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MTU is built on three pillars  
Partners and customers appreciate MTU’s excellence

<table>
<thead>
<tr>
<th>Commercial OEM business</th>
<th>Military OEM business</th>
<th>Commercial MRO business*</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Revenues: € 1.6 billion (33 %)**</td>
<td>• Revenues: € 0.4 billion (9 %)**</td>
<td>• Revenues: € 2.8 billion (58 %)**</td>
</tr>
<tr>
<td>• Decades of partnerships with OEMs</td>
<td>• European and U.S. engine programs</td>
<td>• Services: maintenance, leasing and asset management</td>
</tr>
<tr>
<td>• Balanced product portfolio in all thrust categories</td>
<td>• Full system capability</td>
<td>• Exposure to highest growth engines (V2500, CFM56, CF34, GE90)</td>
</tr>
<tr>
<td>• Order volume secures business into the next decade</td>
<td>• R&amp;D is typically customer financed</td>
<td>• Global network</td>
</tr>
<tr>
<td>• Partnerships with OEMs increasingly include maintenance</td>
<td>• Leading partner of the German Armed Forces</td>
<td>• Direct customer business, partner of OEMs and airlines</td>
</tr>
<tr>
<td>• Approx. 30% of active aircraft with MTU participation</td>
<td>• Service packages precisely tailored to the requirements of military partners</td>
<td>• More than 1,400 customers, including over 200 airlines</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OEM</th>
<th>MRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>€ 2.0 billion**</td>
</tr>
<tr>
<td>EBIT adj margin**</td>
<td>21.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MTU Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
</tr>
<tr>
<td>EBIT adj margin**</td>
</tr>
</tbody>
</table>

*) MRO = Maintenance, Repair and Overhaul  
**) Basis: Fiscal 2018

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Key investment highlights
Over 80 years experience in aero engine industry and over 10 years reliability in the financial market

Is MTU a profitable Investment?

Situation

• Aviation is an attractive growth market
• MTU has invested around 4 billion € over the last 10 years, which makes this decade the most important investment phase in the company’s history
• MTU is a pure aero engine player with high exposure to the aftermarket
• High visibility of new engine production
• High predictability in the aftermarket
• High barriers to entry
• High quality guidance since IPO
• Strong shareprice performance

Outlook

• Industry order backlog translates into a production workload of 8 – 9 years
• MTU has secured program stakes in all market segments long-term
• In the Commercial OEM market MTU outperforms 3 out of 4 segments
• New program opportunities are expected for the middle of the next decade
• Focus on dividend increase and cash flow improvement
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Overview of aero engine industry players
MTU is an essential partner in the engine value chain

Aero Engine Industry Characteristics
- Industry players are specialized in different modules/technologies
- Oligopolistic structure of market

High barriers to entry
- High technology expertise required
- Substantial up front investment (R&D, Concessions) required
- Long term contracts
- Structurally captive spare parts business
- Certification requirements and regulatory approvals
A balanced product portfolio in all thrust categories ensures MTU’s long-term success

Return on investment periods in the commercial OEM business
MTU’s continuing growth is supported by all market segments

MTU projects outperformance of market growth in 3 out of 4 segments

OEM market volume ($bn)

<table>
<thead>
<tr>
<th>CAGR</th>
<th>2018 - 2028</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total market</td>
<td>mid single digit</td>
</tr>
</tbody>
</table>

CAGR | Aircraft Segment
--- | ---
Mid single digit | Widebody (50-120 klb)
Mid single digit | Narrowbody (20-50 klb)
High single digit | Regional jet (13-24 klb)
High single digit | Business jet (3-16 klb)

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In the commercial OEM business, 30% of today’s aircraft have MTU technology on board and MTU is growing faster than the market as a whole.

<table>
<thead>
<tr>
<th>Business jets</th>
<th>Regional jets</th>
<th>Narrowbodies</th>
<th>Widebodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues will <strong>triple</strong> in 10 years</td>
<td>Market share will <strong>increase</strong> from 0% to 90%</td>
<td>Excellent market position will <strong>further improve</strong></td>
<td>New market segments have <strong>opened up</strong></td>
</tr>
</tbody>
</table>

Above-average growth
## Business jet market
MTU will triple its revenues in the highly profitable business jet market over the next 10 years

<table>
<thead>
<tr>
<th>Business jets</th>
<th>Regional jets</th>
<th>Narrowbodies</th>
<th>Widebodies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PW300 / PW500</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Installed base of more than 7,600 engines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 10 business jet applications in operation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Successful market introduction of Cessna Latitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PW800</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Program share of 15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Exclusive engine for future Gulfstreams and future Dassault Business Jet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• MTU will be responsible for the LPT, the first four stages of the HPC and will participate in the MRO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• EIS expected in 2018 (G500), 2019 (G600) and 2022 (Dassault)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Regional jet market
MTU will increase its market share in the regional jet market from 0 % to 90 %

- **Program share of 15%**
- Exclusive engine for MRJ with seats up to 92 passengers
- First flight in Nov 2015
- EIS expected in 2021

**PW1200G**

- **Program share of 17%**
- Exclusive engine for the A220
- Airbus majority stake in CSeries partnership
- EIS in July 2016 with launch customer Swiss International Airlines

**PW1500G**

- **Program share of 15-17%**
- Exclusive engine for Embraer’s 2nd Gen E-jets
- Embraer is current market leader with large customer base
- First flight of E190-E2 with PW1900G in May 2016
- EIS in 2018-2020

**PW1700G/1900G**
Narrowbody market
In the short- and medium-haul business, MTU has expanded its market share and risk-and-revenue partnerships

- ~6,500 engines flying
- Most important program w.r.t. revenue contribution
- Strong growth of spare parts sales until mid of next decade
- #1 MRO provider - capability in 3 locations
- Market share in NB segment ~24%
- Program share increase in 2012 from 11% to 16%

V2500

- Strong order book
- 16% improved fuel efficiency
- Designed for lower maintenance cost
- ~50% market share on A320neo family expected
- Increase in Market share in NB segment (~30%)
- Program share of 18%
- EIS 2016
Widebody market
In the long-haul business, MTU is a partner of Pratt & Whitney and the center of excellence for GE Aviation's turbine center frame

- Market share of ~50% on the A380
- Entry into service 2008

- Market share > 60% on 787, exclusive on 747-8
- In production since 2011
- Market expectation of 4,400 engines
- MTU is partner of the GE-MRO network
- Exp. MRO revenue 3 bn€

- Revenue potential 4 bn€
- ~950 orders and options
- Entry into service expected in 2020
- Exclusive engine for Boeing 777X
- MTU will be partner of GE-MRO network
OEM production is continuously ramping-up with additional demands in various programs

Deliveries per year of all OEM programs

<table>
<thead>
<tr>
<th>Year</th>
<th>Turbine</th>
<th>Compressors</th>
<th>Turbine Center Frames</th>
<th>Engine Assembly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,100</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,950</td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,050</td>
</tr>
<tr>
<td>2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,850</td>
</tr>
</tbody>
</table>

Increase by a factor 4
An optimized make and buy ratio will enable total production volume to double over the next five years at competitive prices

**High-tech**
- Complex components and production processes
- High degree of automation
- Development of new technologies for production

**Mid-tech, Best-cost**
- Adaptation of standard components and production lines
- Expansion of production of “mid-tech” components and production processes
- Expansion of module assembly with know-how from the automotive industry

**Raw materials, Mid-Low Tech**
- Raw material
- Second source for components
- Low-tech components from best-cost countries
- Double-sourcing for all important key-components

**MTU Aero Engines, Munich**
- Complex components and production processes
- High degree of automation
- Development of new technologies for production

**MTU Aero Engines Polska**
- Adaptation of standard components and production lines
- Expansion of production of “mid-tech” components and production processes
- Expansion of module assembly with know-how from the automotive industry

**Suppliers**
- Raw material
- Second source for components
- Low-tech components from best-cost countries
- Double-sourcing for all important key-components
Increase in production rates continue to drive strong growth backed by order book

MTU Commercial OE Revenue Breakdown

- Business Jet shows a higher revenue share with IFRS15 implementation
- Regional Jet revenue contribution will gain importance
- Assuming rate 70 narrowbody doubles & will remain most important
- GE9X will start to contribute to Widebody revenue early 2020s
Spare parts revenues growth driven by narrowbody engines

MTU Commercial Spares Revenue Breakdown

- V2500 contributes ~40% of spares revenues today and grows until mid 2020s
- PW1100G-JM starts to contribute 2020 onwards
- CF6-80 starts to decline early 2020s
- GEnx and GP7000 show steady growth and compensate decline of CF6-80
- PW2000 remains stable
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MTU is well positioned in the international military aircraft market

**Fighter**
- 140 Eurofighters and 85 Tornados in service in Germany
- Eurofighter with attractive export potential
- Increasing aftermarket for EJ200
- Germany phase out of Tornado from 2025 onwards

**Transport**
- 170 A400M ordered, thereof 67 delivered
- A400M well positioned for export
- Potential cooperation between Boeing and Embraer on KC-390 (equipped with V2500) could strengthen order activity

**Helicopter**
- 181 Eurocopter Tiger delivered
- CH53-K entry into service on track for 2019 and excellent positioned for export
### Overview about military engine programs and business outlook

<table>
<thead>
<tr>
<th>Year</th>
<th>Fighter, trainer</th>
<th>Transport</th>
<th>Helicopter</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Eurofighter EJ200 ✓</td>
<td>A400M TP400 ✓</td>
<td>CH-53K T408 ✓</td>
<td>Eurofighter Middle East ✓</td>
</tr>
<tr>
<td>2020</td>
<td>Eurofighter Upgrade, Tranche 1 replacement</td>
<td>KC390 V2500 ✓</td>
<td></td>
<td>A400M Export potential ✓</td>
</tr>
<tr>
<td>2025</td>
<td></td>
<td></td>
<td></td>
<td>CH-53K Export potential ✓</td>
</tr>
<tr>
<td>2030</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2035</td>
<td></td>
<td></td>
<td></td>
<td>NGWS</td>
</tr>
</tbody>
</table>

**Fighter, trainer**
- Eurofighter EJ200
- Eurofighter Upgrade, Tranche 1 replacement

**Transport**
- A400M TP400 ✓
- KC390 V2500 ✓

**Helicopter**
- CH-53K T408 ✓

**Export**
- Eurofighter Middle East ✓
- A400M Export potential ✓
- CH-53K Export potential ✓
Increasing likelihood of campaign wins in military business leads to an improved outlook

MTU military OEM revenue breakdown

- ~2/3 of today’s revenues come from fighter engines EJ200 and RB199
- Military Revenue will grow towards ~600 m€ until 2025
- Underlying assumption are campaign wins for Eurofighter and the development of the next fighter engine

Com. Military Revenues 2018 E
CAGR
Mid single digit

Com. Military Revenues 2025 E

Series
Aftermarket/Services
Upside
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MTU’s MRO portfolio is the basis for future growth
MTU has the largest engine MRO portfolio of all providers

### Commercial MRO market (in bn$)

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAGR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Growth Rate (CAGR)
- **Total market**
  - High single digit growth
  - No access as of today

#### Market Approach
1. **Mid single digit**
   - Independent or airline cooperation
   - CF34, CFM56
   - CF6-80C, GE90G
   - PW2000, V2500 (Leap²)
2. **Mid to high single digit**
   - CF6-80C, GE90G
   - PW2000, V2500 (Leap²)
3. **Low to mid teens**
   - OEM cooperation
   - V2500, PW1000G
   - GEnx, GE9X, GP7000

#### Portfolio
- **CF34, CFM56, CF6-80C, GE90G, PW2000, V2500 (Leap²)**

*Source: MTU, escalated*
MRO market approach: Independent MRO
MTU offers minimized maintenance costs and the best possible engine value retention through customized solutions

Benefits
- Long-standing expertise and market leadership as an independent provider
- One-stop for services – a partner for all your engine needs
- Integrated solutions throughout the lifecycle of an engine
- Combined know-how as MRO, lessor and asset manager ensures the most cost efficient solutions

Partners
- JV with China Southern
- JV with LH Technik (ASSB)

Programs
- CF34, CF6, CFM56, GE90G, PW2000, V2500, Parts repair, LM IGTs, Vericor

Market trends
- Ongoing demand for independent solutions as an alternative to OEM aftermarket services
- Increasing focus on older engine models
- Growing demand for vertically integrated solutions – beyond maintenance

No. 1: MTU is the largest independent maintenance provider in the world
MRO market approach: OEM cooperation

In the more recent programs, MTU increasingly supports the OEMs, providing standardized maintenance solutions

Benefits
- Long-term partner in the OEM network
- Long term deals with focus on reducing life-cycle cost
- Ability to set up best-cost shops

Partners
- OEM
- JV with LH Technik (EME Aero)

Programs
- GEnx, GP7000, PWC, V2500, PW1000G, GE9X

Market trends
- Current OEM MRO market share is around 40%
- OEM market share is steadily growing
- Airlines are focusing on their core business

70 - 80% of new engines are sold with an OEM maintenance contract
Both market segments within commercial MRO business will continue to grow strongly

MTU commercial MRO revenue breakdown

- Majority of newer engines sold by the OEM with flighthour agreements
- OEM-MRO cooperation workload secured through risk & revenue sharing agreement
- Strong independent MRO wins in the past years lead to an improved growth expectation
- Share of independent vs. OEM-MRO cooperation will remain stable

Com. MRO Revenues 2018 E

CAGR

High single digit

Com. MRO Revenues 2025 E

Independent
OEM-MRO cooperation
Higher than expected volumes drive capacity increase primarily at best-cost locations

Capacity demand vs. available capacity

Highlights

• Rising demand for mature and new engine programs
• Short term: Full capacity utilization at existing locations
• Mid to long term: Increase capacity at best cost locations
• Strengthen partnerships with China Southern, LHT
• Best cost share will raise from 30% to 50%
MTU Maintenance Zhuhai No.1 MRO shop in China with strong revenue growth

Highlights

- 50:50 JV with China Southern
- Prolongation of JV with China Southern until 2051
- JV partner China Southern intends to double its aircraft fleet until 2035
- Target to expand to new engine platforms
- Increase capacity at MTU Zhuhai by another 50%
- Long term expansion concept in China under development
Lufthansa Technik – a strong partner for our new GTF MRO shop in Poland

EME Aero will become the most efficient GTF MRO shop worldwide

**Highlights**

- Company founded December 2017
- 50:50 JV with Lufthansa Technik
- Total investment of € 150m from both shareholders
- Start of operations in 2020
- Workforce ~ 800 employees
- Capacity ~ 450 Shop visits
MTU Maintenance centers of excellence
All locations are getting ready to efficiently master future growth

MTU Maintenance Lease Services
- Expansion of (RJ + NB + WB) engine lease pool and asset management

MTU Maintenance Hannover
- NB + WB engines
- Short-term increase in personnel
- GTF maintenance
- Expansion repair technologies

MTU Maintenance Canada
- NB + WB engines and accessories
- 3rd MRO shop for V2500
- Growth strategy for accessories business

MTU Maintenance Berlin-Brandenburg
- BJ + RJ + IGT
- New logistics center
- Expansion of BJ portfolio

EME AERO - New GTF MRO shop
- 50:50 JV with LHT
- Facility in best cost region
- Start in 2020

MTU Maintenance Zhuhai
- No. 1 MRO shop in China
- Expand customer base and grow NB engine portfolio
- Increase capacity

Airfoil Services (ASSB)
- JV with LH Technik
- NB + WB parts repair
- Dedicated to parts repair – now and in the future
- Program expansion

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**Guidance 2019 Update: Slightly higher cash conversion coming from IFRS16 implementation**

### Organic Growth

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military revenues</td>
<td>+ 10%</td>
</tr>
<tr>
<td>Commercial OE</td>
<td>Up low teens</td>
</tr>
<tr>
<td>Commercial Spares</td>
<td>Up mid to high single digit</td>
</tr>
<tr>
<td>Commercial MRO</td>
<td>Up high single digit*</td>
</tr>
</tbody>
</table>

### Total Group Sales

- ~ 4.7 bn €

### EBIT adj. margin

- ~ 15.5%

### Net Income adj.

- Growth in line with EBIT adj.

### CCR**

- 55% - 65% (ex 50% - 60%)

*) Direct invoicing to IAE for V2500 OEM-MRO from MTU-Z in 2019 will lead to stable Com. MRO revenues – refer to our Investor & Analyst Day 2018 (see I&A presentation page 82-83,87,90)

**Long-term outlook 2019–2025 update**

Improved Free Cashflow conversion confirmed despite ongoing capacity build-up

<table>
<thead>
<tr>
<th>Net Income adj.</th>
<th>Steady growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Capital</td>
<td>Growing less than revenues</td>
</tr>
<tr>
<td>CF from investing</td>
<td>Will decline moderately</td>
</tr>
<tr>
<td>CCR*</td>
<td>High double digit %</td>
</tr>
</tbody>
</table>

* Cash Conversion Rate = Free Cashflow/Net Income adj.

- No consumption of prepayments
- Inventory turns will improve
- More FHAs with preferential Cashflow profile

Will decline moderately
- Less payments for intangibles
- Mid-term higher spendings for capacity build-up (PPE) and automation
- R&D capitalization declines as programs enter into service

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MTU’s target is a balanced leverage ratio in the range of 1 x net Debt/EBITDA

**MTU’s Cash Deployment Strategy**

<table>
<thead>
<tr>
<th>Prio</th>
<th>Instrument</th>
<th>2019–2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Investment in organic growth</td>
<td>Limited opportunities for new programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ongoing spendings for capacity build-up</td>
</tr>
<tr>
<td>II</td>
<td>Dividend deployment</td>
<td>Growth stronger than net income</td>
</tr>
<tr>
<td>III</td>
<td>Share buyback programs</td>
<td>Instrument to limit deleveraging and manage dilution</td>
</tr>
<tr>
<td>IV</td>
<td>M&amp;A</td>
<td>No new targets expected</td>
</tr>
</tbody>
</table>
US$ exchange rate / Hedge portfolio

Hedge book as of April 30, 2019 (% of net US$ exposure)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average hedge rate (US$/EUR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.270 (= 85%)</td>
<td>1,070 (= 61%)</td>
<td>540 (= 30%)</td>
</tr>
</tbody>
</table>

Hedging Model

US$ Exposure
- Approx. 75% of US$ revenues are covered with US$ costs via procurement ("natural hedging")
- US$ sensitivity will rise over the next years due to increasing net US$ exposure

Rolling Hedging Model
- Exchange rate analysis and new hedging contracts on a quarterly basis
- Hedging period: 12 following quarters

- For MTU hedging remains an instrument for risk mitigation
- Sensitivity pre hedging: 10 ct move in US$/€ exchange rate has an impact of ~ € 100m on EBIT (2019)
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Impact of digitization on MTU’s business model

Digitization will not fundamentally alter the business model of MTU in the medium term but provides with opportunities to improve competitiveness further within the industry.

For companies in B2B industries, process improvements are often the focus of attention.

In B2C industries, digitization partly leads to a serious change in the business model.
Digitization@ MTU focus on 4 areas of activity

- Work 4.0
  - Robotic process automation
  - Unified collaboration & communication
  - E-learning
  - IT security

- MRO 4.0
  - Predictive maintenance (ETM)
  - Predictive analytics

- Production 4.0
  - Intelligent machine control
  - Optimized material flow/Logistics 4.0

- Technology 4.0
  - Virtual engine
  - Material & manufacturing simulation
  - Additive manufacturing
  - IT security
  - Digital twin
  - Unified collaboration & communication

- Production
  - Aftermarket
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As a company, we take responsibility for our products, employees, customers, the environment and our society.

**Product responsibility**
Eco-efficient engines / Clean Air Engine, sustainable production and maintenance procedures, European SRIA standards.

**Responsibility toward employees**
Occupational health & safety, work-life balance, development of young talent.

**Environmental protection**
MTU climate strategy, environmental management on the shop floor.

**Sustainable business practices**
Compliance, corporate governance, risk management, ratings & rankings.

**Commitment to society**
Economic cooperation / support of universities and research institutes, local sponsoring.
Contents

1. Company Overview
2. Commercial OEM Business
3. Military OEM Business
4. Commercial MRO Business
5. Financials & Outlook
6. Digitization @ MTU
7. Corporate Responsibility
8. Appendix
Q1 2019: Group revenues up 11%; EBIT adj margin at 16.6%

Financial figures Q1 2019

**Revenues**

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>[in m €]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial OEM</td>
<td>618</td>
<td>655</td>
</tr>
<tr>
<td>Military OEM</td>
<td>91</td>
<td>105</td>
</tr>
<tr>
<td>Total OEM</td>
<td>319</td>
<td>386</td>
</tr>
<tr>
<td>Total Group</td>
<td>790</td>
<td>860</td>
</tr>
</tbody>
</table>

**EBIT adjusted**

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>[in m €]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial OEM</td>
<td>52</td>
<td>57</td>
</tr>
<tr>
<td>Military OEM</td>
<td>123</td>
<td>131</td>
</tr>
<tr>
<td>Total OEM</td>
<td>175</td>
<td>188</td>
</tr>
<tr>
<td>Total OEM Segment</td>
<td>188</td>
<td>209</td>
</tr>
<tr>
<td>Commercial MRO</td>
<td>123</td>
<td>134</td>
</tr>
<tr>
<td>Total Group</td>
<td>123</td>
<td>134</td>
</tr>
</tbody>
</table>

**Net Income adjusted**

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>[in m €]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Group</td>
<td>123</td>
<td>134</td>
</tr>
</tbody>
</table>

**Free Cashflow**

<table>
<thead>
<tr>
<th></th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>[in m €]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Group</td>
<td>83</td>
<td>141</td>
</tr>
</tbody>
</table>

*) Consolidated number
**MRO (on US basis): organic growth +9%
*** Commercial OEM (on US basis): +12%

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MTU’s credit ratings represent investment grade

MTU is rated by two credit rating agencies:

<table>
<thead>
<tr>
<th>Rating Agency</th>
<th>Rating</th>
<th>Outlook</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moody’s (Long term)</td>
<td>Baa3</td>
<td>stable outlook</td>
<td>March 12, 2018</td>
</tr>
<tr>
<td>Fitch (Long term)</td>
<td>BBB</td>
<td>stable outlook</td>
<td>March 01, 2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loan Details</th>
<th>Amount</th>
<th>Coupon</th>
<th>Issue date</th>
<th>Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convertible Bond</td>
<td>500 m€</td>
<td>0.125%</td>
<td>17 May 2016</td>
<td>17 May 2023</td>
</tr>
<tr>
<td>Notes (Private Placement)</td>
<td>100 m€</td>
<td>3.55%</td>
<td>12 June 2013</td>
<td>12 June 2028</td>
</tr>
<tr>
<td>Note purchase agreement</td>
<td>30 m€</td>
<td>Variable interest rate corresponding to the 6-month Euribor rate plus a percentage margin</td>
<td>28 March 2014</td>
<td>27 March 2021</td>
</tr>
<tr>
<td>Revolving Credit Facility</td>
<td>600 m€</td>
<td>Customary market reference rates plus an additional margin; unused credit facilities are subject to a loan commitment fee</td>
<td>28 Oct. 2021</td>
<td></td>
</tr>
</tbody>
</table>
With PW1900G and PW800 two more engine programs entered service in 2018

Development milestones of new engine programs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First engine to test</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tested in flying test-bed</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Engine certification</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2019</td>
</tr>
<tr>
<td>First flight</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2019</td>
</tr>
<tr>
<td>Entry into service</td>
<td>✓</td>
<td>✓</td>
<td>2020</td>
<td>2020</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2020</td>
</tr>
</tbody>
</table>

* T408: Certification of whole aircraft system after flight testing
The GTF competitive advantage

The GTF concept achieves a 16% reduction in fuel burn versus the V2500 predecessor and a significant competitive advantage over the DDTF

GTF relative to Direct Drive Turbofan:
- 25% less stages
- 45% less airfoils
- lower cycle temperature
  = lower maintenance cost
- higher propulsive efficiency
- higher low spool component efficiencies
- shorter & lighter
  = 3% less fuel burn
- 3 to 4 dB quieter (EPNdB, cum.)
## Commercial engine fleet

<table>
<thead>
<tr>
<th>Aircraft Segment</th>
<th>Engine</th>
<th>Program Share</th>
<th>Aircraft Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Widebody</strong> (50 – 120 klb)</td>
<td>GP7000</td>
<td>22.5%</td>
<td>A380</td>
</tr>
<tr>
<td></td>
<td>PW4000G</td>
<td>12.5%</td>
<td>B777</td>
</tr>
<tr>
<td></td>
<td>CF6-80C</td>
<td>9.1%</td>
<td>B747-400, B767, Boeing MD-11, A310</td>
</tr>
<tr>
<td></td>
<td>Genx</td>
<td>6.6%</td>
<td>B787 Dreamliner, B747-8</td>
</tr>
<tr>
<td></td>
<td>CF6-80E</td>
<td>n.n.</td>
<td>A330</td>
</tr>
<tr>
<td></td>
<td>CF6-50/80A</td>
<td>n.n.</td>
<td>DC 10-30, B767, A310</td>
</tr>
<tr>
<td></td>
<td>GE9X</td>
<td>4%</td>
<td>B777X</td>
</tr>
<tr>
<td><strong>Narrowbody</strong> (20 – 50 klb)</td>
<td>PW2000</td>
<td>21.2%</td>
<td>B757, C-17</td>
</tr>
<tr>
<td></td>
<td>PW1100G-JM</td>
<td>18%</td>
<td>A320neo</td>
</tr>
<tr>
<td></td>
<td>PW6000</td>
<td>18%</td>
<td>A318</td>
</tr>
<tr>
<td></td>
<td>V2500</td>
<td>16%</td>
<td>A320 family, Boeing MD-90</td>
</tr>
<tr>
<td></td>
<td>JT8D-200</td>
<td>12.5%</td>
<td>Boeing MD-80 range</td>
</tr>
<tr>
<td><strong>Regional Jets</strong> (13 – 24 klb)</td>
<td>PW1500G</td>
<td>17%</td>
<td>Bombardier CSeries</td>
</tr>
<tr>
<td></td>
<td>PW1700G/1900G</td>
<td>15-17%</td>
<td>Embraer E-Jet Gen 2</td>
</tr>
<tr>
<td></td>
<td>PW1200G</td>
<td>15%</td>
<td>MRJ</td>
</tr>
<tr>
<td><strong>Business Jets</strong> (3 – 16 klb)</td>
<td>PW300</td>
<td>25% (PW305/306)</td>
<td>Learjet 60, Do328 JET, Gulfstream G200, Hawker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15% (PW307)</td>
<td>1000, Dessault Falcon 7X, Cessna Sovereign</td>
</tr>
<tr>
<td></td>
<td>PW500</td>
<td>25%</td>
<td>Cessna Bravo, Cessna Excel</td>
</tr>
<tr>
<td></td>
<td>PW800</td>
<td>15%</td>
<td>Gulfstream G500, G600</td>
</tr>
</tbody>
</table>
# Military engine fleet

<table>
<thead>
<tr>
<th>Aircraft Segment</th>
<th>Engine</th>
<th>Program Share</th>
<th>Aircraft Application</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fighter</td>
<td>EJ200</td>
<td>30 %</td>
<td>Eurofighter Typhoon</td>
<td></td>
</tr>
<tr>
<td>Aircraft</td>
<td>RB199</td>
<td>40 %</td>
<td>Panavia Tornado</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F414</td>
<td>4.4 %</td>
<td>F414: F/A-18 E/F Super Hornet; EA-18G Growler</td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>TP400</td>
<td>22.2 %</td>
<td>A400M</td>
<td></td>
</tr>
<tr>
<td>Aircraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helicopter</td>
<td>MTR390</td>
<td>40 %</td>
<td>Eurocopter Tiger</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T408</td>
<td>18.4 %</td>
<td>CH-53K (US-HTH)</td>
<td></td>
</tr>
</tbody>
</table>
### Commercial MRO business:

Top 10 engine MRO providers 2015 – Estimated number of engines under contract

MTU Maintenance is the largest independent and under the Top 5 MRO providers

<table>
<thead>
<tr>
<th>MRO Provider</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GE Engine Services</td>
<td>~22 %</td>
</tr>
<tr>
<td>2. Rolls-Royce</td>
<td>~11 %</td>
</tr>
<tr>
<td><strong>3. MTU Maintenance</strong></td>
<td>~10 %</td>
</tr>
<tr>
<td>4. Pratt &amp; Whitney</td>
<td>~7 %</td>
</tr>
<tr>
<td>5. Lufthansa Technik</td>
<td>~6-7 %</td>
</tr>
<tr>
<td>6. Snecma</td>
<td>~4-5 %</td>
</tr>
<tr>
<td>7. Air France / KLM</td>
<td>~4 %</td>
</tr>
<tr>
<td>8. Delta TechOps</td>
<td>~3 %</td>
</tr>
<tr>
<td>9. American Airlines</td>
<td>~2-3 %</td>
</tr>
<tr>
<td>10. Standard Aero</td>
<td>~2 %</td>
</tr>
</tbody>
</table>

* Source: ACAS as of 06/2015; *commercial jets, excl. turboprops, business jets and military tanker/transport applications
Financial calendar 2019 & IR contact

February 20, 2019
Conference Call
Full year results 2018

April 11, 2019
Annual General Meeting
for the fiscal year 2018

April 30, 2019
Conference Call
Q1 2019 results

July 25, 2019
Conference Call
Q2 2019 results

October 31, 2019
Conference Call
Q3 2019 results

November 28, 2019
Investor & Analyst Day

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