

PREDICTION METHODS AND SYSTEMS FOR STRUCTURAL REPAIR DURING HEAVY MAINTENANCE OF AIRCRAFT

ABSTRACT

Hybrid feature selection methods include methods of creating a predictive
5 model for structural repair during heavy maintenance in a fleet of aircraft. Methods
include qualifying a qualification dataset of fatigue-related parameters calculated
from data collected during a first group of flights of a first aircraft that experience a
replacement of a structural component during heavy maintenance. Methods include
receiving a qualified selection of the fatigue-related parameters and verifying a
10 verification dataset of the qualified selection of the fatigue-related parameters
calculated from data collected during a second group of flights of a second aircraft
that experienced heavy maintenance without replacement of the structural component.
Methods include receiving a set of verified and qualified fatigue-related parameters
and building a predictive model for structural repair during heavy maintenance with a
15 training dataset of the verified and qualified fatigue-related parameters calculated
from data collected during additional flights of the fleet.

Fig. 3