The aero engine experts

Intelligence and creativity
We are engine experts

MTU Maintenance is the global market leader in customized service solutions for aero engines. As engine experts, we offer a wide range of individually-tailored solutions encompassing innovative maintenance, repair and overhaul (MRO) services, integrated leasing and asset management.

Our people make the difference: We are passionate about engines and dedicated to supporting our customers. We marry world-class engineering with intelligent creativity and never give up unless an optimal solution has been found.

This is demonstrated by our track record of great customer relationships. MTU Maintenance and its 5,000-strong workforce currently perform over 1,000 shop visits a year for more than 200 airline customers and close to 30 engine types. We are certified by the FAA, EASA and CAAC and have over 50 country-specific certifications throughout our network.

MTU Maintenance is a business unit of MTU Aero Engines AG, a world-class technology leader in the aviation industry. We combine our engineering expertise with in-depth market understanding and robust financial strength to provide customers with optimum engine solutions. Be part of it!
Our North American cousin, MTU Maintenance Canada Ltd., is specialized in solutions for CF6, CFM56 and V2500 engines as well as comprehensive accessory and LRU services for engines ranging from the CF34 to the GE90 engine families.

The small but fierce Texan facility MTU Maintenance Dallas Inc. is our point of call for on-site and near-wing services.

We are global

With locations in the Americas, Europe and Asia, capabilities for on-site and near-wing services, as well as representative offices, MTU Maintenance and its 5,000-strong workforce is available wherever and whenever needed.

MTU Maintenance Lease Services B.V., an 80/20 joint venture with Sumitomo Corp., is a successful and fast-growing start-up. On the market since 2014, our leasing and asset management specialists continually innovate solutions for asset owners and operators.
MTU Maintenance Hannover GmbH is our birthplace and the largest facility within the group. Specialized in MRO services for large and medium-sized aero engines, the facility is the go-to shop for engines such as the GE90, CF6-80C2, CFM56-7 and V2500, as well as high-tech repairs.

MTU Maintenance Berlin-Brandenburg GmbH has been part of the MTU network for over 25 years and focuses its attention and expertise on the small and mighty CF34 and Pratt & Whitney Canada PT6A, PW200, PW300 and PW500 engines.

Our Asian pearl, MTU Maintenance Zhuhai Co. Ltd., a 50/50 joint venture with China Southern, is located in the Zhuhai free trade zone near Hong Kong and Macau. The facility is the largest narrowbody engine shop in Asia and a global CFM56 and V2500 heavyweight.

Airfoil Services Sdn. Bhd. (ASSB) in Malaysia does as the name suggests: airfoil repairs for low-pressure turbines and high-pressure compressors. A 50/50 joint venture with Lufthansa Technik, the facility enjoys strong demand for its dedicated component repair services.

EME Aero Sp. z. o. o. (Engine Maintenance Europe) is being set up as a 50/50 joint venture between Lufthansa Technik and MTU Aero Engines. It will service the GTF™ engine family as part of the OEM network.
Our intelligent solutions

At MTU Maintenance, we understand that operators increasingly require services tailored to their specific needs in order to control and optimize cost. Additionally, we know that residual value is key to lessors and asset managers. Our solutions meet these needs.

PERFORMPlus

MRO makes up the core of our services and we are exceptional at it. For operators of newer engines, it is all about generating more flight hours with customized solutions. We achieve this by intelligent fleet management that optimizes removals across a defined period. This is complemented by predictive maintenance, based on engine trend monitoring, on-site services and spare engine support. Once an engine comes into the shop, our customized workscoping, high-tech EASA-FAA approved repairs and our engineering expertise help lower overall costs.

SAVEPlus

We know that as engines age, MRO costs increase. And we understand that whatever engines operators fly, they want to do this in the most cost-effective way. Which is why we provide smart strategies for mature engines.

Our fully independent solutions include alternative MRO, such as smart repairs and tailored workscopes to suit operators’ remaining flight periods as well as material salvation and intelligent teardowns. Furthermore, these services can be combined with alternatives to MRO such as leasing in of green-time engines or exchanging engines for the remaining period until phase-out.
More flight hours at lower cost with customized MRO

Risk mitigation and more revenue with portable MRO

Reduced cost with smart strategies for mature engines

Maximized value with effective end-of-life asset management

AOG support
Engine/module MRO
Inspection, diagnostics and investigation
On-site and near-wing services
LRU and parts management

Engine trend monitoring
Spare engines
Spare parts, LRU and QEC
Parts and accessory repair
Teardown
Technical asset management

MRO solutions for lessors and asset owners are all about mitigating risk and maximizing the revenue stream. MTU Maintenance supports customers with a portable MRO solution across the lifecycle, enabling fast remarketability of assets through easy transfers and predictable costs with no unnecessary MRO work.

Services can start from the moment the engine is purchased, or at any point in the lifecycle. It is a case of opt-in and opt-out at any time.

Lessors are directly involved in engine maintenance decisions – particularly during transitions between lessees, in managing and optimizing maintenance reserves and choosing the timing of engine shop visits. Our solution also includes intelligent end-of-life strategies and extensive technical consultancy.

Both lessors and lessees benefit from our comprehensive, cost-effective MRO services, simplified transitions, and ultimately, financial and technical risk mitigation.

Towards the end of aircraft life, asset owners are looking to get the most value from their engines. Our effective end-of-life asset management ensures the best exit strategy for the asset. This can range from generating additional income through green-time lease out to sale, exchange and trade all the way to maximizing the material value of the asset through teardown and material management. Our competence as an MRO provider, parts trader and lessor means that whatever the engine or parts, we will find the right solution and the right price for you.

In addition to these fully integrated service solutions, we also provide a series of additional and individual services ranging from single MRO events, repairs and on-site and near-wing services to complementary services such as technical asset management, LRU management and engine trend monitoring. All of these services can be provided on an ad-hoc basis, or combined as part of a customized solution.
We have the largest portfolio worldwide

The number one independent provider

<table>
<thead>
<tr>
<th>Engine</th>
<th>Start year</th>
<th>Shop visits</th>
<th>Market share</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF34-8/10E</td>
<td>2003</td>
<td>1,200 +</td>
<td>17 %</td>
</tr>
<tr>
<td>CFM56-2/3/5B/7</td>
<td>1999</td>
<td>2000 +</td>
<td>8 %</td>
</tr>
<tr>
<td>CF6-50/80C</td>
<td>1981</td>
<td>3,800 +</td>
<td>15 %</td>
</tr>
<tr>
<td>GE90-110/115B</td>
<td>2010</td>
<td>75 +</td>
<td>3 %</td>
</tr>
<tr>
<td>PW2000</td>
<td>1988</td>
<td>650 +</td>
<td>19 %</td>
</tr>
<tr>
<td>V2500-A5</td>
<td>1989</td>
<td>5,000 +</td>
<td>35 %</td>
</tr>
</tbody>
</table>

1 incl. ceased subtypes | 2 incl. KC-10 military tanker | 3 incl. IAE volume

From business jets to widebody engines

MTU Maintenance has the largest engine portfolio worldwide and is proud of this diversity. We are the leading independent MRO service provider for all engines in our portfolio, including the popular CFM56, GE90 and V2500 engines, and renowned for our in-depth understanding of how these engines tick. Furthermore, we lend our MRO expertise to the OEM for next generation engines such as the PW1100G-JM, GEnx and GP7000 and share synergies with our parent company, MTU Aero Engines, which has OEM program shares.

We also carry out MRO activities on behalf of Pratt & Whitney Canada Customer Service Centre Europe GmbH, a 50/50 joint venture between MTU Maintenance Berlin-Brandenburg and Pratt & Whitney Canada for the market area Europe, Middle East and Africa. Through this joint venture, we also provide services for the business jet engines JT15D and PW600, as well as the helicopter engines PT6B/C/T, in addition to the PW&C engines served in-house at our Ludwigsfelde location.
### A strong OEM partner

<table>
<thead>
<tr>
<th>Engine</th>
<th>Start year</th>
<th>Workscope</th>
<th>RRSP share</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GE9X</strong></td>
<td>planned</td>
<td>TCF MRO</td>
<td>4%</td>
</tr>
<tr>
<td><strong>GEnx</strong></td>
<td>2015</td>
<td>TCF MRO</td>
<td>6.6%</td>
</tr>
<tr>
<td><strong>GP7000</strong></td>
<td>2010</td>
<td>LPT MRO</td>
<td>22.5%</td>
</tr>
<tr>
<td><strong>PW1100G-JM</strong></td>
<td>2016</td>
<td>Engine MRO</td>
<td>18%</td>
</tr>
<tr>
<td><strong>PW6000</strong></td>
<td>2007</td>
<td>Engine MRO</td>
<td>18%</td>
</tr>
<tr>
<td><strong>V2500-A5</strong></td>
<td>1989</td>
<td>Engine MRO</td>
<td>16%</td>
</tr>
</tbody>
</table>

**P&WC engines**

<table>
<thead>
<tr>
<th>Engine</th>
<th>Start year</th>
<th>Workscope</th>
<th>Shop visits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PT6A</strong></td>
<td>1992</td>
<td>Engine MRO</td>
<td>2,700+</td>
</tr>
<tr>
<td><strong>PW200/210</strong></td>
<td>2000/2016</td>
<td>Engine MRO</td>
<td>1,000+</td>
</tr>
<tr>
<td><strong>PW300</strong></td>
<td>2002</td>
<td>Engine MRO</td>
<td>300+</td>
</tr>
<tr>
<td><strong>PW500</strong></td>
<td>2005</td>
<td>Engine MRO</td>
<td>200+</td>
</tr>
<tr>
<td><strong>PW800</strong></td>
<td>2019</td>
<td>LPT MRO</td>
<td>/</td>
</tr>
</tbody>
</table>

4 Served in-house at MTU Maintenance Berlin-Brandenburg GmbH
Our people are our future

Staff and training

A company is nothing without its expert workforce, especially in the MRO industry and at MTU Maintenance, where it is our collective brain that produces the best solutions for our customers. As such, we invest heavily in our staff: We provide apprenticeship schemes and training for mechanics, continual education for engineers and administrative staff, as well as management schemes for bright sparks. We employ a workforce of over 5,000 from over 60 different nationalities and are always looking for the next industry talent.

Invest, grow and succeed

To increase induction flexibility for our customers and serve the market demand as the aviation industry continues to boom in the coming years, MTU Maintenance is heavily investing in its future. We are introducing the new facility, EME Aero in Poland. Existing facilities such as in Berlin-Brandenburg and Hannover will have new buildings and streamlined shop floors. And MTU Maintenance Zhuhai will have added 50% capacity to accommodate 450 shop visits by 2021. MTU Maintenance Canada introduced V2500 capabilities in late 2017 and will add CF6 capabilities in the near future. Additionally, our joint venture ASSB is increasing capacity, and we will be expanding the MTU Maintenance Lease Services engine pool to over 100 engines by 2022.