**ABSTRACT**

The present invention discloses an optimization model for forecasting the shop visit build goals and prediction of optimal cost for an aero-engine maintenance and a method thereof. The model of the present invention assists in forecasting the shop visit build goals for an aircraft engine maintenance based on the operational parameters - EGTM degradation and LLP remaining cycles. The said optimization model forecasts the shop visits by optimizing the time required for a trade-off between maximum LLP usage, minimum number of shop visits and cycles remaining till the EGTM reaches the threshold set by the airline operators. It further helps in forecasting the maintenance costs corresponding to the forecasted shop visits. The present invention assists lessors/ engine owners to analyze the possibility of reducing engine Direct Maintenance Cost (DMC) and to propose various ways to improve their profits.

Figure 4 and Figure 5