

The Study of Establishing an Improved Distribution Asset Management System (DAMS) Using an Open Map Platform

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Main result

This contents of this study are as follows: 1) to analyze/integrate the management requirements of the inspection of power distribution equipment (IPDE) of related business units, 2) to build a web platform of IPDE management system and mobile application with an open architecture, 3) to construct the system structure of the main webpage and mobile map platform of the system. The prototype screen and database of the system are planned to complete the overall operation process. During the execution, the team had discussed the problems encountered through work discussion meetings, to be in line with the system architecture plan of the project (Figure 1).

According to the system planning content, the dispatching system management function, mobile APP inspection function, performance management query function and related reports had been developed and completed. In terms of the system architecture, the dispatching website adopted the Angular architecture as the foundation and was released with the technical architecture of the container (Docker), the database used PostgreSQL

and PostGIS packages to store the inspection cases planned by the dispatch of labor, and the topographic map used the topographic map tiles provided by the National Land Surveying and Mapping Center (NLSC). As for the APP, it has an offline function structure, can be downloaded from the website Apk installation and uses the vector topographic map file of the National Land Surveying and Mapping Center to transfer to the system for use, to set up a test environment to handle the education and training promotion import system. In addition, suggestions regarding the hardware and software specifications of the system had been proposed to achieve various work objectives. In the future, it will be able to collect information about power distribution equipment in real time on the spot, transmit information in real time through the Mobile Data Virtual Private Network (MDVPN), synchronize data, streamline operation procedures, and provide more real-time and effective maintenance and operation management.

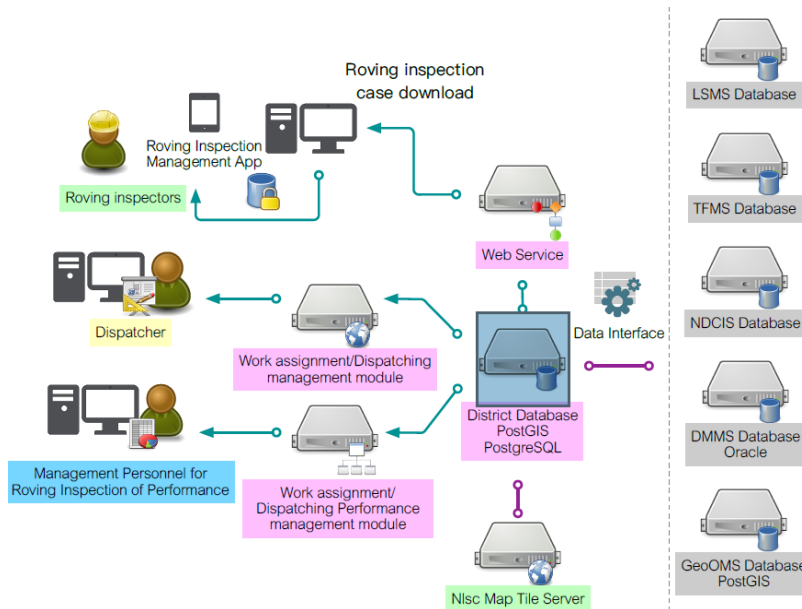


Figure 1. The system architecture planning diagram developed in this case

Future outlook :

This case has been replaced by a web structure. The information personnel of district business offices do not need to install programs for each of the colleagues, which greatly reduces the workload of the information personnel. If MDVPN technology can be introduced in the future, the on-site personnel and managers may fully grasp the equipment. Maintenance and operation status, through the inspection management mechanism, can more efficiently improve the reliability of power supply and preventive management, to provide users with high-quality, high-efficiency, and high-safety power services.