

SUMMARY OF THE INVENTION

The invention provides a multivariate model and a system for calculating reliability, Remaining Useful Life (RUL) and a scrap probability of a part/ component of an aircraft engine and a method thereof. The system for calculating the scrap probability of an engine part comprising a processor coupled

to the memory; and at least one application stored in the memory and executable by the processor for:

a) collecting a data related to the engine unit configuration; based on which a scrap data of each part with time parameters (CSN & CSR) and part numbers with each corresponding work-scope will be collected or inferred;

b) predicting a work-scope based on the inputs given by the user;

c) selecting the parts of the engine related to the above predicted work-scope;

d) building a probabilistic global and local model for each part number using

CSN and CSR at given scrap;

e) providing scrap probabilities based on the global and the local model for each

part of the engine for the given work-scope. [0018] Additional aspects, advantages, features and objects of the present disclosure are made apparent from the drawings and the detailed description of the illustrative embodiments construed in conjunction with the appended claims that follow. It will be appreciated that features of the present disclosure are susceptible to being combined in various combinations without departing from the scope of the present disclosure as defined by the appended claims

ABSTRACT

The present invention discloses a multivariate system for calculating reliability, remaining useful life (RUL) and scrap probability of an aircraft part/ component and a method thereof. The said system is meant for predicting impact of a combination of operational and environmental parameters on a part of an engine, based on which it assists in calculating the probability of failure of a part/ component of an aircraft engine. These probabilities are being calculated by a Global Scrap Model and a Local Scrap Model.

It further predicts the virtual aging of every repairable part/ component of the engine and thus guides scheduling a maintenance for an aircraft maintenance.