SUMMARY OF THE INVENTION

[001] The present invention discloses a Scheduler for an engine based on an optimization of resources required for routine as well as non-routine maintenance demands at the task and sub-task level, even before arrival of engine at the shop. The Scheduler of the present invention assists in forecasting and simulating the Shop Visits for MROs prior to the arrival of an engine based on contracts and committed slots so as to ensure delivery of an engine within predetermined TATs. It further aids in optimization of the associated risks based on the real-time updates of the engine and allocation of resources to each phases of the visit. It checks various loads and feeds so as to complete maximum visits within TAT and at the same time minimizes the penalties where they are unavoidable.

[002] The method for an engine maintenance scheduling based on an optimization of a resource capacity comprising: selling maintenance slot by a sales department to the asset owners or airlines; receiving the maintenance information from the sales department; making a contract with confident NTEP elements for maximizing conversion and profitability per slot with the asset owners or airlines based on the required repair information; estimating a routine and a non-routine maintenance based on a stochastic model and a machine-learning model; forecasting total resource demands for the visit based on the estimated routine and non-routine maintenance; scheduling a slot by a Master Scheduler and a Slave Scheduler; determining the standard/ baseline schedule for and finalizing the visit; updating the standard/ baseline schedule of a visit and recalculating the associated risk based on a real-time update of an engine; training and retraining the machine learning model based on the operational parameters and maintenance/ capacity requirements of an engine as an input using a Bayesian update mechanism.