

ABSTRACT

The placement of visual monitoring systems using Closed-Circuit Television (CCTV) plays a crucial role in enhancing campus security and the effectiveness of activity monitoring, especially in high-traffic areas and locations housing critical assets. This study focuses on evaluating and designing a visual monitoring system for the Telkom University Landmark Tower (TULT), a central hub for academic and administrative activities. The research employs the Network Development Life Cycle (NDLC) methodology up to the simulation prototyping stage. Initial phases involve a needs analysis and direct observation of existing camera placements, followed by a redesign based on area coverage, and simulation using SketchUp software.

Observations revealed several shortcomings in the existing CCTV system, particularly in classrooms, laboratories, faculty areas, and access points to key rooms such as finance, secretariat, meeting rooms, and the academic services office (LaaK). Visual obstructions like partitions, structural pillars, and suboptimal camera angles resulted in blind spots, potentially compromising security and reducing the effectiveness of visual documentation. To address these issues, two primary strategies were implemented: repositioning existing cameras and adding new units at strategic points. Simulations demonstrated that the proposed placements significantly improved coverage and reduced blind spots, in some cases eliminating them entirely.

The proposed design also considers cost efficiency and ethical privacy standards, especially in faculty workspaces. In conclusion, the NDLC-based approach up to the simulation phase proved effective in producing an optimized visual monitoring system design that meets spatial needs and can serve as a reference for implementing similar systems in campus environments or other institutional buildings with comparable layouts.

Keywords: Visual Monitoring, CCTV, Blind spot, NDLC, SketchUp.