The Study of Integrating GPS and Working-Hour Operating System for the Call Service Agent System

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ABSTRACT

The purpose of this research is to develop a Substitute Assignment Suggestion System through a Working Hour operating database. Whenever there is a service call, the information service company can efficiently manage currently available man power to avoid the penalty cost. The design of this research is to integrate the company ’ s maintenance data and GPS (Global Positioning System) to calculate the traveling time and the required time to finish the speific job. With the assistance of this system, users can justify quickly and accurately whether the current maintenance job will cause delay for the next one, and in the same time generate an appropriate substitute engineer. In order to make the study results more reliable, this research utilizes the data ob-tained from the GPS to calculate traveling time. The selection of substitute engineer and job scheduling will be generated by Genetic Algorithm (GA). According to the experi-mental data, this research reduces the penalty cost by 33% in average, and the highest reduction rate is 72%. Moreover, the amount of finished jobs and working hours are improved as well.

Keywords : working hour operating, GPS(global positioning system), genetic algorithm

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