Austrian Ministry for Transport, Innovation and Technology

CLEANSKY

FFG

JTI Workshop
Thursday 3rd of February, 2011

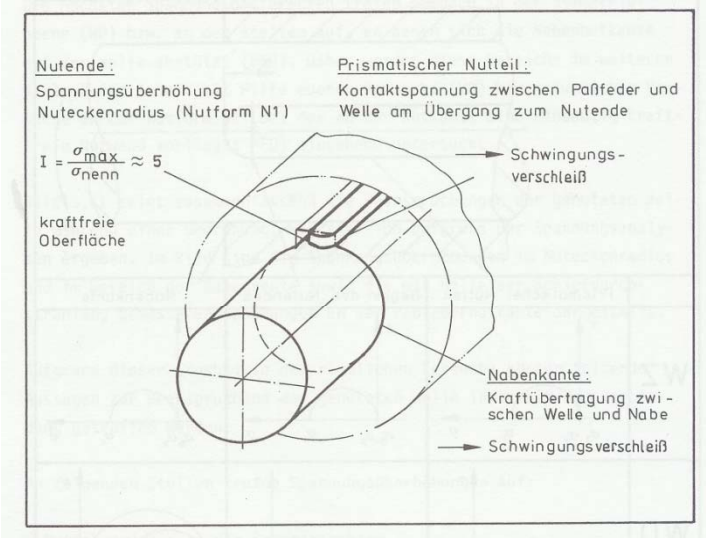
TRANSMISSIONS FOR AVIATION

Univ.-Prof. Dipl.-Ing. Dr.-Ing. Michael Weigand

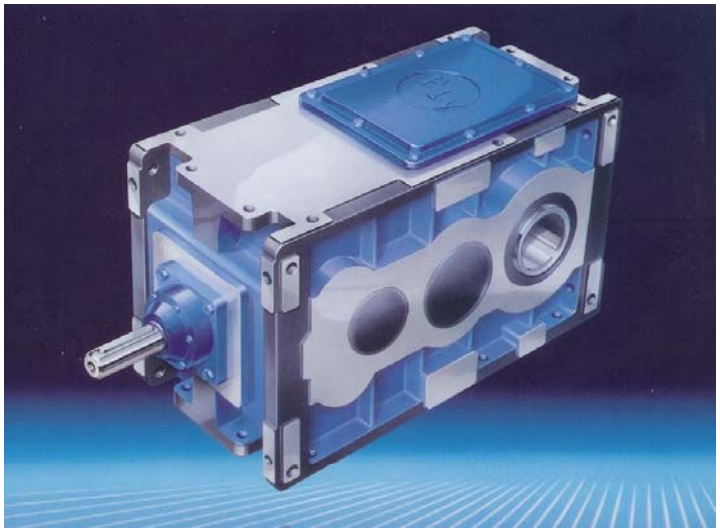
Institut für Konstruktionswissenschaften und Technische Logistik

TU WIEN

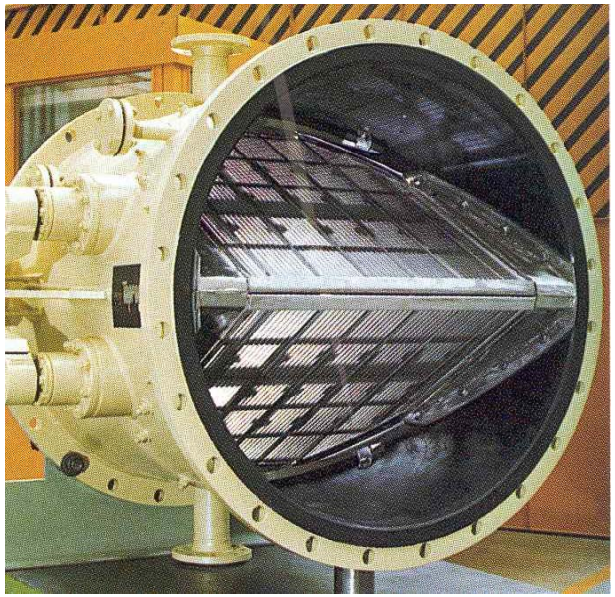
Forschungsbereich
Maschinenelemente
und Rehabilitationstechnik



TECHNISCHE UNIVERSITÄT DARMSTADT - Maschine Design



PIV - Gearboxes



Taprogge - Power Station Equipment

ZF – Aviation (Transmissions, Test Stands)

Classes / Courses 307 - 3 for Bachelor (E033 245) und Special Focus Design for Master (E066 445)											
according to official Course Tables Mechanical Engineering, dated 01.10.2006, Version 2 valid since 01.10.2008											
Semester	BACHELOR 1	BACHELOR 2	BACHELOR 3	BACHELOR 4	BACHELOR 5	BACHELOR 6	MASTER 1	MASTER 2	MASTER 3	MASTER 4
	Techn. Drawings CAD	*Basics of Design*	Basics of Machine Elements	Basics of Machine Elements		Bachelor Thesis	Machine Design	Machine Design		Master Thesis
	VU 2/307-1	*VO 2/307-1*	VO 3	KU 3		PA 6	VO 2	KU 5		
	307.052	*307.016*	307.061	307.062		307.058	307.066	307.070		
		Techn. Drawings CAD					Machine Design			
		KU 3/307-1					RU 1			
		307.017					307.067			
							Machine Design	Trans-missions (for Aviation)	Trans-missions (for Aviation)	
VO = Lectures / KU/RU = Exercises / LU = Laboratory Courses							LU 2	VO 2	SE 2	
SE = Seminar / PA = Project work							307.068	307.082	307.083	
							Machine Design	Trans-missions (for Aviation)	Trans-missions (for Aviation)	
							SE 2	LU 2	PA 5	
							307.069	307.084	307.085	
								Special Machine Elements		
								VO 2		
								307.063		
SWS total:			3	3		6	6	11	7	

Institut für Konstruktionswissenschaften und Technische Logistik

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Special Courses about Transmissions for Aviation

TECHNISCHE UNIVERSITÄT WIEN
Vienna University of Technology

Institut für Konstruktionswissenschaften und Technische Logistik
Forschungsbereich Maschinenelemente und Rehabilitationstechnik

FVA
Forschungsvereinigung Antriebstechnik e.V.

DGLR
Deutsche Gesellschaft für Luft- und Raumfahrt Lilienthal-Oberth e.V.

AHS INTERNATIONAL
THE VERTICAL FLIGHT SOCIETY

AIRMED PRAHA 2008

AIR MED WORLD CONGRESS BRIGHTON 2011
24-27 MAY

IPLC 2008
International Powered Lift Conference
Tuesday 22 – Thursday 24 July 2008
No.4 Hamilton Place, London W1J 7BQ, UK
ROYAL AERONAUTICAL SOCIETY 1866

ILA Berlin - Brandenburg

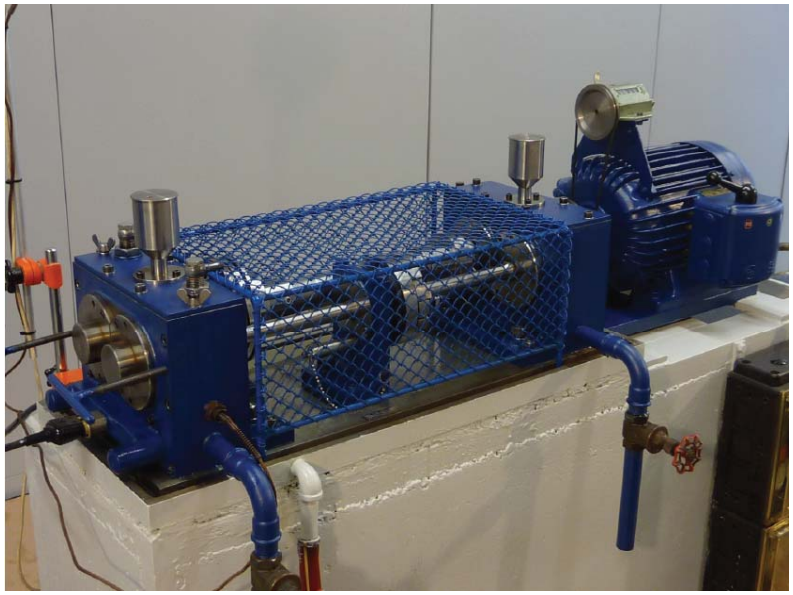
AIRTEC
INTERNATIONAL AEROSPACE SUPPLY FAIR
NOVEMBER 2 – 4, 2010
EXHIBITION CENTER
FRANKFURT / MAIN, GERMANY

TU UNIVERCITY 2015

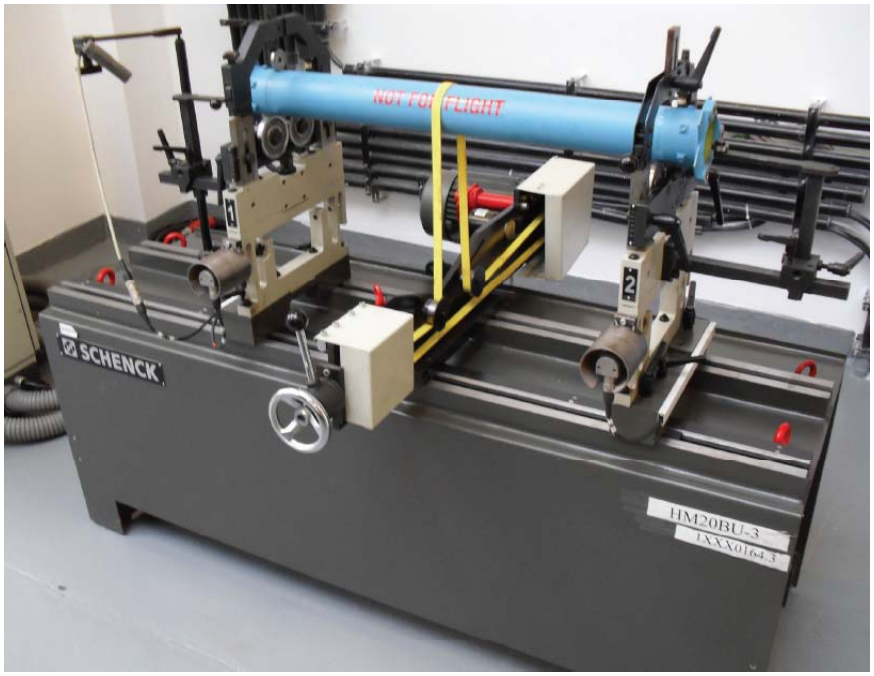
Wir gestalten die Zukunft der Technik

Mechanical Engineering - Institute:
Complete renewal of the building till April 2011

Mechanical Engineering - Laboratory: General View after Re-Opening in July 2009



FZG Teststand



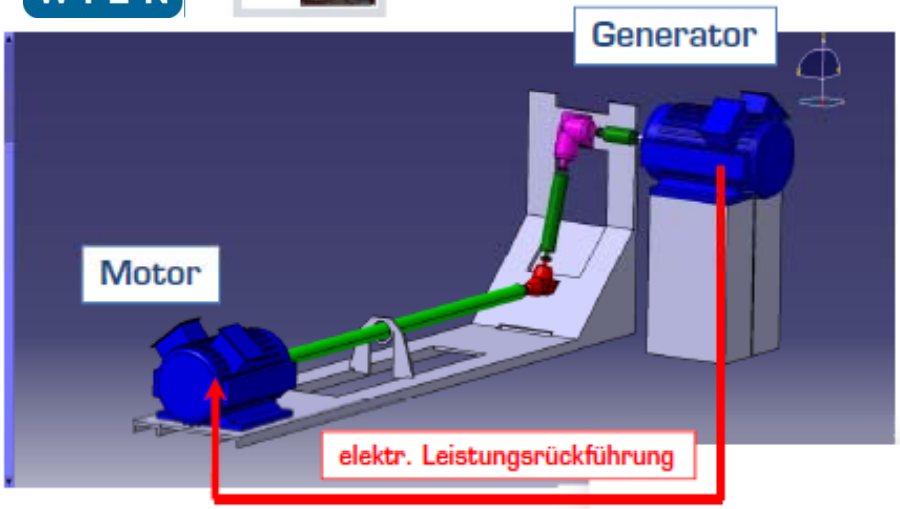
SCHENCK Balancing Machine

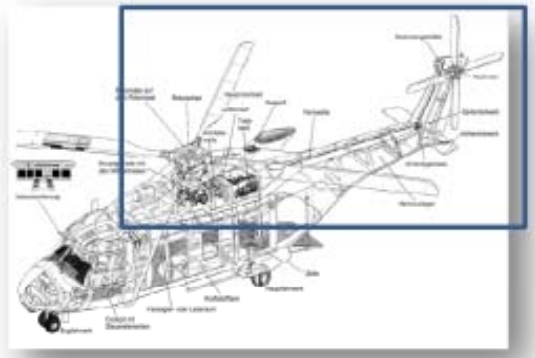
Mechanical Engineering – Laboratory

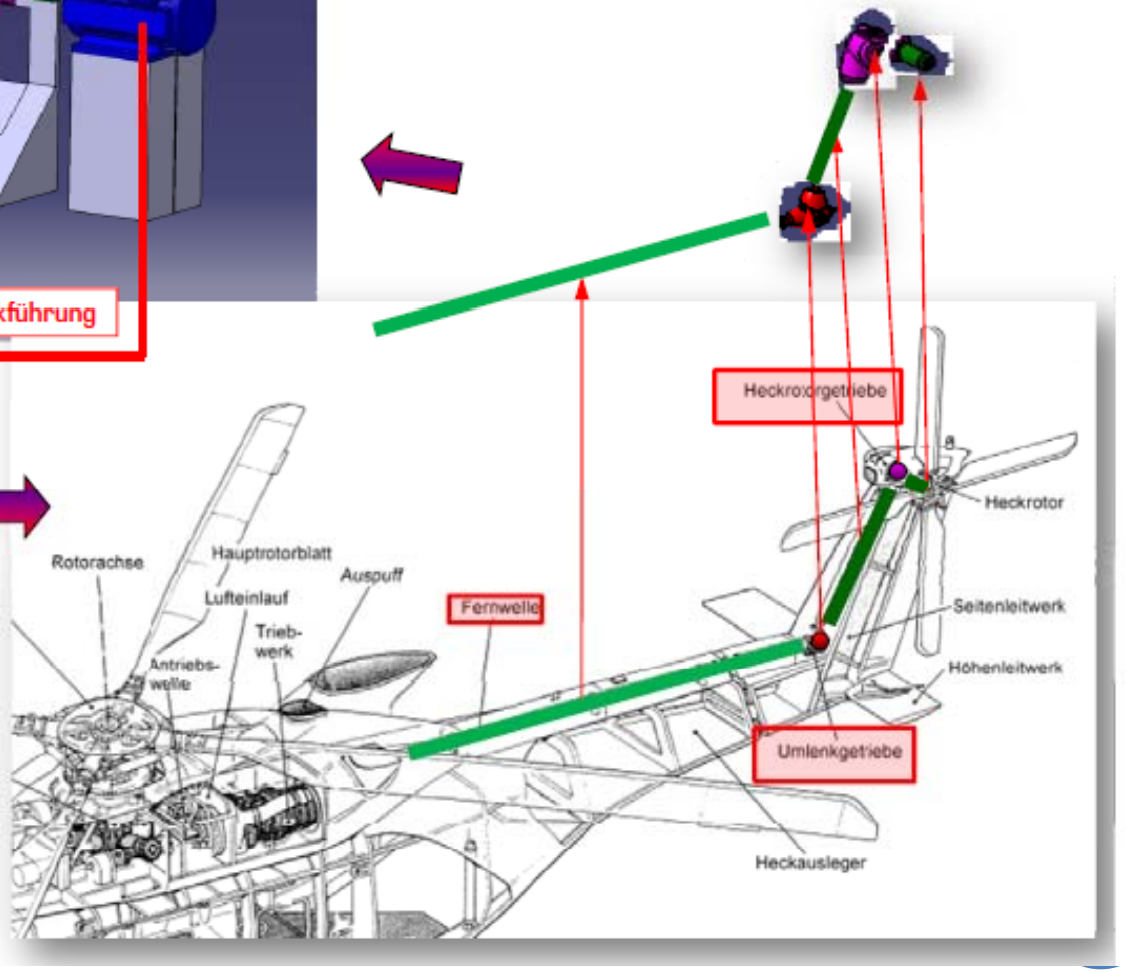
Mechanical Engineering – Laboratory: Tail drive shaft testing

P-0460 Universalprüfstand für Antriebskomponenten
- in Realisierung -

Leistung: P ≈ 300 kW
Drehzahl: n_{an} ≈ 6500 min $^{-1}$

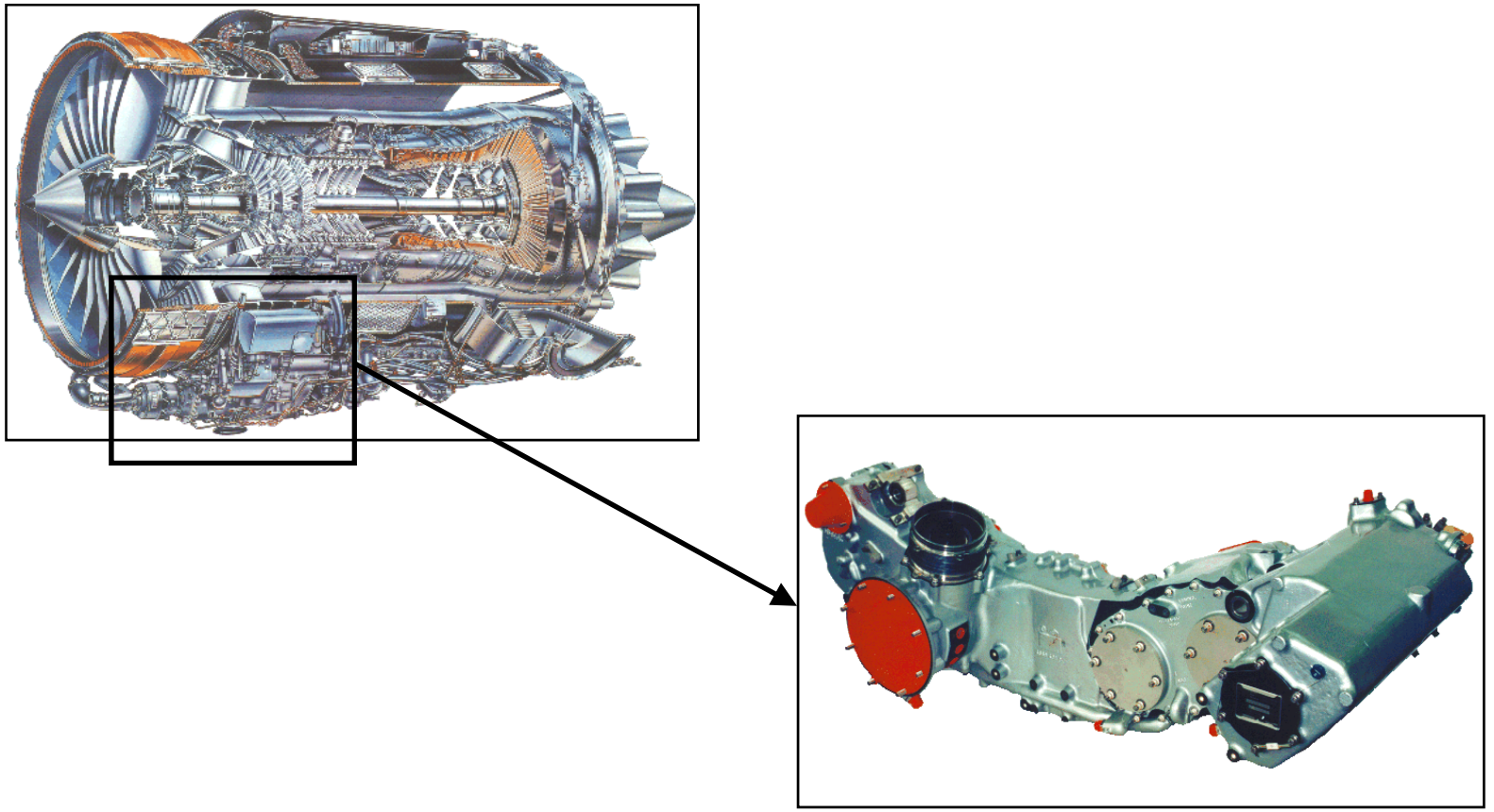






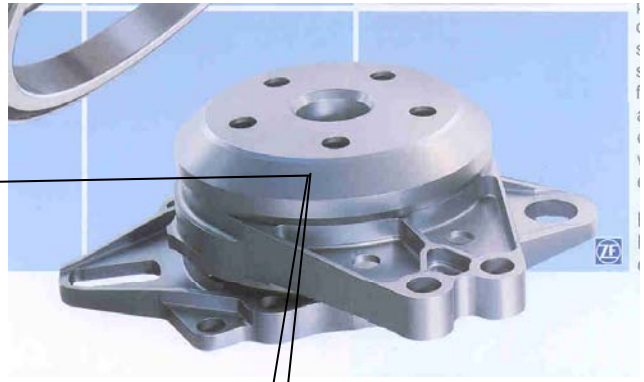
- Engine Gearboxes
- Transmissions for Fixed-Wing Aircraft
- Transmissions for Helicopters
- Transmissions for Tiltrotor- / Tiltwing - Aircraft

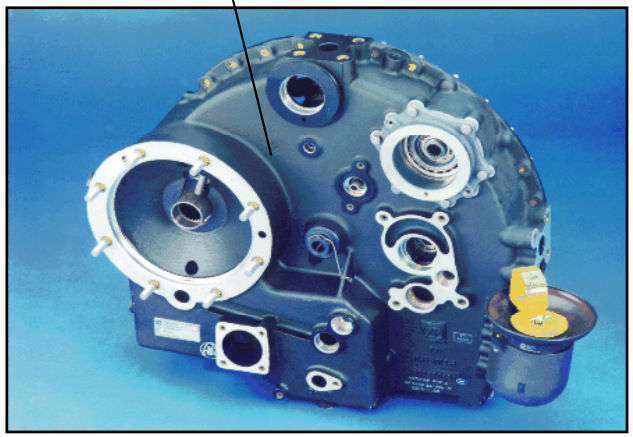
Engine Gearboxes



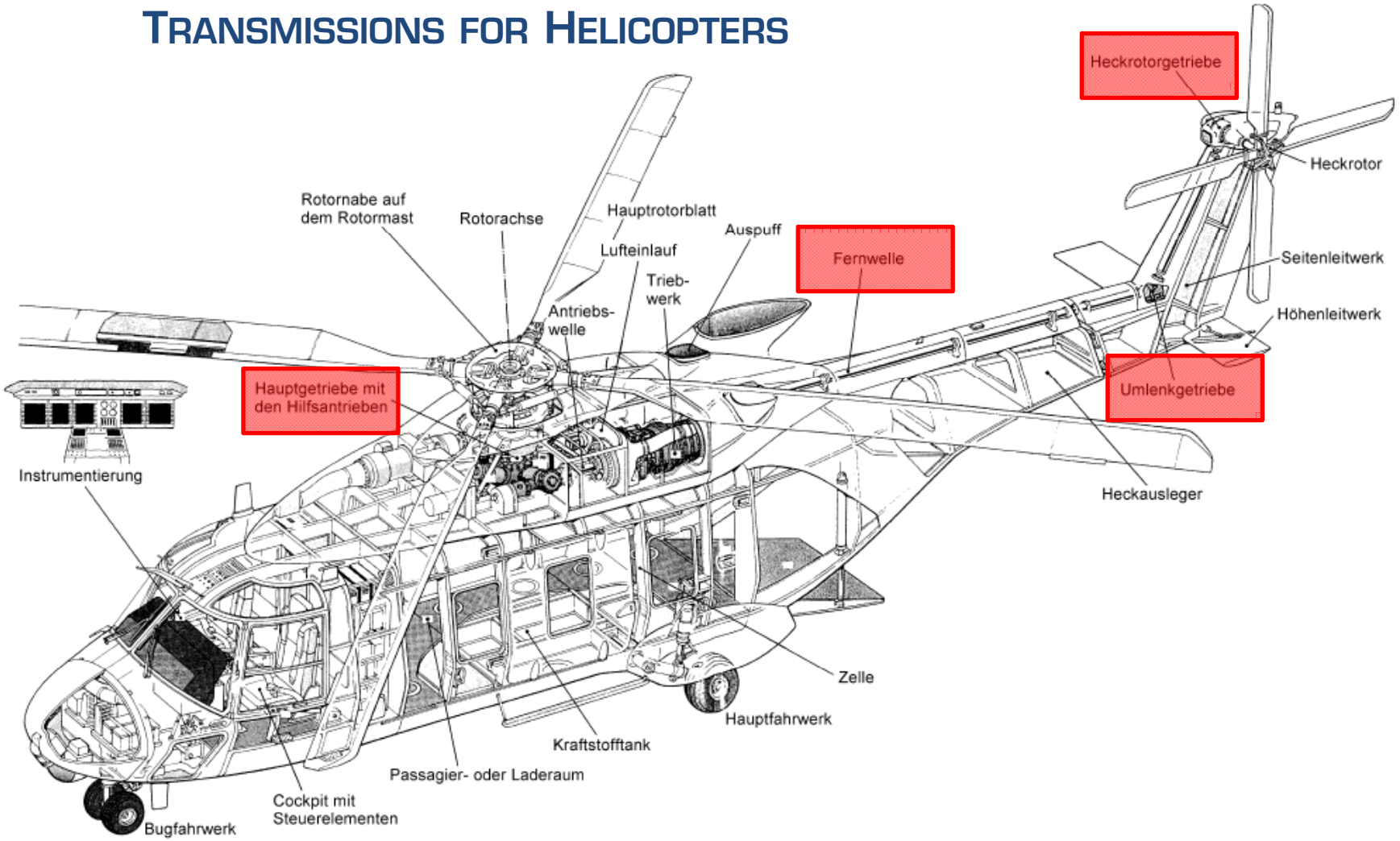
Geared Turbofan

Transmissions for Fixed-Wing Aircraft



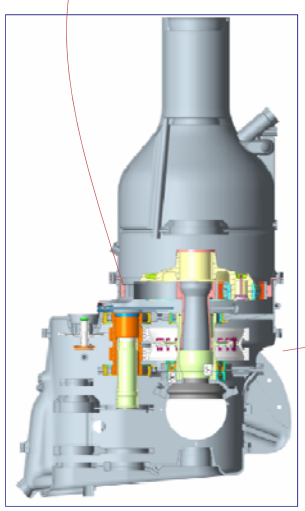


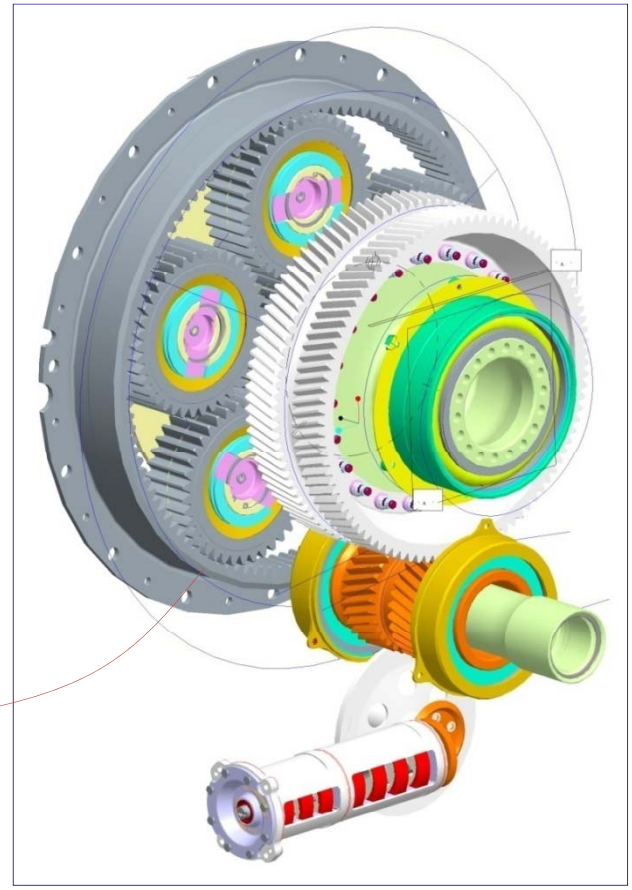
Transmissions for Helicopters



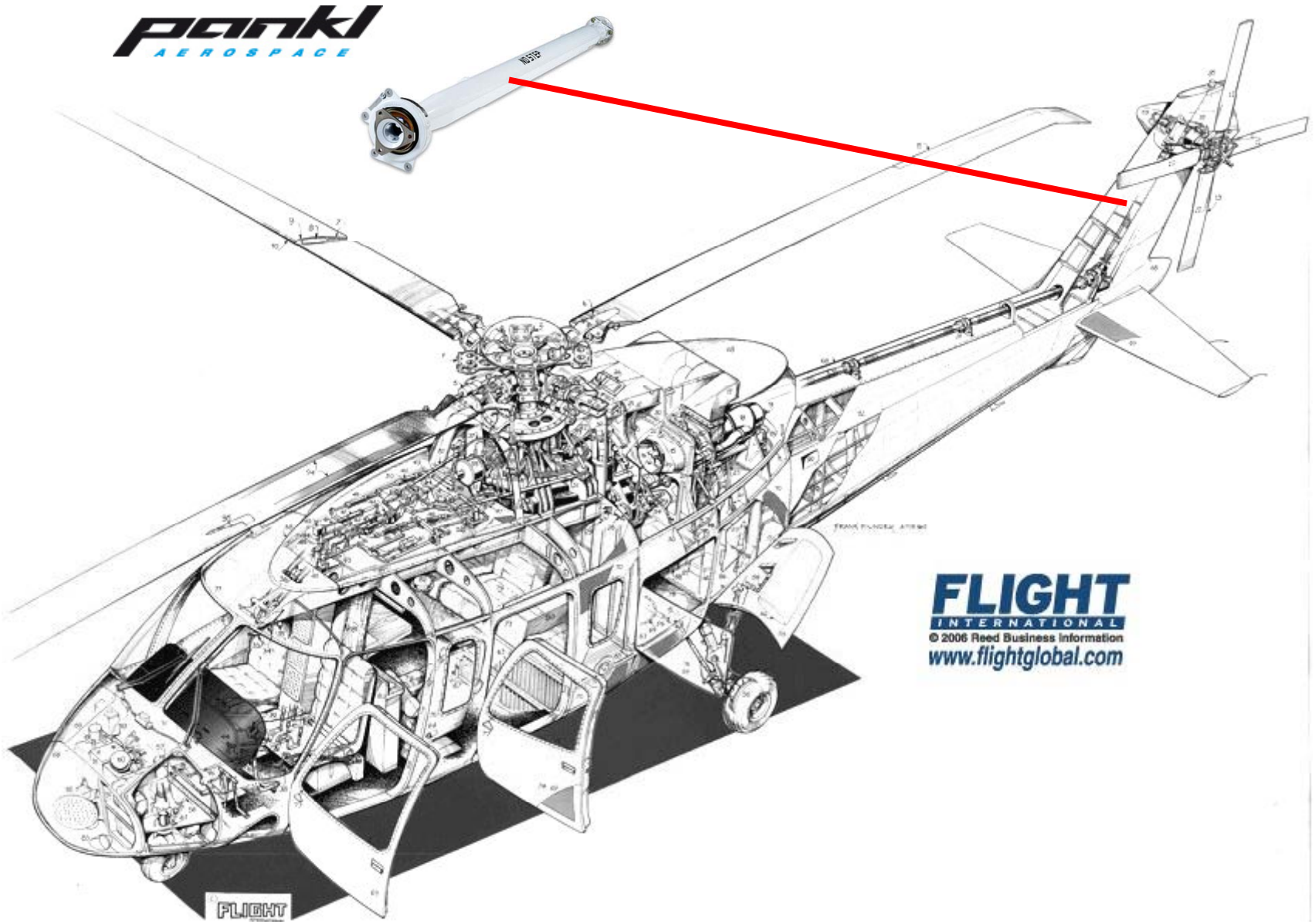
Transmissions for Aircraft

Transmissions for Tiltwing / Tiltrotor - Aircraft

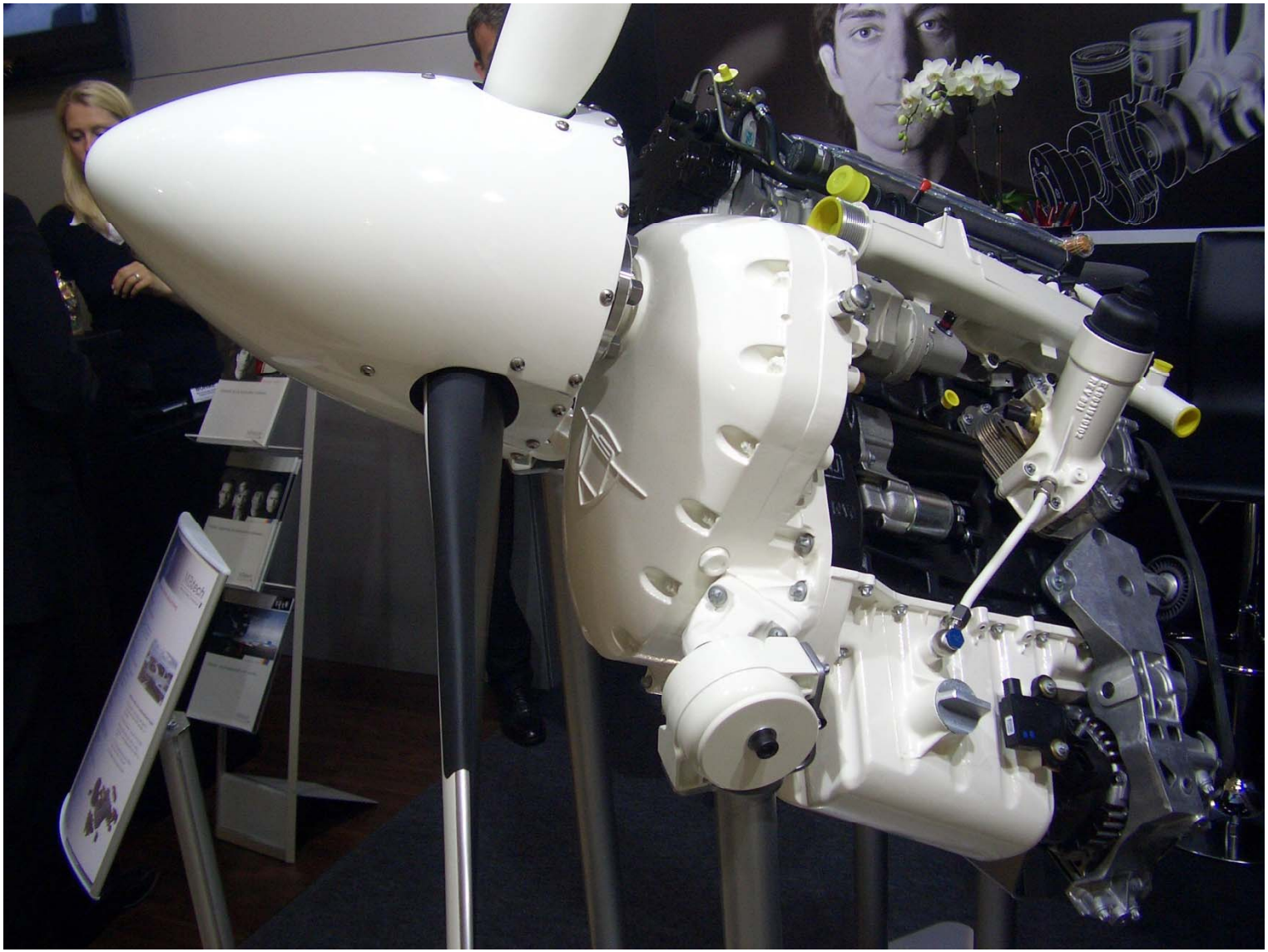




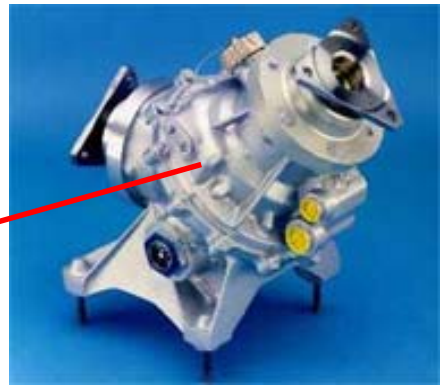
SCHIEBEL CAMCOPTER S-100



Sikorsky S76 Tail Drive Shaft



AUSTROENGINE AE300



Optimised gearbox Housing

Berlin Air Show
2010

FFG

bmvit
Austrian Ministry
for Transport,
Innovation and Technology

Started 2011: Nationally funded research project:

Optimised

Helicopter Transmissions

Made in Austria

Institut für Konstruktionswissenschaften und Technische Logistik

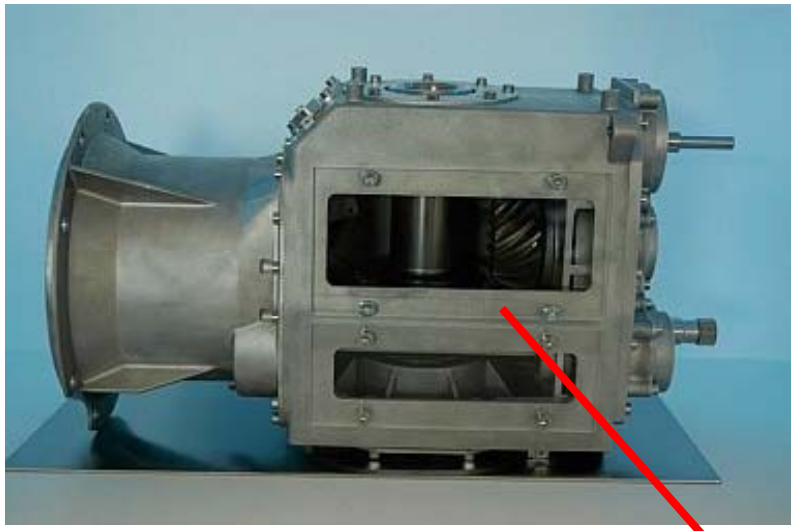
TU WIEN

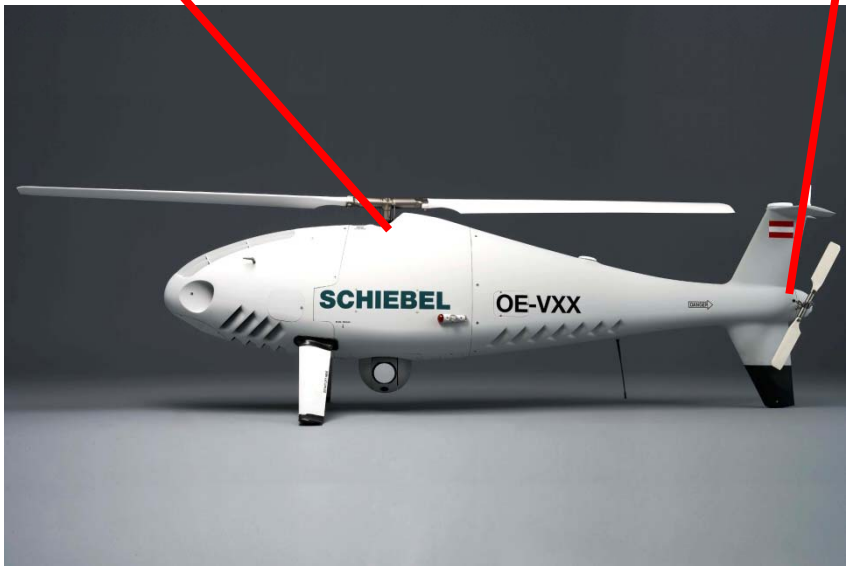
Forschungsbereich
Maschinenelemente
und Rehabilitationstechnik

SCHIEBEL

pankl
AEROSPACE

OHA!: Nationally funded research project





Schiebel camcopter S-100

OHA!

Tail drive of manned helicopter

TU Working Group Aviation:

In April, 2010 all institutes of Vienna University of Technology working on topics of aviation and aerospace technologies founded the **Working Group Aviation** to organize and harmonize their work and to have a focal point for all organizations interested in a collaboration with Vienna University of Technology.

Focal point / Contact point:

Institut für Konstruktionswissenschaften und Technische Logistik
TU WIEN
Forschungsbereich Maschinenelemente und Rehabilitationstechnik

Air rescue / Rescuetech:

A further field of activity at the institute is air rescue and rescue technologies, combining its knowledges in the field of mechanical engineering and medicine.

Institut für Konstruktionswissenschaften und Technische Logistik

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Thanks for Your Attention !