**ABSTRACT**

The present invention discloses a Scheduler for aircraft engines based on optimization of resources required for routine as well as non-routine maintenance, at the task and sub-task level, even before arrival of the engines at the shop. The Scheduler in the present invention assists in forecasting by simulating the Shop Visits for MROs prior to the arrival of engines 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 task updates for each engine and allocation of resources to each phases of the visit.