**Abstract** 

Development of current technology provides multimedia quality service in more

intelligent and flexibility way. For this matter, MPLS is considered suitable as

network technology based on its capabilities and utilizing SIP as communication

signalling which can be implemented on MPLS network. To optimize SIP

integration over MPLS, traffic aggregation (TA) technique is proposed. TA act for

each SIP local network. Furthermore, on TA attached FCFS-SAB algorithms to

authorize call by User Agent. For this purpose Network Simulator 2 (NS-2) is

used as network simulator. NS-2 possesses necessary modules, because of this

simulation of topology plan can be made. From simulation result showed that with

FCFS-SAB algorithm level of bandwidth efficiency follows the value of

bandwidth contract that is being used.

**Keywords**: MPLS, SIP, traffic aggregation, FCFS-SAB, NS-2.

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