

Security issues and modified version of PKM protocol in non-transparent multihop relay in IEEE 802.16j networks

Abstract

IEEE 802.16j mobile Multihop relay (MMR) standard allow for fixed, nomadic and mobile relays. MMR networks is known to have potency of easy installation and opportune management because of its lower infrastructure cost and high data transfer rates compared to existing 3G. Due to lack of physical boundaries and injection of distributed, non-transparent relays, it is also known to be more vulnerable to security problems. In this paper, we first overview the security parameters of the standard, then discussed the security issues of IEEE 802.16j, threats and vulnerabilities on PKM protocols and our modified versions of PKM that support relays infrastructure. The propose version uses decode and forward scheme with distributed and localized authentication. We suggest possible solutions and verify them by using formal (BAN) logic.