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# Application Design of Optical Network Defect Tracking based on Location-Based Service (Case Study of PT Telkom Akses STO Kaliabang)

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***Abstract*** **– To maintain good service quality, network maintenance is needed. Device maintenance must be carried out as quickly and accurately if supported by an application device that can find the right location as fast as possible. Maintenance devises related to defective optical network cables, optical distribution point (ODP) panel, and ODC (Optical Distribution Cabinet) panel, to FTM (Fiber Termination Management) room. Through the three existing locations, maintenance technicians often difficulties to find the exact location of the ODC and to find out the status of the ports that are in the ODC. By utilizing features on mobile devices. LBS communicates from two-way interactions and can combine three technologies: Geographic Information System, Internet Service, and Mobile Device**

***Keyword – Optical cable, ODC, ODP, LBS, maintenance***

## INTRODUCTION

In 2018, APJII (*Association of Indonesian Internet Service Providers)* informed the number of internet users in Indonesia is 171.17 million users out of 264.16 million population. As many as 55% are in Java. In Java is further divided into several regions: West Java reaching 16.6%, Central Java at 14.3%, then East Java at 13.5%, followed by Jakarta at 4.7%, and Yogyakarta at 1.5%. About 90% of internet users use smartphones. This creates an opportunity for mobile or cellular application development. Location-based services are one of the most growing services based on mobile techniques which play an important role in many life branches. The number of LBS users for location detection technologies as services and applications increased by 20% within six-months [1].

Many services and applications based on the detection of mobile location are regenerated according to accurate positioning technique with mobile network system including database server[2]. LBS services are zone-based which simultaneously carry out tracking processes in positions user and can provide a proactive warning and can provide a fixed location, specifically identified by name and address. Examples automatic teller machines (ATMs), banks, restaurants, campus, hotels, gas stations, parking areas and so on. Some of them have been applied to the Implementation of Location Based Service in Applications Mobile [3][4][5]

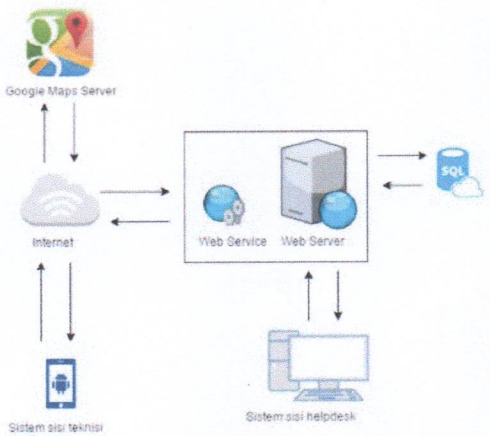


Figure 1.Infrastructure Schema

PT. Telkom Akses STO Bekasi, provides services and handles facilities relating to information technology issues related to network infrastructure. Support by maintenance technicians to carry out repairs related to damaged optical network cables, ODP (*Optical Distribution Point)* panels, ODC (*Optical Distribution Cabinet*) panels, to FTM (*Fiber Termination Management*) central rooms are needed.[6][7] The technician must check the optical network cable that is indicated to be damaged. Checking the optical network cable by looking at where the three devices are located. To find it- base on location based services - services which directly transfers user location information to technician entities, so the technician can fixed it.