



EUROPEAN NETWORK OF  
DEFENCE-RELATED REGIONS

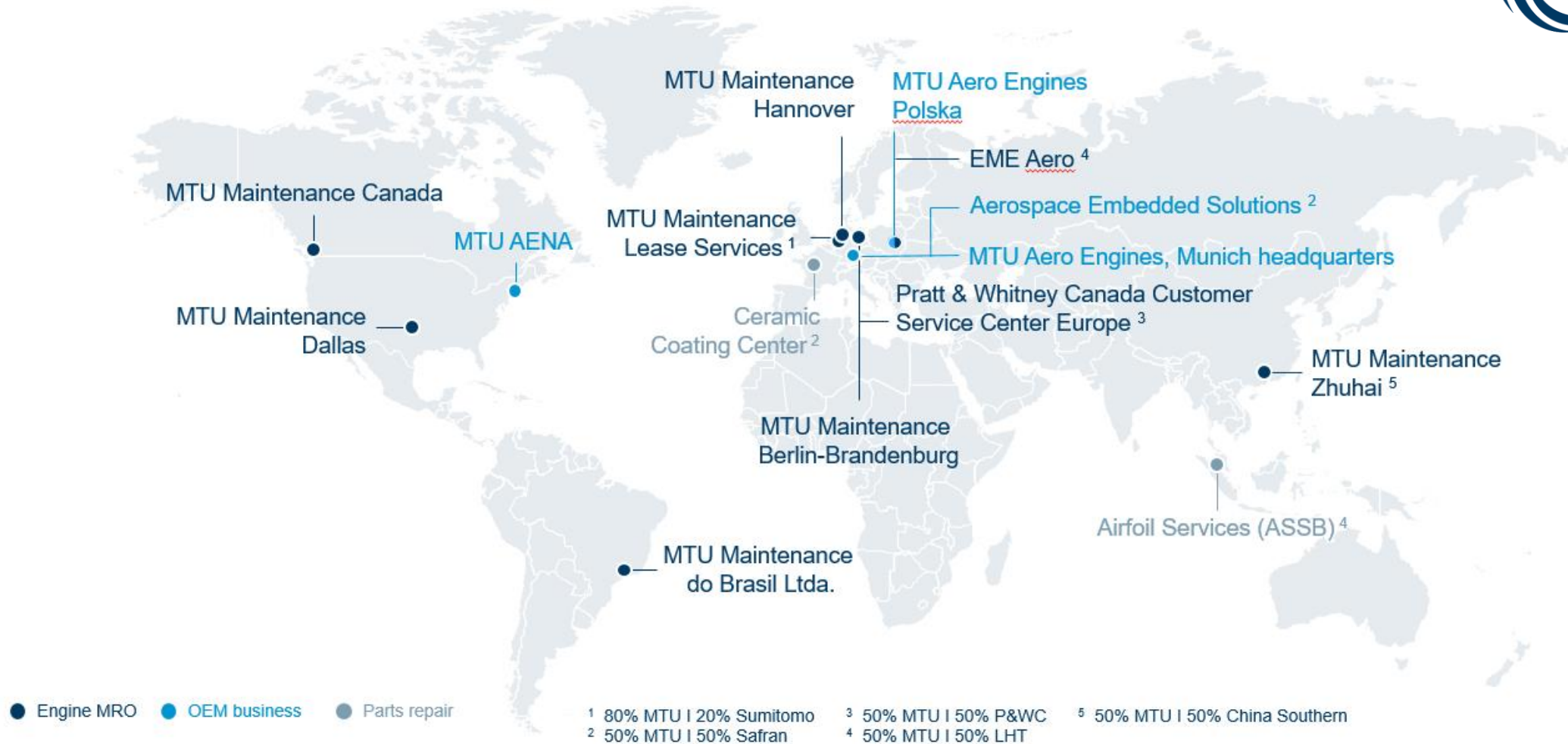
# Technical and soft skills in aerospace and defence industry, including new skills driven by emerging technologies



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Rzeszów, 21-22.10.2021

# Close to the customers



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# Operation model based on three pillars



## Commercial OEM business



**Share of total revenues ~ 26 %**

Balanced product portfolio in all thrust categories

Decades of partnership with OEMs

## Military OEM business



**Share of total revenues ~ 12 %**

European and U.S. engine programs

Full system capability

Leading partner of the German Armed Forces

## Commercial MRO business



**Share of total revenues ~ 62 %**

Services: maintenance, leasing and asset management

Global network

Direct customer business, partner of OEMs and airlines

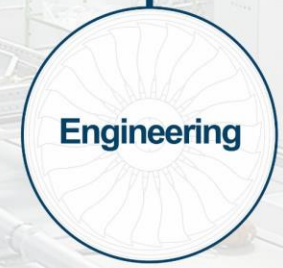
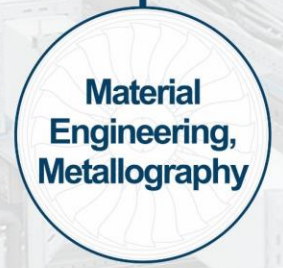
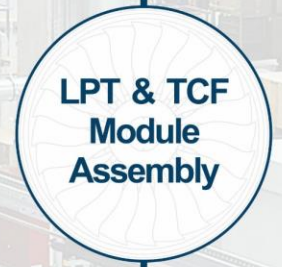
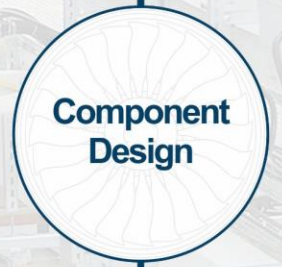
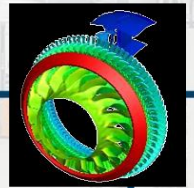
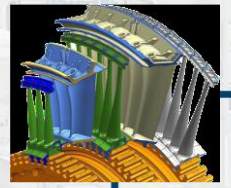
**MTU group fiscal year 2020:**

**Revenue € 3.977 billion / EBIT € 0.42 billion**

# Who we are ?

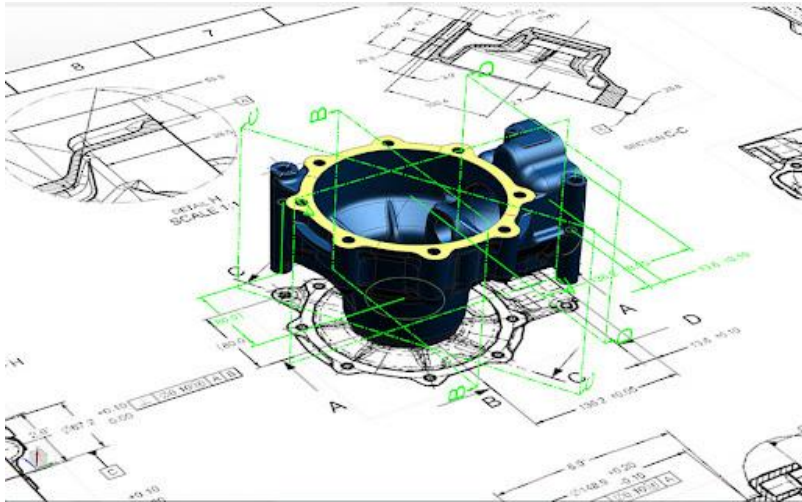


## MTU Aero Engines Polska



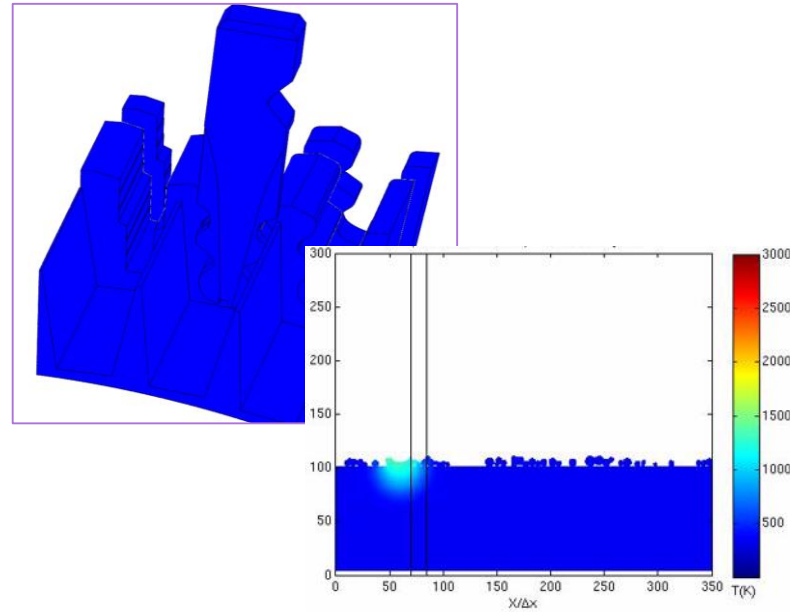
# Engineering development

## Model based definition



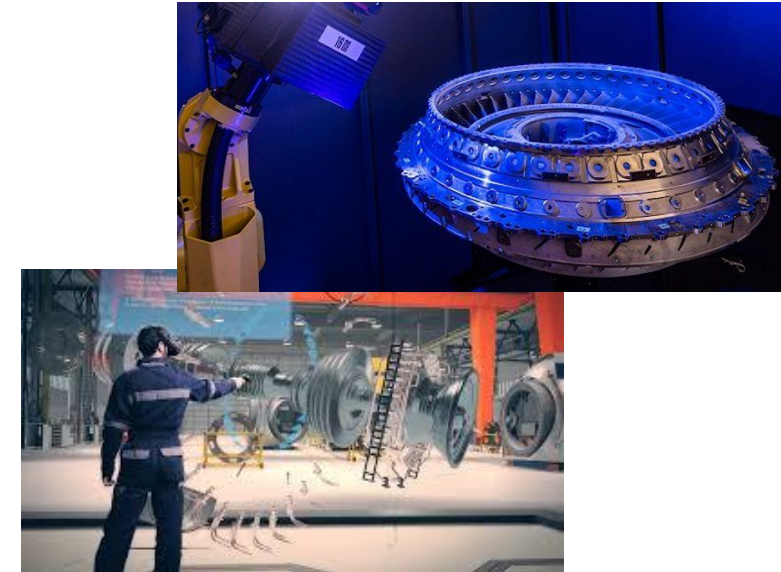
Shift from 2D documentation to fully described 3D model

## Simulation methods



Pre-production simulations  
New materials / manufacturing methods

## 3D scanning / VR / ER

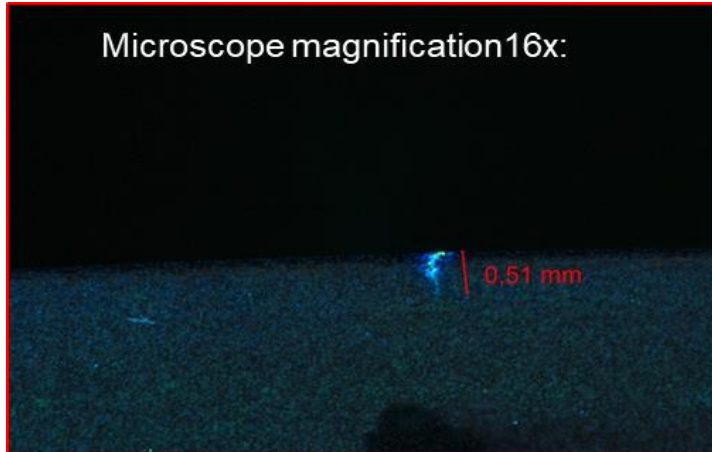


Usage of modern visualization technology in design, assembly and production

# Operation / Production / IT development



## Automatic Inspections



Automated FPI systems to allow identification and measurement of small indications and improve POD (Probability of Detection) from 65% to above 95%

## Manufacturing Engineering

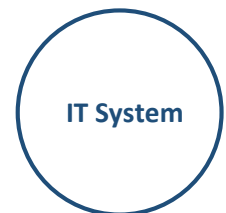


Development of Visual systems supporting assembly operations  
Preventive predictive maintenance including big data analysis to define root cause & corrective action based on attributive and numerical data.  
Automation of production lines including robot-human interfaces

## IT



### SECURITY



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# People

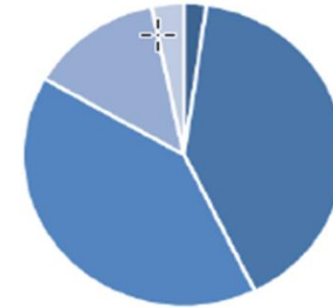
Highly-skilled workforce



930 employees

180 Engineering

Age Structure



■ Up to 25 ■ 26-35 ■ 36-45 ■ 46-55 ■ over 55

Average age: 36 years



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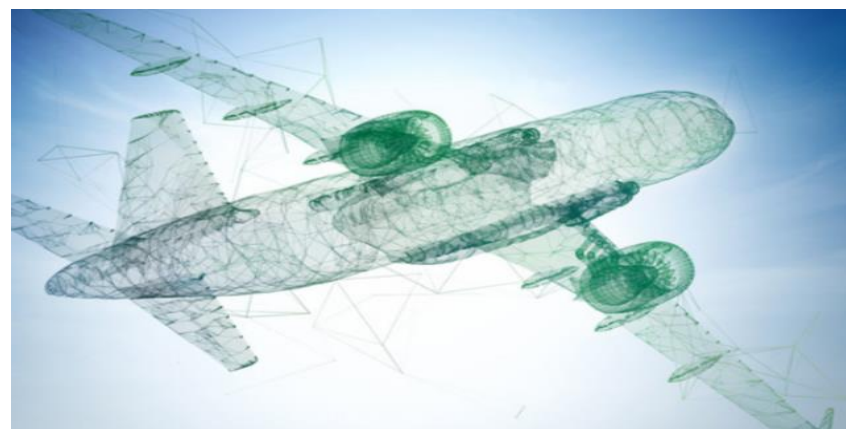
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# Yesterday

# Today

# Tomorrow

...



# Yesterday



## Company expectations!

We have looked for defined competences, we had a choice

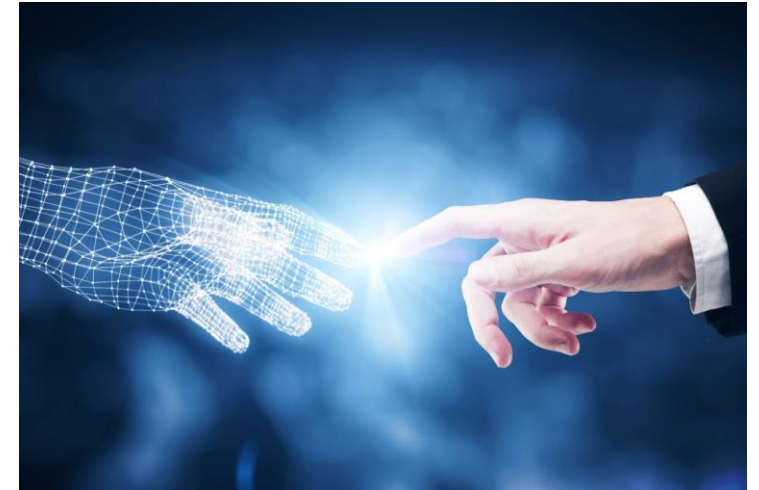
# Today



## Flexibility!

- How to find & attract potentials?
- How in a fast way pass and share know-how?
- Focus on efficient learning methods!

# Tomorrow



## Human & artificial team members together!



# Tomorrow focus



## The rise of automation

- 85 million jobs by 2025
- employees will take **more strategic and high-level roles**

## New technologies mean new skills

All these **new technologies** such as AL, big data analytics, blockchain and robotics require **corresponding skills**  
- all of which are new and in short supply

## Emerging roles

- as technologies become more advanced, new roles will develop to **supervise, program, and troubleshoot machines**
- 97 million new roles may emerge that are more adapted to **“the new division of labor between humans, machines and algorithms”**

[The Future of Jobs Report](#)  
by the World Economic Forum, Industry 4.0, 5.0



## The development of more technologies

We cannot predict what new technologies will be developed = we can't foresee what skills those technologies will require.

## Industry 4.0: Skills for the future of work



# TOP 10 soft skills

Technology  
design and  
programming

Analytical  
thinking and  
innovation

Complex  
problem-  
solving

Active learning  
and learning  
strategies

Resilience,  
stress  
tolerance  
and flexibility

Technology  
use,  
monitoring  
and control

Critical  
thinking and  
analysis

Reasoning,  
problem -  
solving and  
ideation

Creativity,  
originality and  
initiative

Leadership  
and social  
influence

# ... being more creative and agile



New  
technology

... ensure that employees are not left behind as we meet the future of work



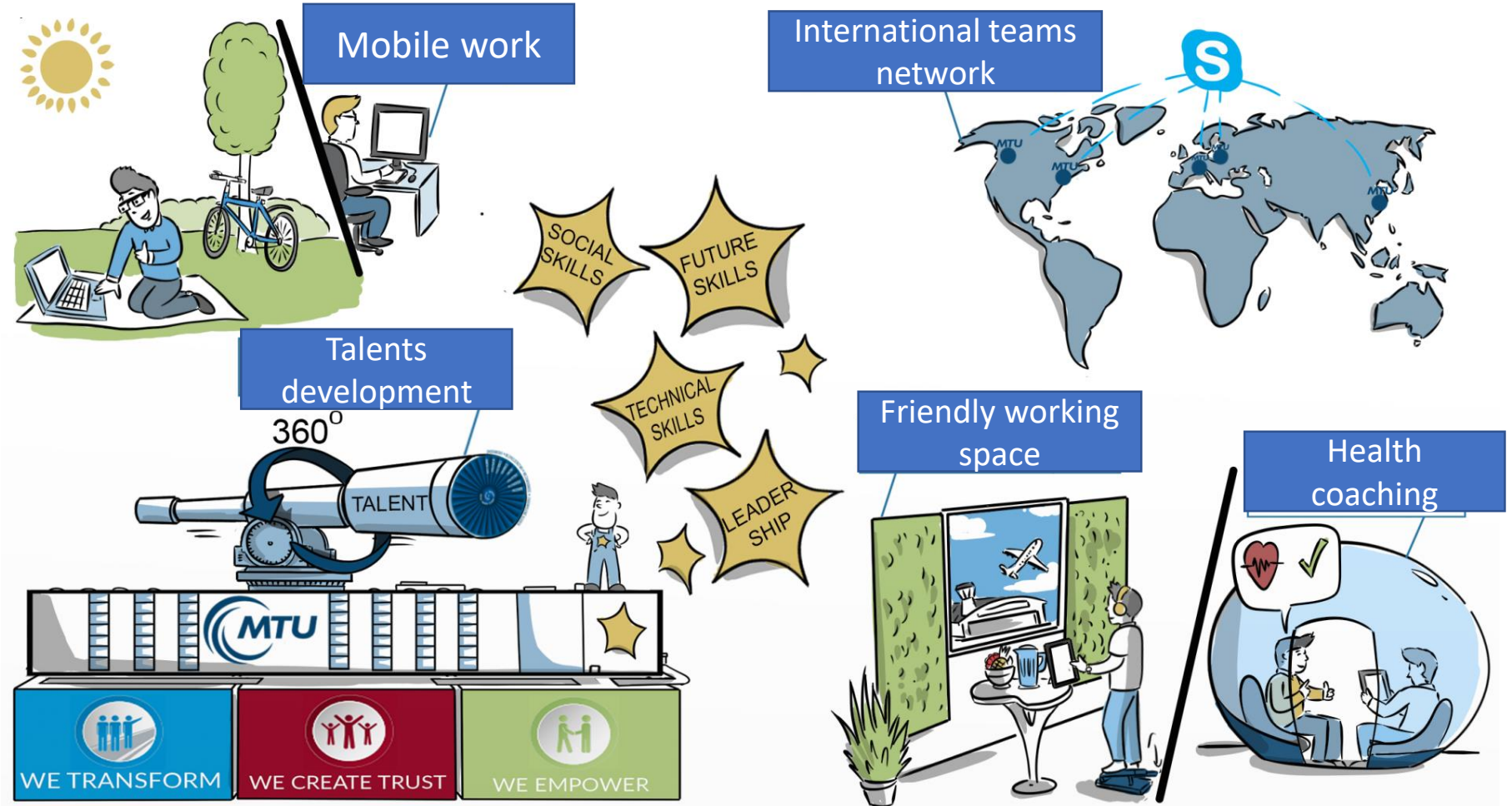
A change in  
mindset

... shift the strategy from recruiting / retaining top performers to identifying emerging roles

[The Future of Jobs Report](#) by the World Economic Forum

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Vision 2025

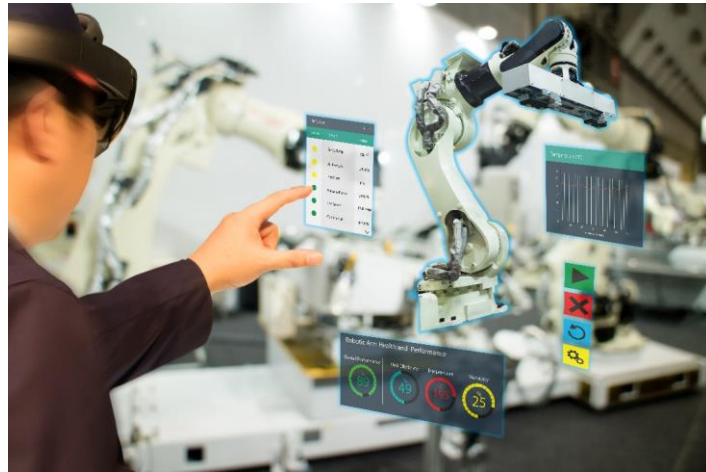


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# MTU Aero Engines Polska

Future learning



## Training Center

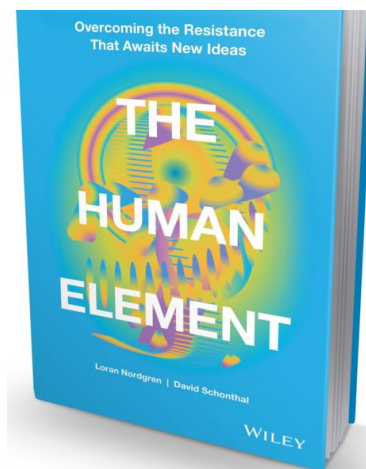
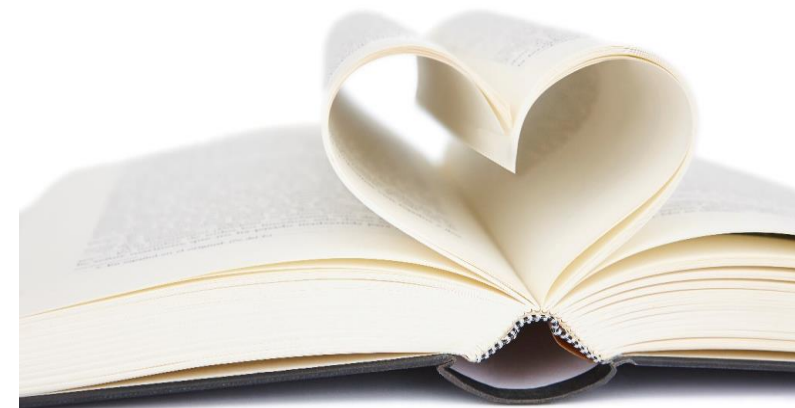
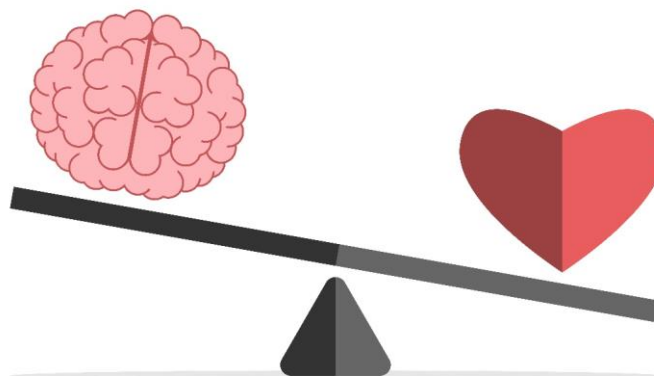
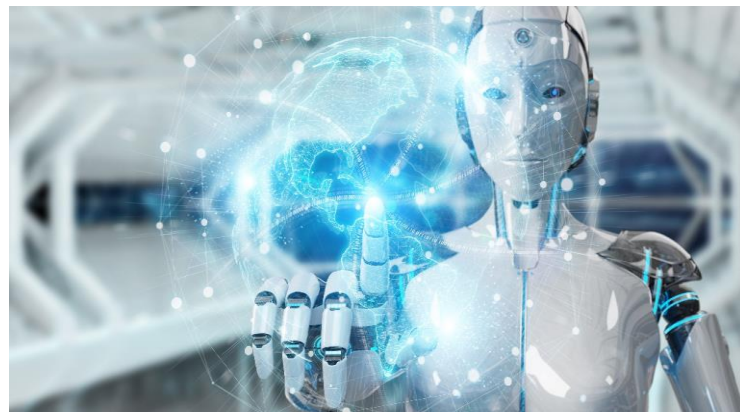
- Support for Training Owners in training material creation
- Development of training methods
- Searching of new training methods
- Encouraging to use modern training methods
- External training suppliers selection



# We shape the future of aviation!



# Final reflection





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# Thank you for your attention!



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