A Proposed Monitoring Life Model for Changeabie Parameters Duri Operating Time Periods for the Purpose of Best Utilizing Available Resources in Vehicle Service Station (VSS)

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Abstract

The work prcscnlcd here is lo develop a moniLoring life mathematical model to manage periodically the operations job orders of vehicle service station.   This period is occasionally an hour, a day or a longer period than that, and is normally determined by the service manager.   Model parameters are changeable over these periods due to dynamic movable situation of a vehicle markets. The objective function is to maximize the total income from vehicles service operations at all considered conventional model or with self expert prognostic system by taken into account least stop of vehicles, while keeping in mind the satisfying the customer demands and the service quality. The decision variables indicate the number of various technical operations to be performed for different types of vehicles. The constrains represent the workforce capacity limitalions, the recommended expenditure, the budget limit for spare parts stock, and for immediate needed the purchasing ones, and the available resources for each type of performed service operation.   The model deals with the fault code received from vehicles customers through telecommunication capabilities and can reserve available resources lo repair the breakdown occur whatsoever emergency or not, can also fix suitable accepted appointments. By applying the system to a sample real data, the results show an increase of the total income by 22 %, and an increase in the utilization of the workforce by 15 % compared by the results exercised in the traditional service station