# ABSTRACT

Internet access technology enters a new phase due to the rapid developments of wireless internet access, especially hotspots. Within this area, users can create connection and stay connected to the internet using hardware which supports wireless access from their devices. This popular service is also supported by various researchs over their process, including authentication process, which creates protocols such as EAP and authentication server like RADIUS.

Even then, the rapid development over protocol technology is balanced by attacker's skill and advancement of their software support to break over the protocol designed to protect connected user.

M*an-in-the-middle* attack is one of the methods chosen to break over protocol. This attack consists of several attacking process, but ultimately attacker will be able to personificate the authenticator (access point). The robustness of EAP-MD5 based authentication system on wireless network will be tested using formal methods and BAN Logic to prove whether the attack could find its way around this protocol or not.

Keywords : EAP , BAN Logic ,  RADIUS , Man-in-the-Middle , Formal Methods.