

Institute of Lightweight Engineering and Polymer Technology

Introduction to Workshop on Multifunctional Composite and Smart Structure

Dr.-Ing. Albert Langkamp

26.06.2023

Who we are.



Prof. Otto Bergsma



Dr.-ing Albert Langkamp



Dr. George Tzortzinis

Content

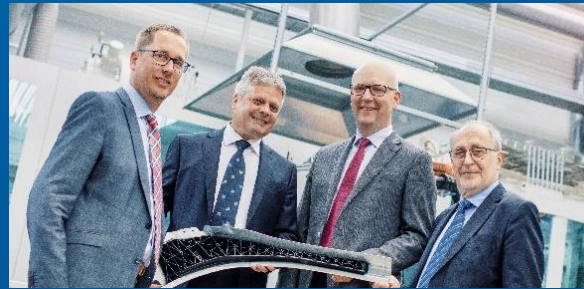
- The affectionate narrator
- Value of your idea
- The seductiveness of the new or Be spoiled for choice
- Be a salesman
- Power of Processes
- We solve problems that would not exist without us
- Counting success

DRESDEN & TU DRESDEN



VISION

The ILK is the leading international institute for research, development in the field of function-integrative lightweight engineering based on multi-material design



ILK-TEAM

255

employees in a broad interdisciplinary team



65

years of lightweight research in Dresden

YOUNG TALENTS

80

graduates per year



CONTINUOUS RESEARCH AND DEVELOPMENT CHAINS

Material, Modelling, Simulation, Design, Processing, Quality, LCA



>1



Start-Up a year (actual 12)



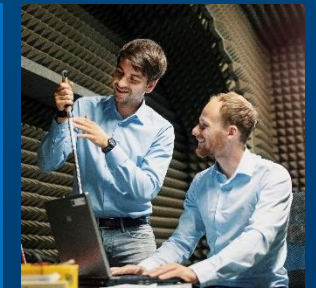
INDUSTRIAL COOPERATION

with European large-scale industry and regional SMEs



~1.000

Aluminis since 1997



35% Basic research

35% Application-oriented research

30% Industrial Development



Promoting initiatives for children, women and young talent
juniorING e.V.



INTERNATIONAL NETWORK

among others with partners in Poland, Korea, China, Singapore, Romania, USA



UTC Dresden

Lightweight Structures
and Materials and
Robust Design
(Lead: Prof. Gude)



Rolls-Royce



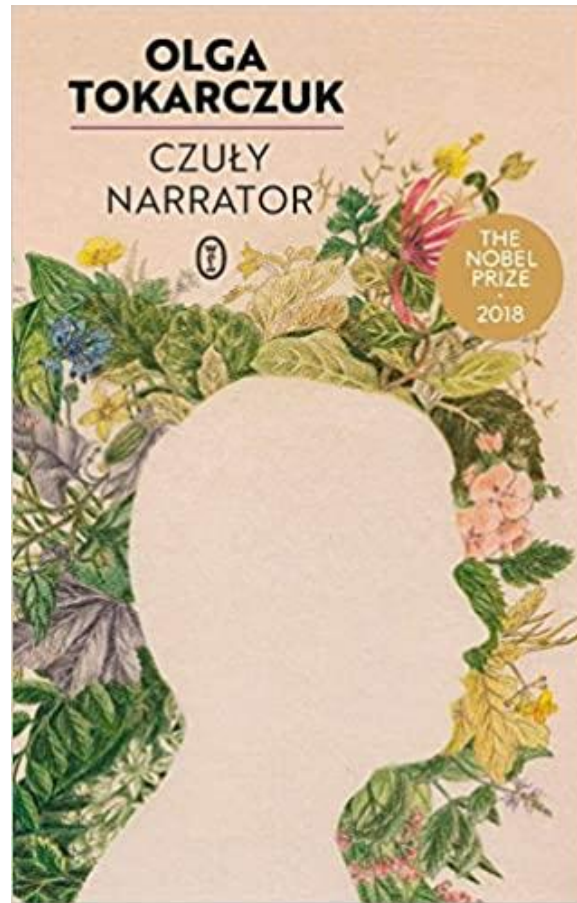
Institut für
Leichtbau und
Kunststofftechnik

ifWW
Institut für Werkstoffwissenschaft
materials science



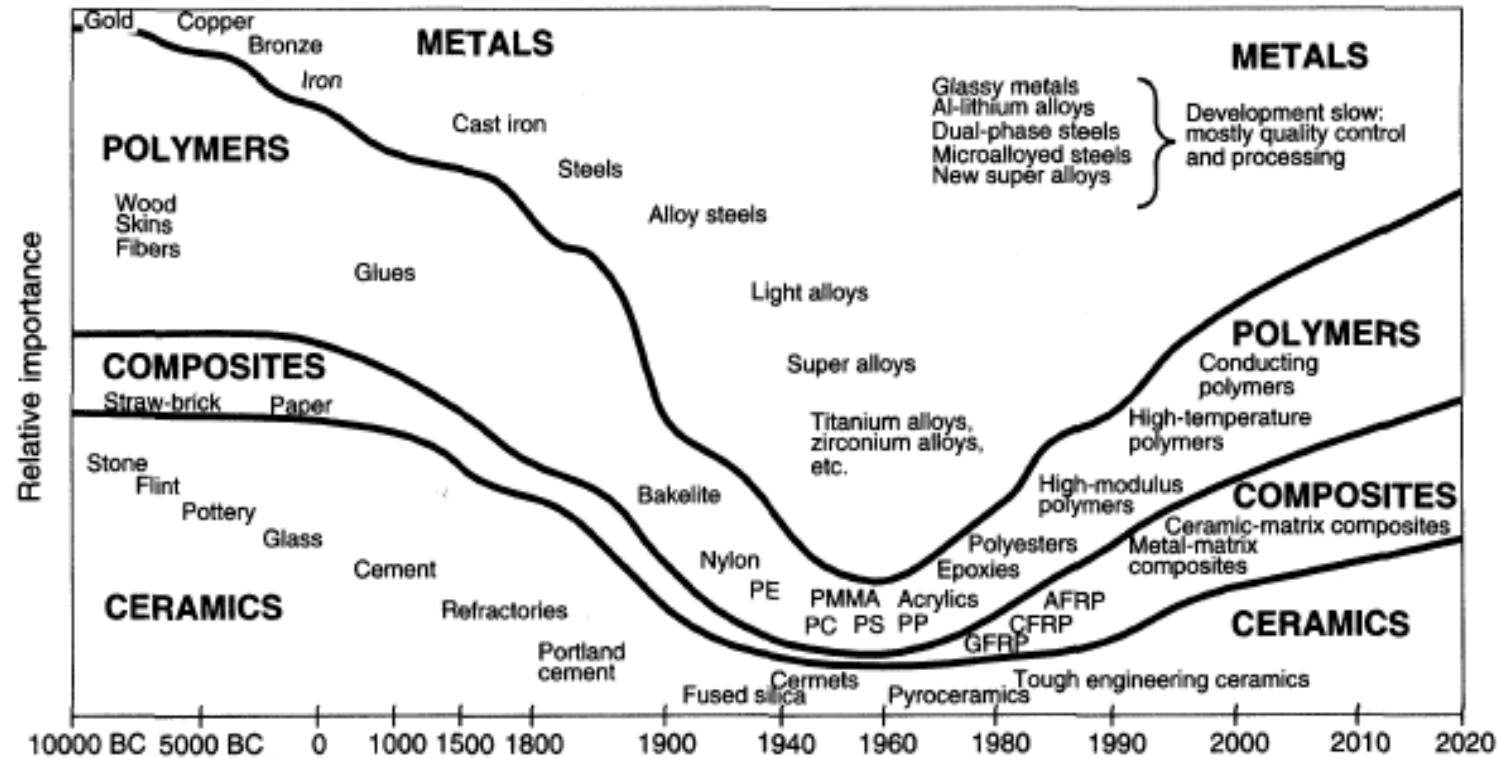
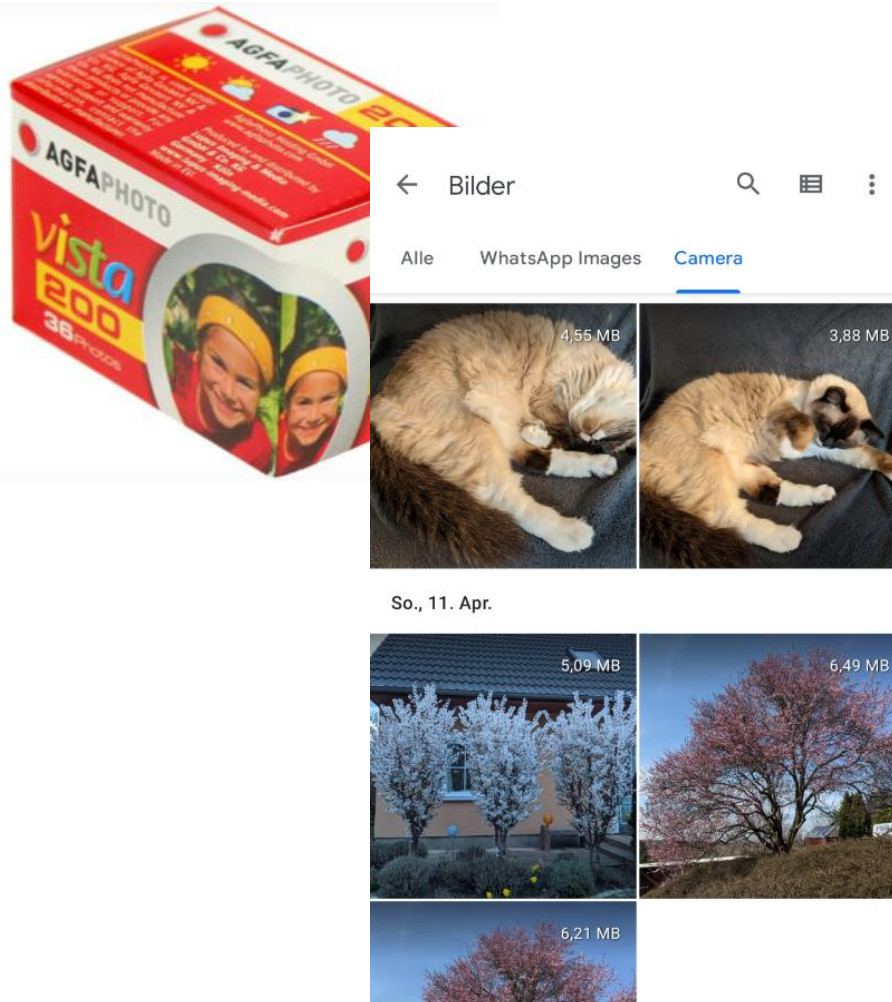
Institut für Energietechnik

The affectionate narrator



Consider yourself as scientific litterateur and not as butler of the industry

Value of our material idea - Desire and reality

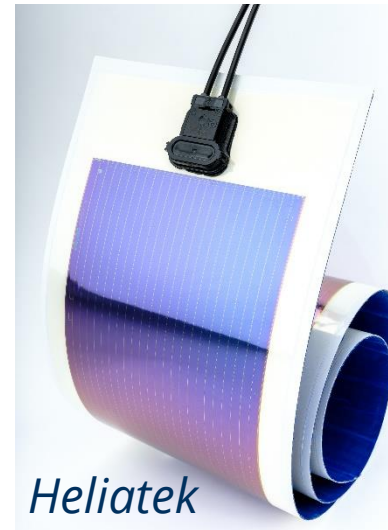


Åström

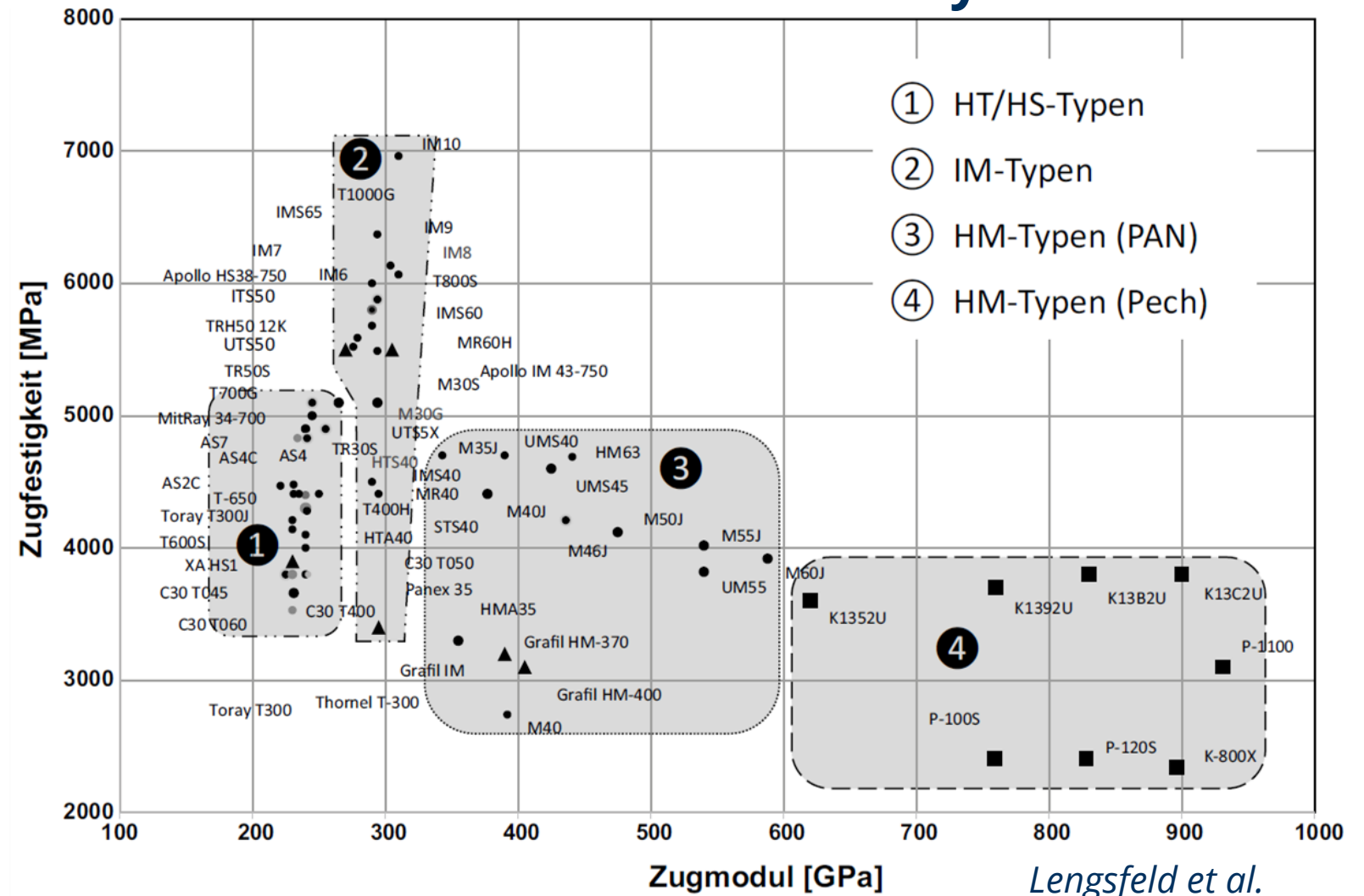
Value of your idea

Dominating question:
What will be changed by your idea?

- Cost reduction
- Extension of application limits
- Improvement of usability
- Solving problems with supply chain
- Enabling new technological solutions
- Improvement of ecological or social sustainability
- ...



The seductiveness of the new or Be spoilt for choice will stress the industry!



Be a salesman ...

... Identify the value of your idea

... and understand the business reality of your industrial partner (company and people):

Globally

- Market position, esp. situation of competition
- Product, technically and commercially
- In-house processes: esp. innovation management, product development and manufacturing, product related services

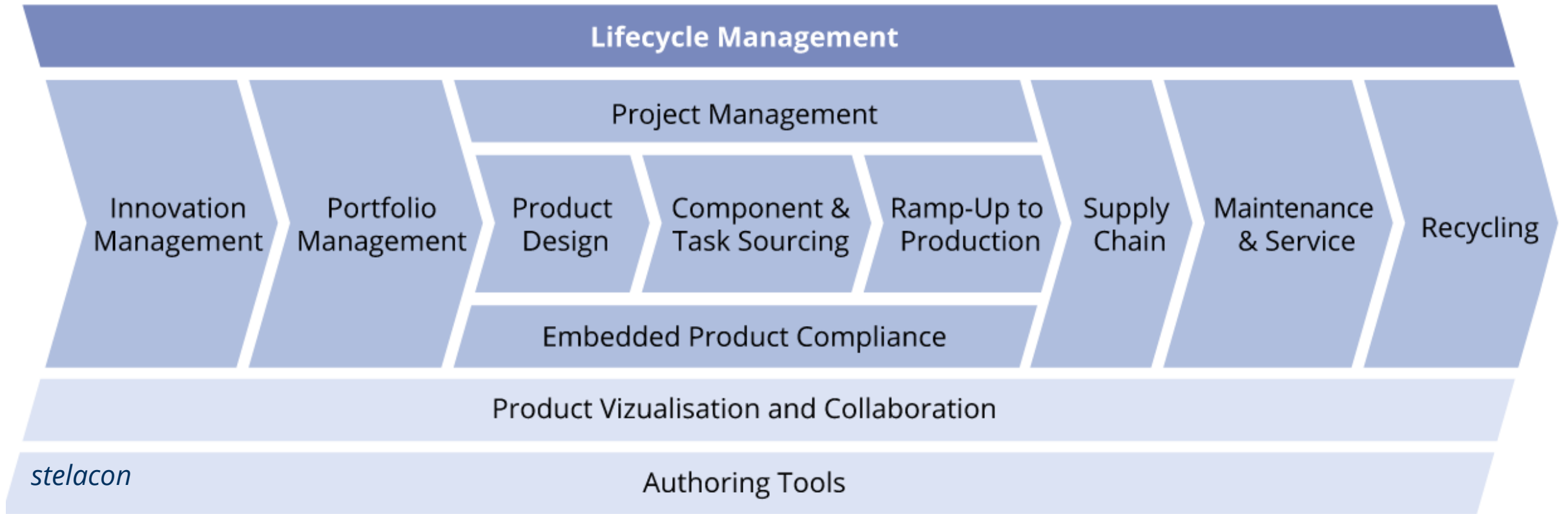
Situationally (esp. keeping the contact persons in mind)

- Day-to-day business
- Company structure and internal politics
- Personal competences



Power of processes

In-house processes along the product life cycle



We solve problems that would not exist without us

New material results in a list of new challenges, e. g.

- Certification
- New methods for design, dimensioning, manufacturing and handling
- New supply chain
- Investments
- Obsolescent facilities

PART OR MATERIAL CERTIFICATION FORM						ATA Specification 106	
2. Seller Name: SKYLINK, INC. 4. Organization: 2840 S. FINANCIAL COURT SANFORD, FL 32771 TELEPHONE: 407-268-4114 FAX: 407-268-4118						3. Reference #: 031411	
						5A. Sales Order #: 023937	
						5B. Client P.O. # / Buyer's Contract: 6091	
6. Item	7. Description	8. Manufacturer & Part Number	9. Eligibility	10. Quantity	11. Serial/Batch Number	12. Status	
1.	ACTUATOR	1809A000-01		1 EA	1809A00001495	SERVICEABLE	
13A. Remarks: THE ABOVE REFERENCED PART(S) OR MATERIAL (WAS / WERE) NOT OBTAINED FROM ANY US GOVERNMENT OR MILITARY SOURCE AND (WAS / WERE) NOT SUBJECTED TO SEVERE STRESS OR HEAT OR IMMERSED IN SALT WATER (AS IN A MAJOR ENGINE FAILURE, ACCIDENT, INCIDENT OR FIRE).							
13B. Obtained From: AVIANCA (125)				13C. Last Certified Agency: PNEU-TECH LLC			
<input type="checkbox"/> 14. New Parts/Material Verification:				<input checked="" type="checkbox"/> 18. New Surplus, used, repaired or overhauled parts verification;			
The following signature attests that the part(s) or material(s) identified above was (were) manufactured by a FAA Production Approval Holder (PAH) or to military or commercial standards.				The following signature attests that the documentation specified above or attached is accurate with regard to the item(s) described.			
15. Signature:				18. Signature:			
16. Name (typed or printed):				19. Name (typed or printed):			
17. Date (MM/DD/YYYY):				21. Date (MM/DD/YYYY):			
<p>NOTICE: The above signature binds the seller and the SIGNER to the accuracy of the information provided in the Form. Should the information provided in this Form contain inaccuracies or misrepresentations, the signer and the SELLER may be liable for damage and are subject to criminal prosecution under state and federal law.</p> <p>FAA AC 0036A ACCREDITED</p>							

Generally: The benefits must outweigh the challenges!

Counting success

- Increasing the profit of the industry partner
- Improving the market situation of the industry partner (economically, ecologically and socially)
- Enabling a product and improving a product

What else

- Consolidation of a trusted partnership
- Establishing cooperation between science and industry
- Increasing visibility (e.g. through publications and trade fair appearances)
- Improving the political and social situation of the company
- Increasing employee satisfaction of the industry partner
- ...



In Germany we say – and I don't know if it's the same in other countries:
"If we do something, the results should have hand and foot."



In this sense - thank you very much for your attention



INSTITUTE OF LIGHTWEIGHT ENGINEERING AND POLYMER TECHNOLOGY

The leading international institute for research, development and student education in the field of function-integrative lightweight engineering based on multi-material design