

An Improved Network Topology Acquisition process in IEEE 802.16j non-transparent mode relay networks*

D. Satish Kumar[†]

*Kalaignar Karunanidhi Institute of Technology
Coimbatore 641402
Tamilnadu
India*

N. Nagarajan[§]

*Coimbatore Institute of Engineering and Technology
Coimbatore 641109
Tamilnadu
India*

Abstract

An Improved Network Topology Acquisition process for IEEE 802.16j non transparent mode relay networks is presented in this paper. We have implemented this algorithm in NCTUns open source network simulator. In this algorithm the process of setting channel ID for mobile stations, and time taken to accept a new mobile station are mainly focused. The mobile stations which are in the coverage area of base station are given first preference, and those outside coverage area are assigned channel ID through relay stations. Two ID's are set for each mobile station: Basic channel ID [1, 2, 3....] and Primary Channel ID [256, 257, 258...]. Mobile stations are first accepted by base stations, to allocate band width. We have studied the time taken to accept mobile stations. The results show that, base station takes 0.0096613 sec to accept one mobile station (inside coverage area) and it takes 0.065001 sec to accept one mobile station (outside coverage area)- through a relay station . Here 0.085308 sec is spend to accept one relay station.

Keywords: *Network Topology, IEEE 802.16j, non-transparent mode, relay station, channel ID, NCTUns etc*