

Rolls-Royce (RR) has extended the engine health monitoring (EHM) services that it provides to airlines as an optional element of its Total Care support packages, to a wider level of assistance related to fleet management services. These will make it possible for an airline to outsource a large portion, or even all, of its flight operations and maintenance control activities.

To date, RR has provided a range of EHM services to airlines operating its engines through a service previously called Controls and Data Services, now called Rolls-Royce Digital Services. The core of this service has been to take performance data from a set of engine sensors, and download some or all of it in real time during flight. This has been used to monitor engine performance, predict and diagnose any in-flight reliability and malfunction issues, and trend the data over a long-term basis to assist in the maintenance management of engines. This range of services is an element of the Total Care package that RR offers to airlines that operate RR engines. This is also extended to other linked elements of services offered by RR, which include defining the workscope for the engine's shop visit, and coordinating the provision of a spare engine.

The EHM monitoring services effectively replaces a small element of an airline's operations and maintenance control departments, as well as an element of the engineering management process for its engines and powerplants. RR has been offering these EHM and engineering management services for more than a decade.

In June 2017 RR announced that it is to broaden and extend the services it offers to effectively replace several more elements of an airline's flight operations and maintenance control departments.

The services it offers provide an optional alternative to the plethora of systems and applications an airline can choose from to optimise its fleet operations. Many solutions can be used to maximise or optimise fleet availability, and fleet and aircraft operational efficiency, but these are often used individually. RR now offers all solutions to fulfil an airline's requirements in relation to its flight operations and maintenance control activities with respect to the aircraft's engines. The related services for the airframe can now be outsourced to the airframe

Rolls-Royce has extended its EHM services to a portfolio of fleet and operations management services that allow an airline to outsource a plethora of its in-house operations activities.

Rolls-Royce evolves its health monitoring services

manufacturer.

Some of the point solutions and applications that can be replaced by RR's new services include flight planning and flight execution, and fuel planning optimisation. This is an enhancement of the fuel efficiency services that RR already offers through its Digital Data product. Overall, the services provide airlines with an holistic operations and maintenance control service.

As testament to this, Norwegian Airlines has outsourced all of its 787 fleet and operational management activities to RR and Boeing.

RR has introduced this wider range of operational and maintenance control services by opening its availability centre at its headquarters in Derby, UK. Airlines can outsource their RR engine fleets to this centre, which will offer the newly introduced operations and maintenance control services. The availability centre will make use of a wider range of data

sets and information, including weather data and fleet operational information. The new services are therefore partly possible because of the wider range of data types that can now be monitored and transmitted from the aircraft and engines, and partly because of the capabilities of big data analytics.

A new element of RR's services that it intends to introduce in a few years' time will be the ability to remotely perform top-case and other boroblending repairs from Derby. This is being developed from a technique to control a boroblending repair of airfoils, by passing a blending repair device through the engine's borescope ports. The execution of the repair will be controlled from Derby, regardless of where the engine is located in the world. [AC](#)

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Norwegian Airlines has outsourced all its 787 airframe and Trent 1000 engine management activities to Boeing and Rolls-Royce.