ABSTRACT

Data transmission from the tower ATC to the aircraft that will take off or will land often experience distraction in the form LOSS or packet of data sent are not 100% accepted by the receiver, this is because the data packets are lost, which leads to the need of making the required data transmission reliable enough to reduce the distraction. Constructing data transmission using fiber optic cable with PON (Passive Optical Network) architecture can reduce packet Loss that occurs during data transmission. Modeling on-board optical network architecture based on the best pound using optisystem simulator can provide an overview of a number of packet Loss that occurs during data transmission using fiber optic cable. In this test, 25.93 Db packet LOSS with $2.9x10^{-7}$ Db BER value is obtained, proving that this architecture can be used to create optical networks on-board on the aircraft.

Keywords: PON (*Passive Optical Network)*, *Noise*, fiber optik, *LOSS,ATC*