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total-component-support



Material planning at its best

How often does a specific component in an aircraft fail, requiring replacement?

Newly developed software enables a precise answer to this question – for even better **demand-oriented planning of material inventories.**

Over 140 customers operating more than 4,000 aircraft rely on Lufthansa Technik for material supply. For this purpose, more than 40,000 different components with more than 130,000 different part numbers are kept in its worldwide material pools, with a total value amounting to 1.7 billion euros. The Material Availability Solutions unit has the task of ensuring that every Total Component Support (TCS®) customer always has the right component at the right time in the right place, which requires a sufficient number of spare parts in inventory. In addition to availability and

prompt supply to the customer, cost-effectiveness is always critical here. Having too many components costs money and ties up resources.

The staff of Material Availability Solutions used to calculate the optimal material inventory using specific guidelines and algorithms, but over time the task became much more complex owing to the growing number of aircraft types and customers – and thus different components. “That’s when we first started thinking about taking the variety of data that we’ve collected over the course of supplying material to our

customers during the last 20 years, and improving the analysis and utilization of it,” explains Project Manager Tilman Seidel.

Statistical analysis

An initial research project involved a look at the statistical probability of component failures and their dependence on factors such as flight hours, flight cycles and calendar days. This alone enabled better predictions. The follow-up project – Material eMotion – went a decisive step further toward the goal of optimizing material

planning for the component pool and automating it as much as possible. "It was a really extensive project. Naturally, we needed mathematical know-how, but we also looked at process flows. And it was a special challenge to use and apply these data sensibly at the operational level," says Seidel.

The analysis of the collected data enables material planners to create precise forecasts of how components of a specific technology behave during flight operations. "For instance, durability is specific to customers, because some customers replace parts more frequently than others," explains Seidel. Generally, the statistical failure rate for components is a function of flight hours, cycles, duration and customer-specific behavior. By using the new methods, for each component a significant dependency on a certain parameter, e.g. the number of takeoffs and landings for flaps, can be proven.

Special software

The project team and its partners developed software that can be used for targeted analyses of the data – a tailored SAP adaptation that enables the unique treasure trove of knowledge to be used in daily operation. Success was evident quickly. Within just the first two months after the system was introduced, precise demand forecasts enabled the reduction of 35 million euros worth of inventory, and up to 98 percent of components are now planned largely automatically. The application can be extended as desired and is thus fit for further growth.

Higher performance level

"The simplification of our material inventories especially benefits our customers," says Andreas Drosdowski, Head of Fulfillment Open Loop EMEA, describing the application of the new system in practice. "We can predict our customers' demands even better and deliver better service at lower cost. In other words, our performance level has climbed noticeably again." Among other things, dynamic demand tracking enables more precise recommendations for inventory at customers' home airports – and ensures better availability in the event of unforeseen incidents.

"We are getting a lot of positive feedback from our customers. It's truly a win-win situation – lower costs with improved availability," says a pleased Drosdowski. And the next phase is already in planning. The unit wants to use the data to advise aircraft operators on the areas where they can optimize material supply for their fleets even more. The prototype for these analyses has already been produced and tested with individual customers. The feedback was enthusiastic, and so plans now call for the prototype to be extended even further – so that together, even more improvement can be achieved. ☺



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ULLRICH GEIDEL has been appointed as Director of Finance of N3 Engine Overhaul Services. He is following Erin Somers, who retained this position for two years on behalf of Rolls-Royce. Prior to this, Ullrich Geidel was CFO of Ameco Beijing, a joint venture of Lufthansa Technik and Air China, in Beijing. Alexander Stern, Director and General Manager of N3, said: "His expertise and many years of experience in the aerospace and MRO business will help N3 continue to develop well as a leading company in the overhaul and repair of Rolls-Royce Trent engines." //



OEZGUER YESILKAYA has taken over the position of CEO of Lufthansa Technik Turbine Shannon. Oezguer Yesilkaya studied Industrial Engineering and Business Administration at the Hamburg University of Technology. He began his career with Lufthansa Technik in 2009 as a Lean Project Engineer at the Engine Services division.

Following several responsible management positions he was promoted to the position of Manager of Product Engineering and Production Support in 2014. He became the Head of the center of excellence for compressor airfoils, the position he held until his most recent promotion. //



LUIGI CELMI is Chief Executive Officer of Lufthansa Technik Services India since January 2017. Starting his career in aviation, Celmi worked as a design engineer at ATR in Toulouse, France, from 2004. In 2006, he moved to Bangalore, India, where he was promoted to the position of Head of Customer Support in 2009. He then took

on the responsibilities of Managing Director for South Asia. In 2013, he moved to Singapore, initially as Vice President Customer Support and then, until his change to Lufthansa Technik, as President and Managing Director for Asia Pacific. //



MARTIN LUTZ is the Chief Executive Officer of Lufthansa Technik Vostok Services. Martin Lutz completed his Bachelor of Science in general engineering at the Hamburg University of Technology and finished his studies with a master's degree in International Production Management. He started his professional career with BMW China

working as project manager. In 2009 Martin Lutz joined Lufthansa Technik, initially as key account manager in the Component Services division. In 2013, he was given the position of Demand Manager at Lufthansa Technik in Munich. //



CALLUM YU has joined the Lufthansa Technik sales team as regional representative in the Beijing office. Callum Yu has acquired a master's degree in international marketing from the University of Sussex. In 2015, Yu joined Ameco Beijing, taking over a purchasing role in the aircraft components team. A number of different responsibilities fol-

lowed, among them providing support during the introduction of the A350 at Air China. In his new position, Yu is responsible for the Air China Group and a number of additional Chinese carriers. //