EVALUATION OF ADAPTIVE RESOURCE ALLOCATION (ARA) IN CHANNEL RAIN FADEING COMPARED WITH SIMPLE RESOURCE ALLOCATION (SRA) AND RANDOM RESOURCE ALLOCATION (RRA)

Student Name: Farid Baskoro
NRP: 2209203005
Supervisor: Prof. Dr. Ir. Gamantyo Hendrantoro, M. Eng
Ir. Endroyono, DEA

ABSTRAK

Next-generation wireless systems are expected to provide multimedia communications via channel data high data rate on any condition. The main challenges faced is the problem of maximizing the existing channel allocation for the benefit of users in terms of scheduling the package to be delivered. One form of broadband service is a millimeter wave communication systems. This communication system using a frequency above 10 GHz that are vulnerable to the effects of rain attenuation, which Indonesia is a tropical region that has a high rainfall. The presence of rain attenuation can disrupt the reliability of communication systems in millimeter-wave channel. Therefore it is necessary for cross-layer optimization by applying the techniques of existing allocation of channel capacity, for wireless system performance can be improved. In this study, will evaluate the existing allocation of channel capacity on the condition of clear sky and rainy conditions with the method of ARA, RRA, and SRA.

By considering the channel condition and traffic intensity is raised. To find the model that generated traffic and traffic generation results of the validation checks that will be allocated by the resource allocator then used ARIMA modeling simulation of channel capacity allocation is performed. Retrieved channel capacity allocation method is best with the ARA method, from the SRA or the RRA method, because this method in terms of allocating channel capacity available to users not only see the maximum traffic intensity that can be allocated but also see the condition of the canal, so that the ARA method produced a maximum allocation of channel capacity that can be allocated to the user. The results obtained by the ARA method to allocate resource allocator for 20.51Mbps, SRA 17.18 Mbps and RRA allocated at 13.93 Mbps

Key words: channel capacity, method of ARA, SRA and RRA, ARIMA modeling, rain attenuation.