Developing Prototype for Telecommunications Network Information System of PT. Telkom to Determine Optimal Route in Phone Interference Handling Based on Floyd - Warshall Algorithm

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SUMMARY

Nowdays, many providers are emerging in Indonesia so that they lead high competition among telecommunication operators to win over the public. As a state owned company that has authorities on the development of telecommunications sector, especially for cables telephone, PT. TELKOM also realize that, so they strive for a better service to the customers.

This research aims to create a spatial database and interactive telephone network information system model of PT. Telkom by using Quickbird imagery derived from Google Earth, Global Position System (GPS) and Geographical Information Systems (GIS) to determine the optimal route telephone network for error handling based on Floyd-Warshall algorithm. Determination of the optimal route is based on the variable impedance of the travel distance and travel time derived from the length of road divided by the average speed of vehicles per road segment. Subsequent tissue analysis results are integrated with GPS navigation technology to help a network technician search for location of interference and network technicians to assist the movement towards the location of the phone to crash in the field.

The result of the research is optimal routeiInformation system desktop based and stand alone application for Telkom Bantul. This information system is made by combining a visual programming language called Microsoft Visual Basic with ESRI Map Objects 2.2, geographic information system applications developer software. this optimal route program can be acquired by 'Spatial Programming with Floyd-Warshall Algorithm', so it can be applied to determine the optimal route accurately on Telkom Bantul's error handling or at least close to field conditions. It can be proved by field validation results which resulted in accurate optimal route test value based on travel distance of 97.06% and travel time of 96.14%.

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