



INVENT Presentation

Maik Wonneberger

Jour Fixe CU West

18.10.2021

1. INVENT at a glance

2. Competences

3. Business Units





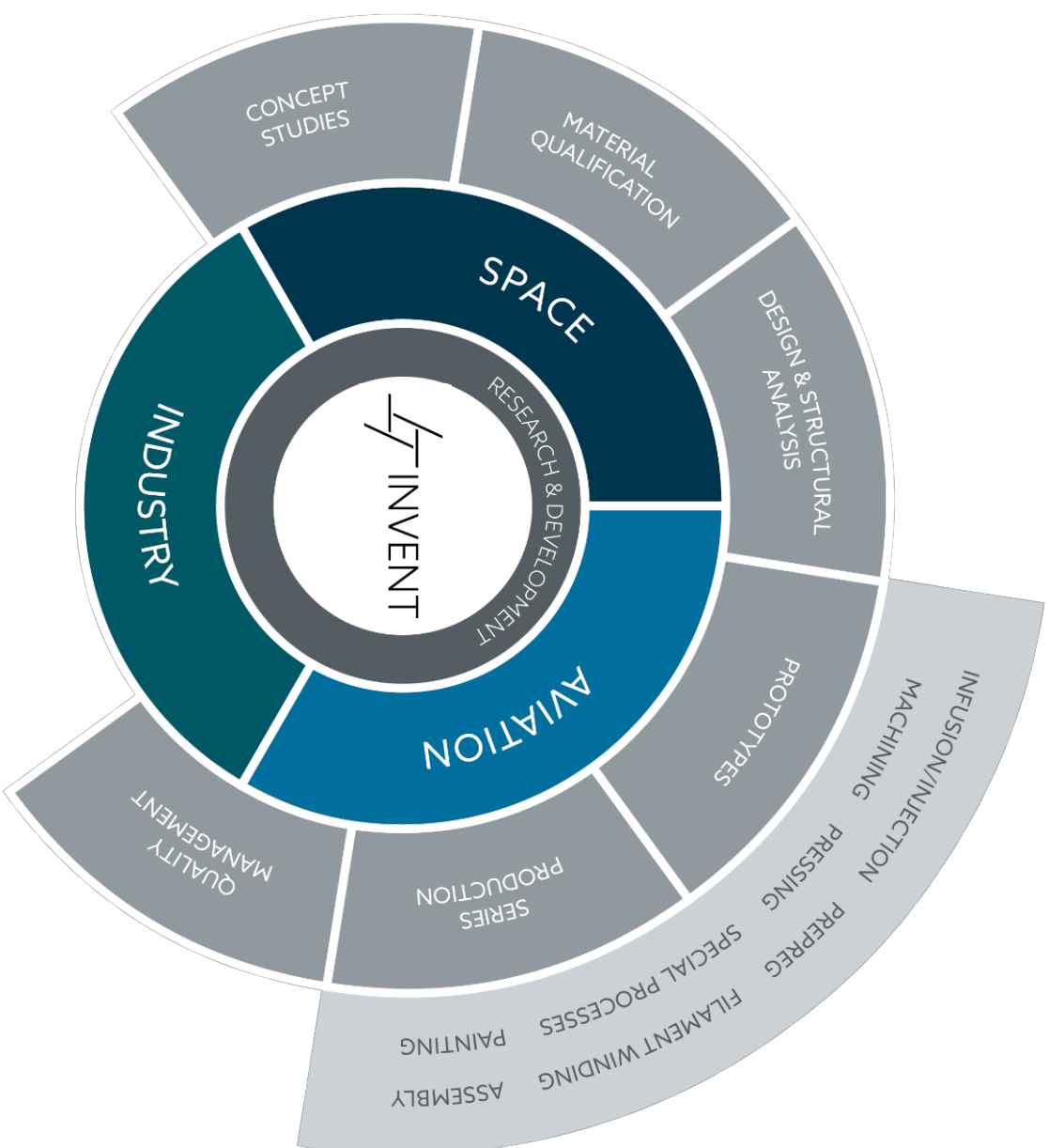
- **Founded:** 1996 as DLR Spin-Off
- **Company:** independent SME
- **Business:** development, qualification and production of innovative fibre composite structures
- **Markets:** Space, Aviation, Industry
- **Turnover:** ca. 10 M€ in 2020
- **Employees:** ca. 100, constantly increasing development

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CCA – lay-up of prepreg laminates



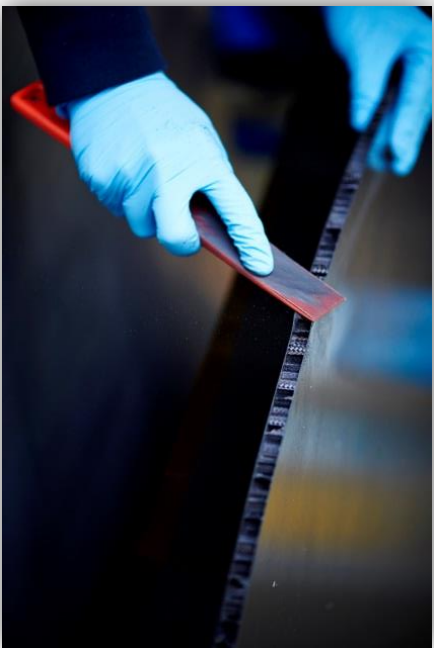
Autoclave cure



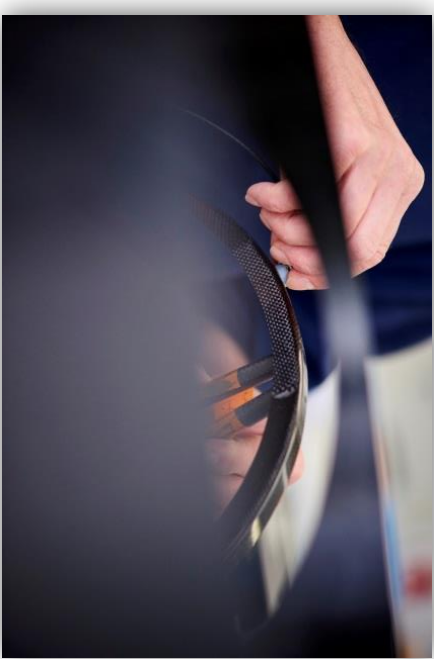
Filament winding



NC machining



Manual trimming



US NDI

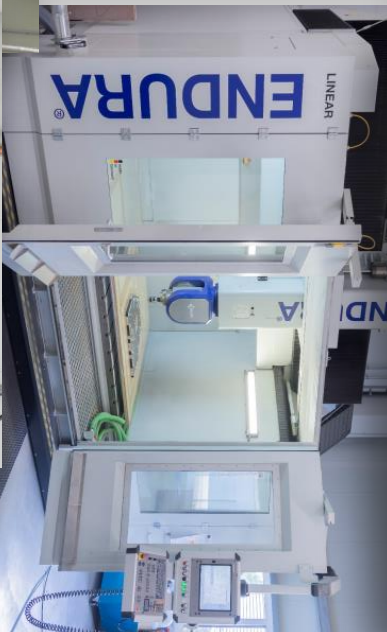


Assembly and QA



Paint shop

MACHINERY FOR PRODUCTION



PASSION FOR COMPOSITES

CERTIFICATE

Management system 88 per
EN 9100:2018
 (statistically equivalent to AS9100 and JIS Q 9100:2016 and in conformity with the requirements of ISO 9001:2015)

In accordance with TÜV NORD CERT procedures and the DIN 9104:001:2013, it is hereby certified that:

INVENT GmbH
 Christian-Pommer-Strasse 47
 38112 Braunschweig
 Germany

operates a management system in line with the above standard for the following scope:

Design, calculation, dimensioning, Prototyping, volume production of innovative system components in fibre composite structures as well as metallic components

Certificate Registration No. 78 117 068813

Issue Report No. 3524 1741

Revision date 2019-11-14

Issue date 2017-07-15

Expiry date 2020-07-14

Initial certificate 2006

Christian-Pommer-Strasse 47

at TÜV NORD CERT GmbH

Evans, 2019-11-14

This certificate was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH

Langerackerstrasse 28

45144 Essen

www.tuv-nord-cert.com



TÜV NORD CERT GmbH is accredited by DAKKS within the scope of services

- Certified in accordance with **EN 9100**
 - IAQG OIN: 6115386642
- Quality assurance through non-destructive and destructive testing
- scheduled internal and external quality audits
- Transparent processes and procedures
- scheduled employee training
- Accreditation **Nadcap Composites** with merit status
- since February 2014 as the first manufacturing facility for composite parts in Germany



1. INVENT at a glance

2. Competences

3. Business Units



- Structural parts ranging from commercial to general aviation
- Series production and individual conversion of qualified aircraft components
- Tier 1 supplier with 100% in-house process chain, from incoming-goods inspection up to final surface treatment (approved supplier ARP ID 217359)
- variety of components:
 - primary and secondary structure elements
 - water tanks
 - crash absorption elements
 - Cabin and skis for helicopters
 - interior paneling, climate tubes



Fig. 1: tier 1 supplier for composite details on Airbus aircrafts



Fig.2: engineering and production of ski set for NH90



Fig. 3: CoAX 2D CFRP cabin production



- Development & production individually tailored parts for:
 - General mechanical engineering, astronomical applications
 - Automotive and rail vehicle construction
 - Naval applications
 - Medical & military technology
- Concept studies, component qualification
- Jigs and Tools development and manufacturing
- Key features:
 - Experimental materials and process development
 - Ultra-rapid curing techniques
 - Bio composites
 - Morphing structures
 - Delicate metal parts (Invar, Titanium)

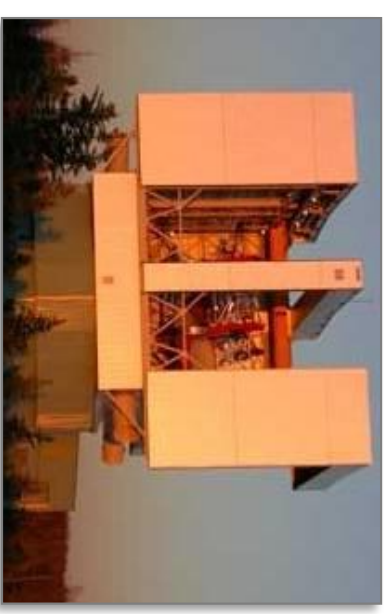


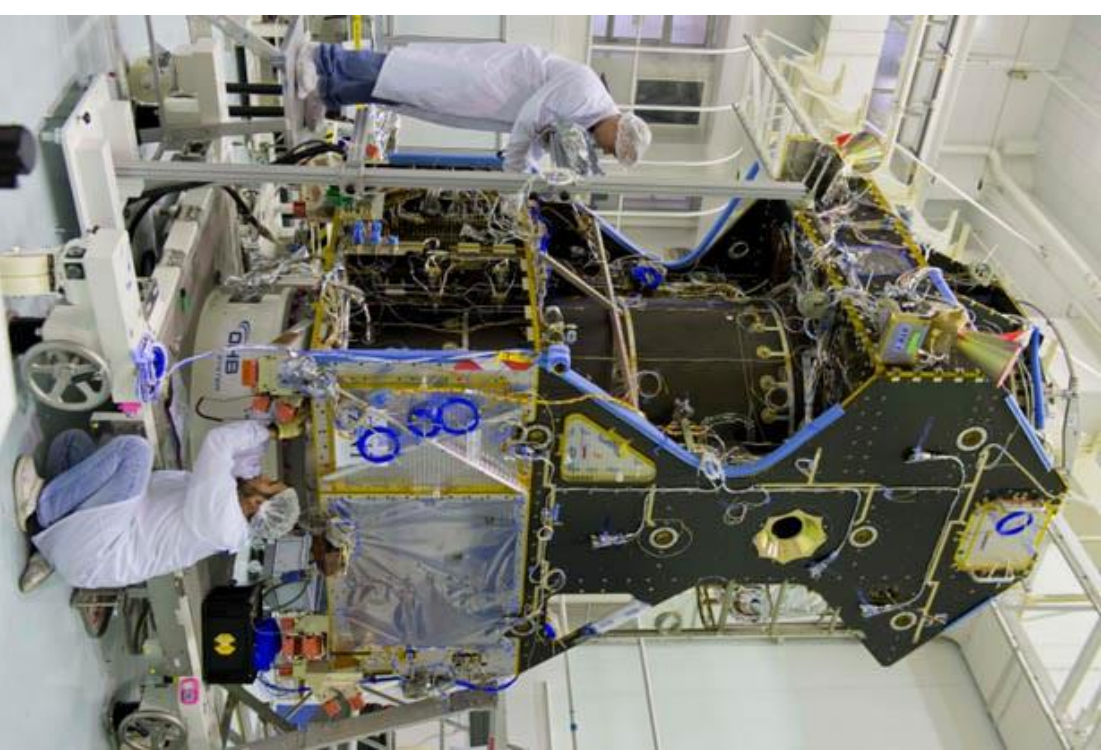
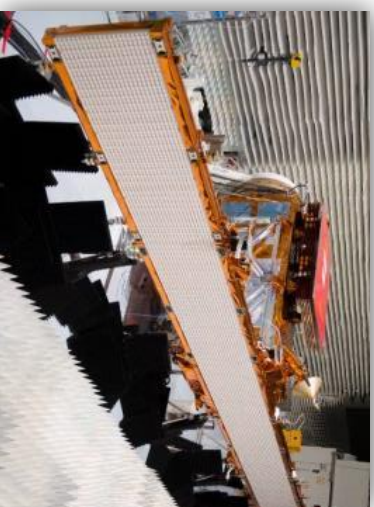
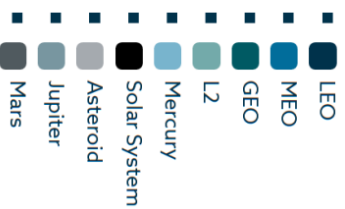
Fig.1: Large Binocular Telescope (LBT)



Fig.2: Military helicopter NH90



- Engineering, production and qualification for wide range of spacecraft structures
- Bespoke products up to series production
- Dedicated space PA
- Product portfolio:
 - Structural Panels
 - Support Structures
 - Cylinders, Struts and Booms
 - Thermal Hardware
 - Instrument Assemblies
 - Antenna Components
 - Carbon fibre honeycomb CCORE®



2000

ADM Aeolus, TerraSAR-X, Herschel,
Tandem-X, PAZ, Sentinel 1 A – D,
eROSITA, SWARM, Galileo FOC, Grace

2010

EnMap, Bepi Colombo, FormoSat 5,
ExoMars TGO, Solar Orbiter, Sentinel 4 UVN,
Sentinel 5P, Sentinel 2, MASCOF, Grace FO,
ExoMars Rover, MTG, H2Sat, EUCLID, EDRS-C

2015

MetOp-SG (IASI, MW/S, 3MI, S/C),
JUICE, SARah, Military Sat's,
Microcarb, Sentinel 5, ELECTRA

2020

PLATO, CHIME, CO2M, ROSE-L, CIMR
HERA, GATEWAY

>10.000 parts flying





THANK YOU FOR YOUR ATTENTION!

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