ABSTRACT

Collision event during data reading process on RFID is caused by stacking RFID tag data reading at the same time, this situation creates wasting bandwidth and increases delay. This collision situation has negative distraction on data reading processes. RFID services is being implemented at Tokong Nanas building by Telkom University. This building has the most numbers of floors and classes compare to others buildings in Telkom University which creates the situation where the data traffic jam is even worse.

Current problem in Tokong Nanas building is the long waiting time during identification data and collision event when tapping during data traffic jam. In order to avoid collision event, RFID reader has to use anti-collision protocol so that arrange the reading and writing data on RFID tag. Parameter delay analysis on RFID network using power of two method which refers to the power of two algorithm is necessary to reduce the waiting time during identification data and to avoid the possibility of collision event.

Based on the analysis power of two as its starting point on the collision peak from KU3.02 to KU3.09, resulting 126 collision data processing. Based on test improvement on the system task using delay comparing on the Slotted ALOHA, resulting 48 ms while using power of two delay algorithm resulting 0,1 ms. The conclusion from above schemes is that there is 99,70% improvement in term of delay on the RFID network in this building.

Keywords : *Delay, Anti-Collision, power of two, tapping, RFID.*