

Identification of Valid Data in HUMS Relational Database for Development of Accuracy Improvement Algorithm

Seon Ho Jeong¹, Dongsoo Kang¹, Ikgyu Lee¹, Yongmin Lee², Jeong Ho Kim³

¹Advanced SW Technology Team, Korea Aerospace Industries, Republic of Korea, ¹Prognostics and Analysis Team, Korea Aerospace Industries, Republic of Korea, ¹Aerospace Engineering, Inha University, Republic of Korea

HUMS (health and usage monitoring system) is a system that obtains data from each sensor, such as accelerometers, and monitors and records the operating status of major components. In rotary wing, the main components include the airframe, engine, rotor, and transmission, and CI (condition indicator) and threshold values are used to diagnose the condition and predict failure of major components. In order to diagnose the transmission, trend analysis of CI values is performed, but since there is no clear standard for diagnosis, it relies on the HUMS data analyst's own capabilities. Accordingly, it is necessary to develop algorithms and provide guidelines to improve the accuracy of the transmission status diagnosis. To develop algorithms, data such as HUMS and maintenance history are required and HUMS data can be analyzed in MPGS (Multi-Platform Ground Station) software. However, when trying to develop an algorithm relying on MPGS, there are difficulties in data acquisition, program development and automation, release and etc. Therefore, the HUMS database should be utilized directly to develop algorithms effectively and valid data needed for algorithm must be identified. Accordingly, in this paper, HUMS data of rotary wing aircraft was collected and valid data required for algorithm development was identified from the HUMS relational database.