AVIATAR ADDS “TECHNICAL REPETITIVES EXAMINATION” TO ITS RELIABILITY SUITE

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AVIATAR, Lufthansa Technik's digital and manufacturer-independent data analysis platform, recently launched a new product to improve the technical reliability of commercial aircraft. The so-called Technical Repetitives Examination enables the targeted analysis of technical logbook write-ups through a combination of Artificial Intelligence (AI) with the extensive engineering knowledge of Lufthansa Technik. As of today, the solution has been rolled out at more than 20 airlines with various Airbus and Boeing aircraft types. Through their feedback from the customer’s perspective, it is jointly developed further.

The aim of the product, which expands the scope of the AVIATAR Reliability Suite launched last year, is to make recurring defects (so-called repetitives) within an aircraft’s technical logbook write-up more transparent and easier to monitor. In the past, the required transparency was often affected by various factors compromising the quality of the logbook entries. These are usually created manually and in free text fields, and hence often suffer from misspellings, or due to different languages, or incorrect assignments to the individual technical system groups (so-called ATA chapters).

For example, manual entries in the technical logbook often contain abbreviations or different designations for the same component, such as “coffee machine”, “coffee brewer” or “espresso maker”. As a result, engineers have often been unsure whether they have really recorded the full spectrum of error descriptions for a particular system. The AI algorithm, trained by Lufthansa

Technik's engineering expertise, immediately recognizes identical components and automatically assigns the associated logbook entries to the correct ATA chapter.

On the one hand, the resulting graphical overview ensures that all the various defects of a specific component for the selected period and the entire fleet are fully recorded and evaluated. On the other hand, the structured presentation enables engineers to identify repetitives effectively and at an early stage, which not only creates additional transparency, but also allows further analyses and conclusions to be drawn about possible cross-fleet problems.

From this greatly improved overview, the engineering teams can use their expertise to derive recommendations for troubleshooting and implement them in targeted measures to improve reliability in technical flight operations; from overhauls or modifications of individual aircraft components to adapted processes in maintenance operations. As it continues to evolve, the Technical Repetitives Examination will eventually be able to automatically generate such recommendations for engineers on its own.

Thanks to individual customization, the solution can already respond flexibly to role- or authority-specific requirements, for example through precisely user-defined criteria for the repetitives. In addition, Technical Repetitives Examination offers seamless data integration into existing maintenance and engineering software solutions such as AMOS. Intelligent data pre-processing using generative AI also helps to simplify and structure the flood of information in order to make the evaluation and integration processes more efficient.

Dr. Jan Philipp Graesch, Product Lead for AVIATAR's Reliability Suite at Lufthansa Technik, commented: "This product is the result of extensive collaboration between our engineers and data scientists. The positive response from our customers and development partners strengthens our belief that we have created an AI-based solution that will significantly relieve airline maintenance control centers and engineering departments of a very time-consuming task, while at the same time enabling them to perform maintenance activities more efficiently. Thus, it fits perfectly into the existing product portfolio of our Digital Tech Ops Ecosystem."

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