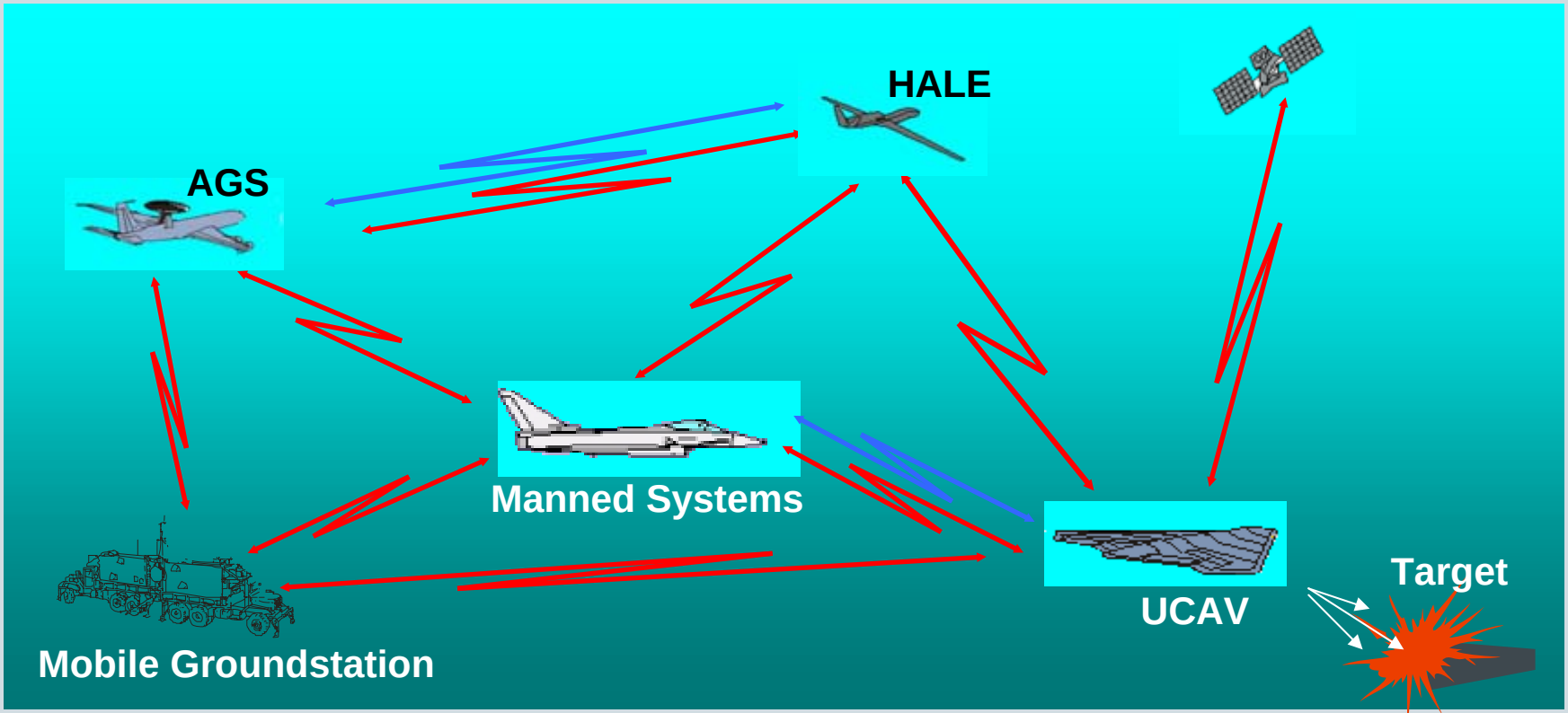
[illegible]

	Datum	2007-2010	Vision 2020 (EU: ACARE)	US (ATE-Vision) 2010	US (ATE-Vision) 2025
Fuel Consumption/CO_2	Base	-7-10% FB	- 50% incl. Airframe	-25%	-50%
Noise, rel Stage 3, cum.	-(14-18) dB	-30-33 dB	- 40 dB	-45 dB	-75 dB
Sfc (Engine)	Basis	8-12%	-(15-20) %	-	-
Thrust-to-weight, PPS	3,6-4,5	>>4	>>4	-	-
NO_X Emissions rel ICAO'96	-30%	-40+ %	-80 %	-70%	-80%

ACARE: Advisory Council of Aeronautical Research in Europe
ATE: Aerospace Technology Enterprise



Sensor Datalink

Control Datalink

AGS Air to Ground Surveillance

HALE High Altitude Long Endurance

UCAV Unmanned Comabt Aerial Vehicle

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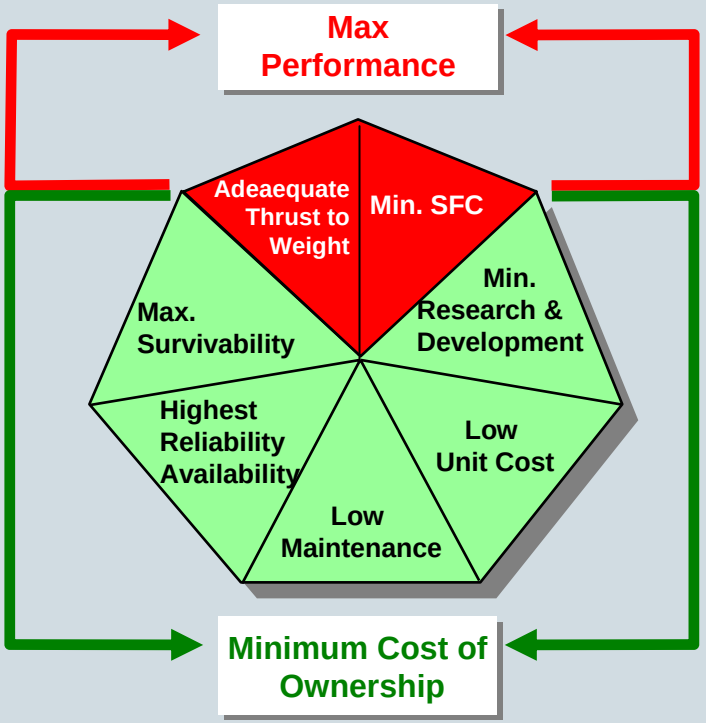
- Small tank& Installation
- Small A/C Size
- Manoevrability
- Survivability , Speed

- Enhanced Thrust
- Supercruise w/o afterburner
- Compact design (T/W)

- Damage Tolerant Design
- Durable Design Concepts



- Small tank
- Small A/C Size

- Civil Cores
- No Afterburner
- Moderate Temperatures
- High Bypass ratios

- Low Signature Inst
- High BPR
- 2D Nozzles

- Strongly Extended Component Design Life
- Extensive Health, Life 6 & Usage Monitoring

… This is MTU Aero Engines

… Future challenges commercial & military engines

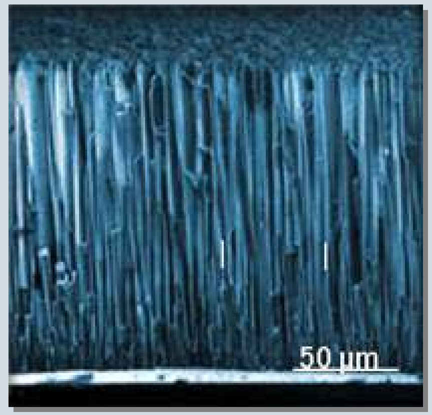
… Technological answers

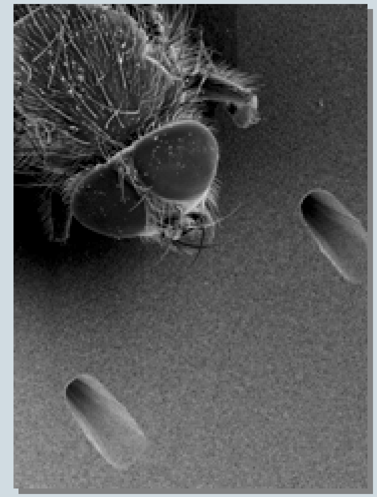
→ Trends of Basic Technologies, Consequently Matched to New Products

→ Components

→ New Engine Systems & Concepts

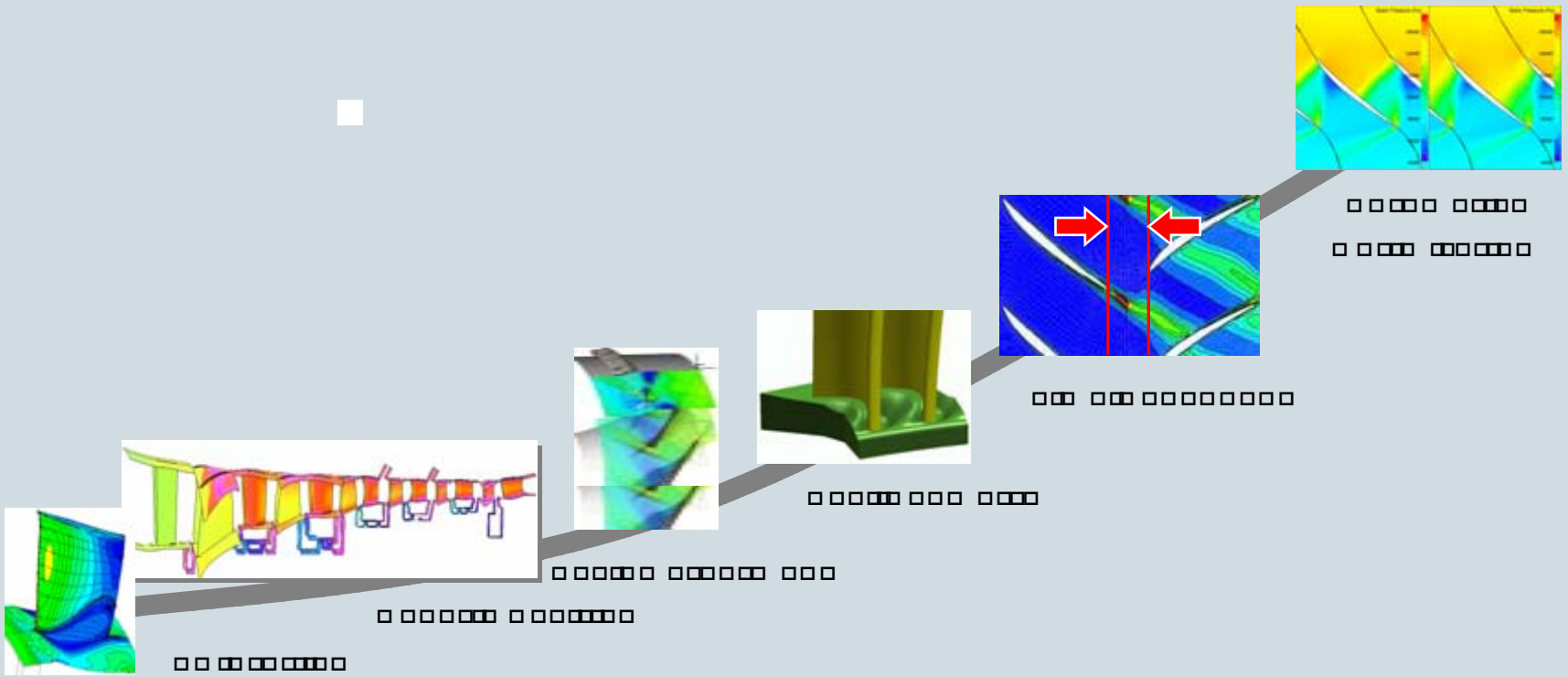
** HFW= High Frequency Welding





* ECM = Electro-Chemical-Machining

**TBC = Thermal Barrier Coating



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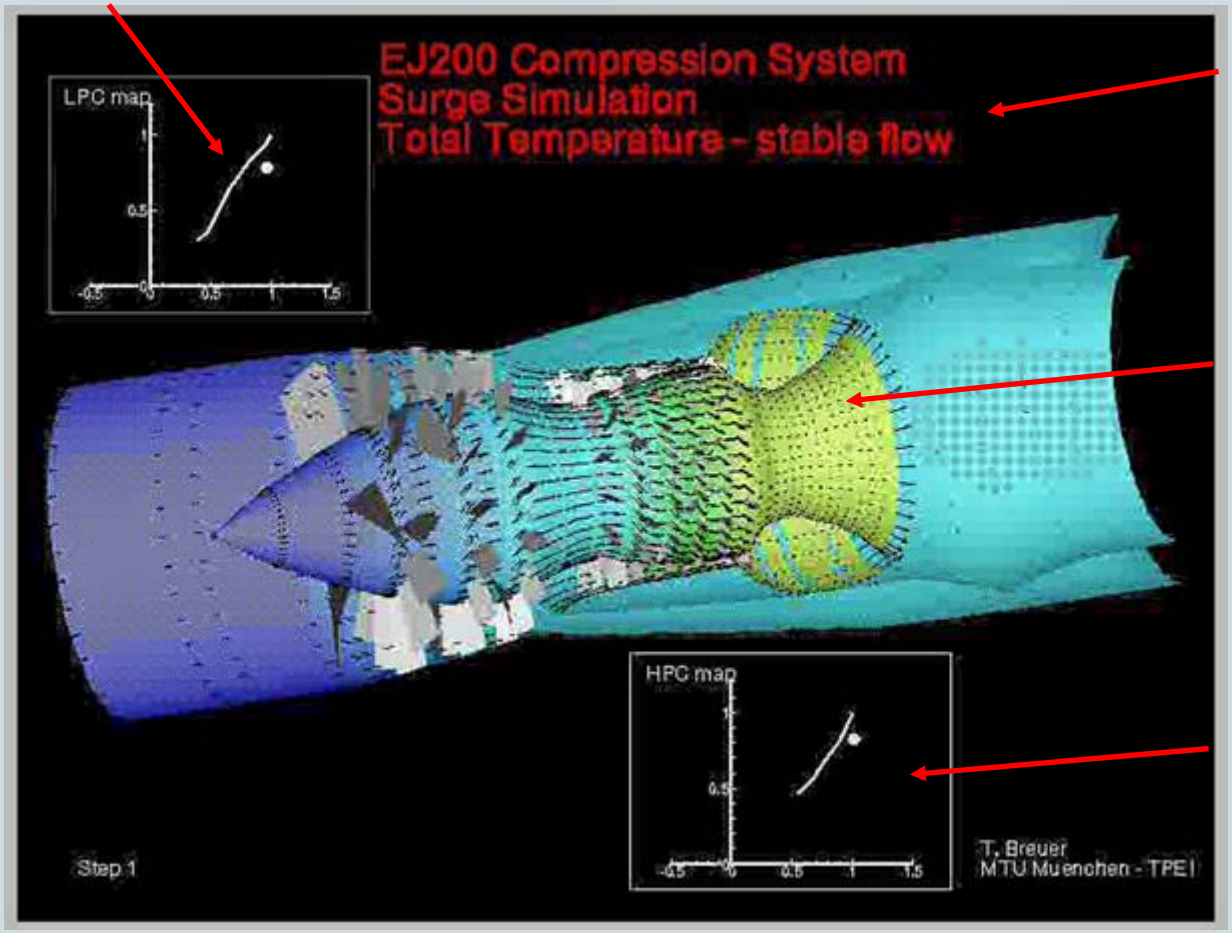
LPC compressor map (surge line, operating point)



State of system

Compression system model

HPC compressor map (surge line, operating point)

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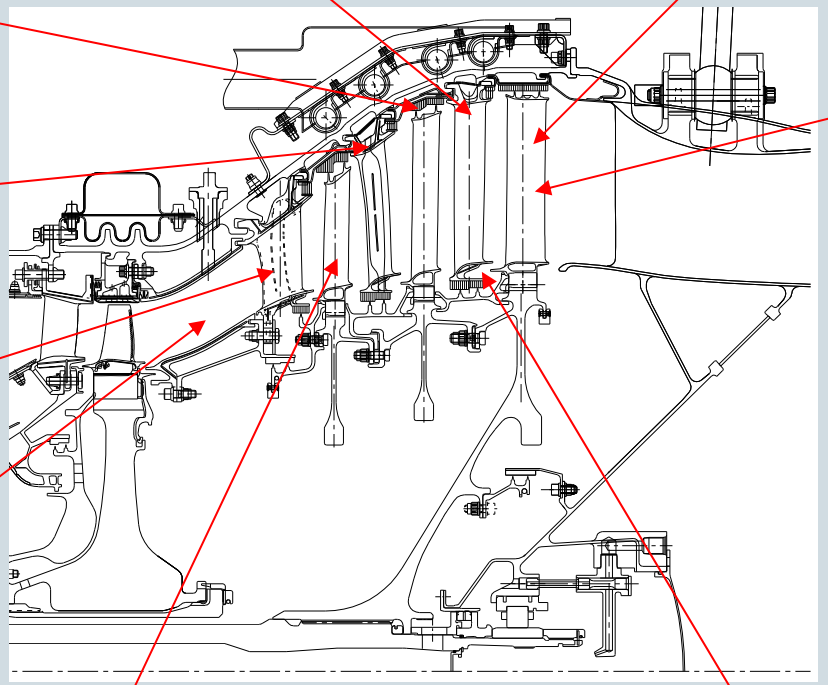
High Lift Design
Low-Re Aerodynamics
Innovative Sealing
TiAl Blades
Contoured Platforms
Active & Passive
Boundary Layer Control
Innovative Cooling
Thin Solid Blades
HPT-LPT Interaction
Integral Structures
Vanes & Casings
Low Cost Materials
Innovative Cavities