

## **ABSTRACT**

OSPF is one of the biggest routing protocol in the world. But OSPF keeps a problem, that is convergence time delay cause by shortest path first (SPF) calculation that cannot ensure to fulfill IEEE ITU-T standard number G.114 about voice delay (<150ms). So, in case failover path, voice experience quality degradation, research performed toward OSPF to examine and measure convergence time delay caused by Djikstra Algorithm in 24 different topology due to cisco system,inc recommendation , then change Djikstra Algorithm with 4 new Algorithm, named Unifrom Cost Search (UCS), Energy Aware Rounting (EAR), esacon, and labeling in the same topology (24 topology), then compare the results, research performed using Cisco 1841XM, 2811XM,and 2950-24TT. Additional parameter such as CPU utilization and throughput measured too, to se effect caused by Algorithm change toward other parameter. The result, UCS become the Algorithm with smallest SPF converegence time delay (80%) compared with djikstra and the other algorithm in this research without degrade cpu utilization and throughput quality.

Keyword :

OSPF, SPF, UCS, EAR,Labeling, Esacon, Delay, cpu utilization, throughput