

INTISARI

Universitas Gadjah Mada menggunakan suatu jaringan *wireless* nirkabel WLAN (*Wireless Local Area Network*) untuk memenuhi kebutuhan terhadap layanan internet diseluruh wilayah kampus. Jaringan *wireless* tersebut yaitu Eduroam. Eduroam adalah layanan roaming internasional yang memberikan layanan internet aman tanpa biaya terhadap pengguna di lingkungan lembaga riset dan perguruan tinggi. Eduroam dapat digunakan ketika pengguna berkunjung ke institusi lain yang bergabung di dalam jaringan eduroam merupakan Capaive Portal Jaringan Nirkabel UGM menggunakan LDAP UGM yang ada di DSSDI yaitu email UGM. Eduroam merupakan SSID resmi dari *access point* di UGM. Dalam penerapannya masih banyak ditemukan kendala seperti daya jangkauan. Penelitian ini bertujuan untuk mengetahui letak persebaran *access point* jaringan *wireless* Eduroam, mengetahui letak *blind spot* dari sinyal *wireless* Eduroam, dan mengetahui kinerja dari jaringan *wireless* Eduroam di wilayah kampus UGM dengan kasus di gedung Departemen Teknik Elektro dan Teknologi Informasi Universitas Gadjah Mada.

Tahapan persiapan dan pengukuran data sinyal *coverage access point* di lapangan, pengolahan data lapangan serta analisis. Penelitian ini diawali dengan pengumpulan data berupa peta gedung dan jumlah *access point* yang telah terpasang. Setelah data itu diperoleh dilakukan *site survey* untuk mengetahui letak dan persebaran *access point*. Dari hasil survei tersebut dapat diketahui pula letak *blind spots* sinyal *wireless* tersebut. Kemudian dilakukan pengujian berupa *throughput test* terhadap area/zona yang berada pada area *blind spot* dan area/zona yang dinilai memiliki kualitas sinyal yang cukup baik.

Hasil dari penelitian menunjukan: (1) Jumlah *access point* jaringan *wireless* Eduroam di wilayah gedung Departemen Teknik Elektro dan Teknologi Informasi Universitas Gadjah Mada sebanyak 11 *access point* yang tersebar di tiga lantai yaitu 3 *access point* di lantai 1, 1 *access point* di lantai 2, dan 6 *access point* di lantai 3. (2) Di beberapa titik pada daerah penelitian masih ditemukan area yang belum mendapatkan sinyal yang cukup dari jaringan *wireless* Eduroam. (3) Kinerja jaringan *wireless* Eduroam di wilayah Departemen Teknik Elektro dan Teknologi Informasi UGM belum cukup memenuhi kebutuhan yang ada dikarenakan masih adanya wilayah yang belum memperoleh layanan internet yang disediakan oleh jaringan *wireless* Eduroam.

Kata kunci: Eduroam, Coverage, Access Point, WLAN, Throughput

ABSTRACT

Gadjah Mada University uses a wireless local area network (WLAN) to meet the needs of internet services in all campus areas. The wireless network called Eduroam. Eduroam is an international roaming service that provides secure internet services at no cost to users in research institutions and universities. Eduroam can be used when users visit other institutions that join the eduroam network. Capaive UGM Wireless Network Portal uses UGM LDAP in DSSDI, namely UGM email. Eduroam is the official SSID of the access point at UGM. In its application there are still many obstacles encountered such as coverage. This study aims to determine the location of the Eduroam wireless network access point distribution, determine the location of the blind spot of the Eduroam wireless signal, and determine the performance of the Eduroam wireless network in the UGM campus area with a case in the Department of Electrical Engineering and Information Technology at Gadjah Mada University.

Stages of preparation and measurement of coverage access point signal data in the field, field data processing and analysis. This research begins with data collection in the form of a map of the building and the number of access points that have been installed. After the data is obtained a site survey is carried out to determine the location and distribution of access points. From the survey results it can also be seen the location of the wireless signal blind spot. Then the test is carried out in the form of a throughput test on the area / zone that is in the blind spot area and the area / zone that is considered to have a fairly good signal quality.

The results of the study aimed at:(1) The number of Eduroam wireless network access points in the area of the Department of Electrical Engineering and Information Technology University of Gadjah Mada University has an 11 access points spread over three floors, 3 access points on the 1st floor, 1 access point on the 2nd floor, and 6 access points on the 3rd floor. (2)In several points in the study area, there were still areas that did not get enough signals from Eduroam's wireless network. (3)The performance of the Eduroam wireless network in the area of the Department of Electrical Engineering and Information Technology UGM has not been sufficient to meet the existing needs because there are still areas that have not yet received internet services provided by the Eduroam wireless network.

Keywords : Eduroam, Coverage, Access Point, WLAN, Throughput