ABSTRACT:

This paper extends our work in developing network intelligence via agents for improved mobile Quality of Service in next generation wireless networks. A test bed architecture of our protocol, called AMP, has been built to facilitate and expedite location and handover management over IPv6 networks. AMP comprises a collaborative multi-agent system residing in the mobile node and access networks. The core IP network has remained untouched to simplify design and operations. AMP's performance was evaluated against the IETF's standard Mobile IPv6 protocol in support of roaming mobile nodes. Results from analyses indicate that AMP outperformed Mobile IP with lower signaling cost, latency and packet loss. Our work shows that with AMP, an improved IP-based mobility support may be achieved through added intelligence without increased complexity in the core network. Furthermore, results suggest that AMP may be more suited for micro-mobility and may serve as a viable and promising alternative to Mobile IPv6 in facilitating Internet-based host mobility in next generation wireless networks.