IMPLEMENTATION OF PICTURE STREAMING USING RASPBERRY PI ON MESH NETWORK USING BABEL ROUTING PROTOCOL FOR HIGHWAY MONITORING

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Abstract

In the last decade, the used of Closed-Circuit Television (CCTV) cameras in Indonesia has been increased. CCTV not only used for monitoring situation around to avoid crime event but also used to trace criminal actor. Even the government agencies such as the police have taken advantages of this technology to monitoring highway road.

Applying CCTV is not so easy, because to build CCTV infrastructure like CCTV base station is not cheap. The need of conventional electric pole to supply its power make it difficult to install. Because of that reason, the use of CCTV only in restricted strategic area, so the monitoring become uneven.

This research try to find alternative system like CCTV but with more portable. Using Raspberry Pi as alternative tool it can be the solution. Because Raspberry Pi consume small power so it can developed by utilizing solar panel technology for their power supply. By implementing this device in wireless mesh network will offer a possibility of plug-and-play device for monitoring situation.

Because of its ability Babel routing protocol used for picture distribution in this system. With implementing Babel in embedded system in Raspberry Pi, its consume CPU usage around 1%. That reason make Babel suitable for this system.
From the performance testing of picture streaming in wireless mesh network. We can see that the rate of packets sent is around 93% and the ability to stream picture is around 2 frame-per-second.

Keywords: Picture Streaming, Wireless Mesh Network, Babel routing protocol.