)
draft-sarikaya-seamoby-confmipv6hp-00.txt**

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Abstract

This document states the conformity of Mobile IPv6 Hierarchical Paging (MIPv6HP) protocol I-D to [RFC 3154](#) on Requirements and Functional Architecture for an IP Host Alerting Protocol. It is stated to which clauses MIPv6HP fully conforms and to which clauses close to full conformance is claimed. The clauses of [RFC 3154](#) to which MIPv6HP does not conform are clarified.

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1. Introduction

[RFC 3154](#) [1] states the requirements and attempts to define a functional architecture for an IP Host Alerting Protocol. The authors of this I-D have submitted an I-D, The Mobile IPv6 Hierarchical Paging protocol (MIPv6HP) [2] which defines an IP host alerting protocol. In this draft we discuss the clauses where MIPv6HP conforms to [1] and where the conformity can easily be achieved. Also this I-D states where the conformity to [1] was not claimed.

2. Terms

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC-2119](#) [3].

Please see [4] for definition of terms used in describing paging. In addition, [2] defined several terms.

3. Where full conformity is claimed

The clauses on security, in particular clauses in [Section 3.1](#), 3.2 and 3.3.

4.1 on power consumption by relying on L2 paging where available the need to establish L3 connection is eliminated.

4.3 on control of Broadcast/Multicast/Anycast. MIPv6HP additionally has provisions to support more dormant mode options.

4.5 on no mobile routers.

4.8 on support for mobility protocols. MIPv6HP supports MIPv6. It is integrated into MIPv6.

4.9 on dormant mode termination.

4.10 on network updates. MIPv6HP efficiently supports the moving of the dormant hosts in paging areas. This is clearly explained in [Section 3.1.1](#) of [2].

4.11 on Efficient Utilization of L2. MIPv6HP makes maximum use of L2 dormant mode support if available.

4.12 on Orthogonality of Paging Area and Subnets and 4.13 on future L3 paging support. MIPv6HP allows both Layer 3 and Layer 2 paging areas. It defines protocol operation distinctively under L3 paging areas or under L2 paging areas to be used based on availability.

4.15 on Reliability of Packet Delivery and 4.16 on Robustness Against Message Loss. MIPv6HP uses IPv6 and ICMPv6 datagrams. Every message has a corresponding reply and this is how reliability and

robustness can be achieved.

4.18 on Flexibility of Paging Area Design. MIPv6HP allows maximum flexibility on the paging areas. The (L2 or L3) paging areas can even be dynamic.

4.19 Availability of Security Support and 4.24 through 4.27 on security. MIPv6HP has the security support as required. [Section 6](#) in [2] gives a detailed explanation of the security support.

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4.20 Through 4.22 on authentication support. [2] uses IPsec which provides the authentication.

4. Where conformity can be easily achieved

Clause 4.6 on multiple dormant modes.

4.2 on scalability. The dormant mode hosts state is only kept at PMAP which plays the role of DMA in the functional architecture of [1].

4.14 on Robustness Against Failure of Network Elements.

4.17 on Flexibility of Administration.

4.23 on Paging Volume. Presently MIPv6HP handles each paging request per host separately. If the volume is high it may help in handling several paging requests together. Future revisions of [2] will conform to this clause fully.

Clauses in [Section 5](#) of [1] on functional architecture. PMAP in our protocol plays the role of DMA. It captures the packets for hosts in dormant mode upon registration. We have opted for colocating TA with DMA or PMAP, as is allowed.

5. Where no conformity is claimed

Clause 4.4 on inactive mode. This mode is not supported.

Clause 4.7 on the independence of mobility protocol. MIPv6HP is based on an extension of Mobile IPv6.

6. References

- 1 Kempf, J., et al. "Requirements and Functional Architecture for an IP Host Alerting Protocol", [RFC 3154](#), August 2001.
- 2 Sarikaya, B., Xu, X., Choyi, V., Krywaniuk, A., Castelluccia, C., "Mobile IPv6 Hierarchical Paging", [draft-sarikaya-seamoby-mipv6hp-01.txt](#), September 2001, work-in-progress.
- 3 Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997

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