ABSTRACT

The existing state of the network infrastructure in the TULT Building presents various challenges, notably a lack of Human Resources. In terms of dealing with the condition of a network break in a building or on each level of the TULT building, it may slow down the infrastructure team's ability to handle the situation appropriately. The second issue is that the TULT Building has a very closed building concept, which means that all networks are trapped in each room, causing the network to be unstable. Based on an analysis of the network infrastructure's existing condition, this study uses the Network Development Life Cycle (NDLC) method to solve problems systematically. The stages are as follows: analysis, design, and simulated prototyping. The network design infrastructure employed by the Industrial Engineering Faculty at the TULT Building is currently a star topology. It has poor network stability since it depends on the central terminal. The network on each floor will be affected if the switch is disturbed. By implementing a network scheme design in the TULT Building utilizing a hybrid topology, this research creates a blueprint for a network infrastructure design in the TULT Building to make the network stable and easy to manage. This hybrid topology was chosen for use in creating this scheme because it allows the combination of two or more different network topologies, allowing each machine in a network to share data. Another consideration in this scheme's design is using LACP as an alternate route design (redundancy link).

Keywords: Easy Maintenance, Network, Network Development Life Cycle, Topology