

ABSTRAK

Seiring perkembangan jaringan komputer saat ini, mulai bergeser dari pengembangan jaringan berkabel ke jaringan nirkabel (*wireless*). Perkembangan ini merupakan tuntutan dari kebutuhan masyarakat akan akses informasi dan data secara cepat dan bisa diakses kapan saja dan di mana saja. Salah satu model pengembangan dari jaringan nirkabel adalah tipe jaringan *ad hoc*. Salah satu contoh jaringan *ad hoc* yang mengalami perkembangan sangat pesat akhir-akhir ini adalah *Wireless Personal Area Network* (WPAN).

Routing protocol untuk jaringan *ad hoc* (WPAN) tentunya berbeda dengan *routing protocol* yang diimplementasikan pada jaringan kabel. Hal ini dikarenakan sifat WPAN yang dinamis, sehingga memiliki topologi yang berubah-ubah, berbeda dengan jaringan kabel yang cenderung tetap. Jaringan WPAN memiliki dua jenis *routing protocol* yaitu, *reactive routing protocol* dan *proactive routing protocol*.

Penelitian ini bersifat simulasi dan selanjutnya menganalisis *reactive routing protocol Temporally Ordered Routing Algorithm* (TORA) dan *Dynamic Source Routing* (DSR). Kinerja jaringan yang diukur adalah rata-rata *throughput*, *delay*, *jitter*, *packet delivery ratio*, *packet loss*, dan *routing overhead* pada skenario yang berbeda berdasarkan penambahan jumlah *node* dan jumlah koneksi. Simulasi dilakukan menggunakan *simulator* jaringan *Network Simulator-3* (NS-3).

Hasil penelitian menunjukkan bahwa *routing protocol* DSR lebih baik berdasarkan parameter jaringan *throughput*, *delay*, *jitter*, *packet delivery ratio*, *packet loss*, dan *routing overhead* dibandingkan TORA untuk semua skenario dengan penambahan jumlah *node* dan jumlah koneksi..

Kata Kunci: WPAN, TORA, DSR, NS-3, *reactive routing protocol*.

ABSTRACT

As the development of the current computer network, began to shift from wired network development to the wireless network (wireless). This development is demands of the necessities of people are going to access information and data quickly and can be accessed anytime and anywhere. One model of development of wireless networks is a type of tissue ad hoc. One example of ad hoc networks are experiencing rapid growth these days is a Wireless Personal Area Network (WPAN). The Routing protocol for ad hoc networks (WPAN) is certainly different from the routing protocol that is implemented on a wired network. This is due to the dynamic nature of WPAN, so have the alternating topology, in contrast to the appropriate cable network anyway. WPAN network has two types of routing protocol routing protocol which is reactive and proactive routing protocol.

This research is simulated and further analyze the reactive routing protocol Temporally Ordered Routing Algorithm (TORA) and Dynamic Source Routing (DSR). Network performance measured is the average throughput, delay, jitter, packet delivery ratio, packet loss, and routing overhead in different scenarios based on the addition of the number of nodes and the number of connections. The simulation is done using the silulator network Network Simulator (NS-3). The results showed that the routing protocol DSR better based on the parameters of the network throughput, delay, jitter, packet delivery ratio, packet loss, and routing overhead than TORA for all scenarios with the addition of the number of nodes and the number of connections..

Keywords: WPAN, TORA, DSR, NS-3, reactive routing protocol.