



A L T E N

Intelligence. Variety. Technology.

ALTEN – Technology consulting and engineering



1 ALTEN Group

2 ALTEN Germany

3 Our customers

4 Our business model

5 Our competencies & projects

6 Your contact

ALTEN DNA GERMANY

ABOUT ALTEN

ALTEN GROUP & GERMANY

- This page is for description only – please don't use it officially ! -



ALTEN Group

European leader in engineering and technology consulting



ALTEN

NORD AMERICA

USA
Canada
Mexico

ASIA

China
India

OTHERS

Africa / Morocco
Middle East



EUROPE

Austria
Belgium
Germany
Great Britain
Finland
France
Italy
Netherlands
Norway
Poland
Romania
Russia
Spain
Sweden
Switzerland



1988
founded



22
Countries

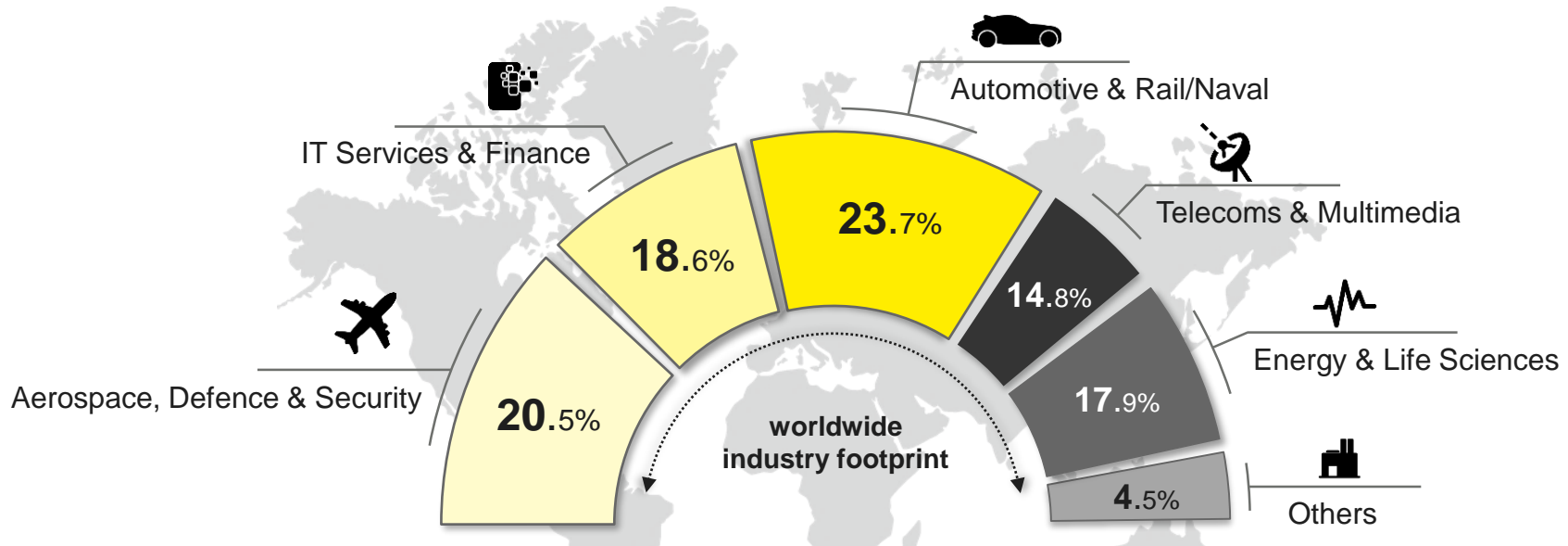


24,000
Employees

88% Engineers

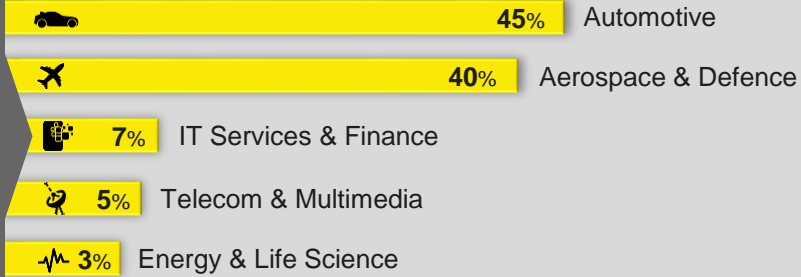


1,75 Bn €
Turnover 2016

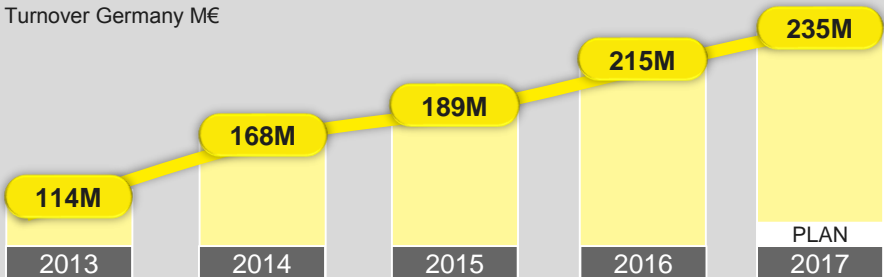
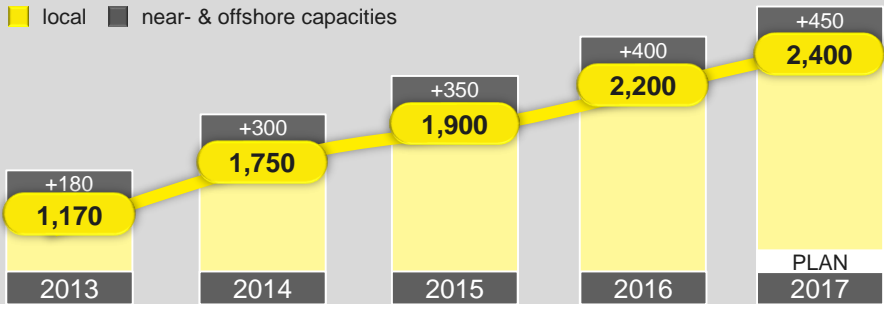


Concept Consulting Development Process Realization **Product**

1988 established | 22 countries | ALLEN Knowhow 30 years of innovation | 24,000 employees | 1,75 Bn € turnover 2016



ALTEN SOLUTIONS
ATEXIS
 Optimize your support
Mi-GSO
 PROJECT MANAGEMENT XPERTS





Leading

engineering & consulting

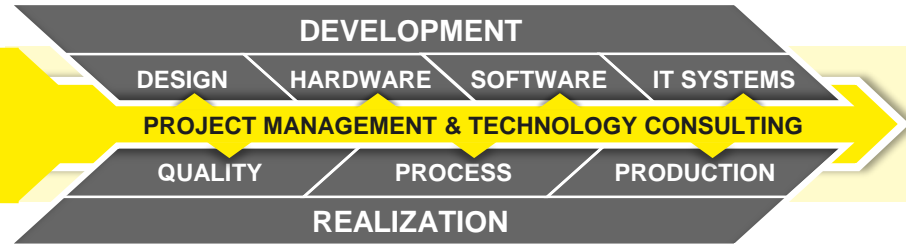
technology partner



positioned as

customer-oriented & globally networked

multi-specialist



with strong

long-term

local presence



Our Customers (extract)

ALTEN is preferred supplier for many OEMs & Tier1s



| | | | |
|------------|------------|-----------------|------------|
| ADVANTEST | AIRBUS | AUDI | BMW |
| BOMBARDIER | CLAAS | DAIMLER | FENDT |
| FORD | GE | GM | HILTI |
| MAN | MIELE | OPEL | PORSCHE |
| RENAULT | ROCHE | ROHDE & SCHWARZ | TELEFONICA |
| SIEMENS | VOLKSWAGEN | VOLVO | ZEISS |

OEMs

| | | |
|---------------------|-----------------|-----------------|
| AUTOMOTIVE LIGHTING | AUTOLIV | BOSCH |
| BROSE | CONTINENTAL | DIEHL AEROSPACE |
| DRÄXLMAIER | HELLA | HARMAN |
| INFINEON | KNORR BREMSE | KUKA |
| MAGNETI MARELLI | PREMIUM AEROTEC | VALEO |
| VISTEON | WEBASTO | ZF TRW |

SUPPLIER

ALTEN business model

5 individual solutions for successful projects



1

CONSULTING

based on resources

flexible provision of specific know-how



TIME & MATERIAL



ONSITE



RESOURCES

2

CONSULTING TEAM

cross-project consulting based on an individual contract

reducing resources spent on administration. Flexibility and purchasing advice

3

SERVICE CENTER

based on performance indicators

Delegation of management-tasks and service agreements

4

COMPETENCE CENTER

based on work units & performance catalogue

Industrializing and raising productivity

5

FULL SERVICE CENTER

one-off fixed-price project

Monitoring quality, costs and time



WORKPACKAGE

OFFSITE



RESULTS ORIENTED



SERVICE LEVEL

ALTEN DNA GERMANY

ALTEN KNOWHOW

INDUSTRY COMPETENCIES

- This page is for description only – please don't use it officially ! -

Our core competencies for the automotive industry



**POWERTRAIN &
CHASSIS**

**ELECTRIC &
ELECTRONIC**

**INTERIOR &
EXTERIOR**

**INFOTAINMENT &
CONNECTIVITY**

**PRODUCTION
& SUPPLY CHAIN**

**TEST &
QUALITY**



From
Concept



to
Series

Project Management

Our core competencies for automotive IT



REQUIREMENTS
MANAGEMENT



HW-/SW-
DESIGN



HW-/SW-
DEVELOPMENT



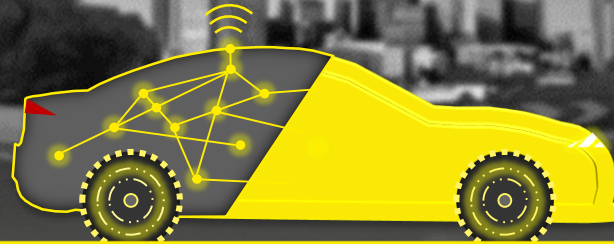
VALIDATION &
INTEGRATION



SYSTEM TEST



From
Concept



to
Series

Project & Quality Management

Our core competencies for medical technology



DEVELOPMENT &
DESIGN

QUALITY
MANAGEMENT

VERIFICATION &
VALIDATION

EMBEDDED
SOFTWARE
& TEST

REGULATORY
REQUIREMENTS

PRODUCT
LIFECYCLE
MANAGEMENT



From
Concept

to
Product

Project Management

Our core competencies for energy technology



PLANT & ENERGY
SYSTEMS

SYSTEM & PIPE
PLANNING

ELECTRIC &
AUTOMATION

SIMULATION &
CALCULATION

ENERGY
TRANSMISSION
& SUPPLY

PROJECT
MANAGEMENT



From
Concept

to
Commissioning

Engineering & Project Planning

Our core competencies for Aerospace & Defense



SYSTEM
ENGINEERING

MECHANICAL
ANALYSIS

ELECTRONICS &
HARDWARE

SOFTWARE

PRODUCTION

QUALITY &
DOCUMENTATION



From
Concept

to
Operations

Project Management & Configurations Management

ALTEN DNA GERMANY

ALTEN KNOWHOW

INHOUSE COMPETENCE CLUSTER

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INTERIOR

- Instrument cluster
- Displays & controls
- MMI / infotainment
- Light conductors
- Door panels & interior parts
- Center console
- Digital mock-up

EXTERIOR

- Headlights
- Brake & rear lights
- Light modules
- Body components
- Plastic & Decorative Elements

PACKAGE

- Geometrical integration
- Static & dynamic studies
- CAD suggestions
- Requirements Engineering
- Prototype support

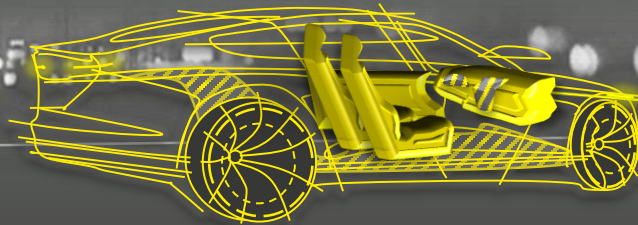
COMPONENTS

- Powertrain
- Mechatronics
- Control units
- Pump parts
- Lightweight construction
- Prototypes
- Electrical integration

CASING

- Equipment design
- 3D modeling
- System simulation
- All protection classes
- Operating elements
- Interfaces
- Material mix
- Thermal analyzes

From
Concept

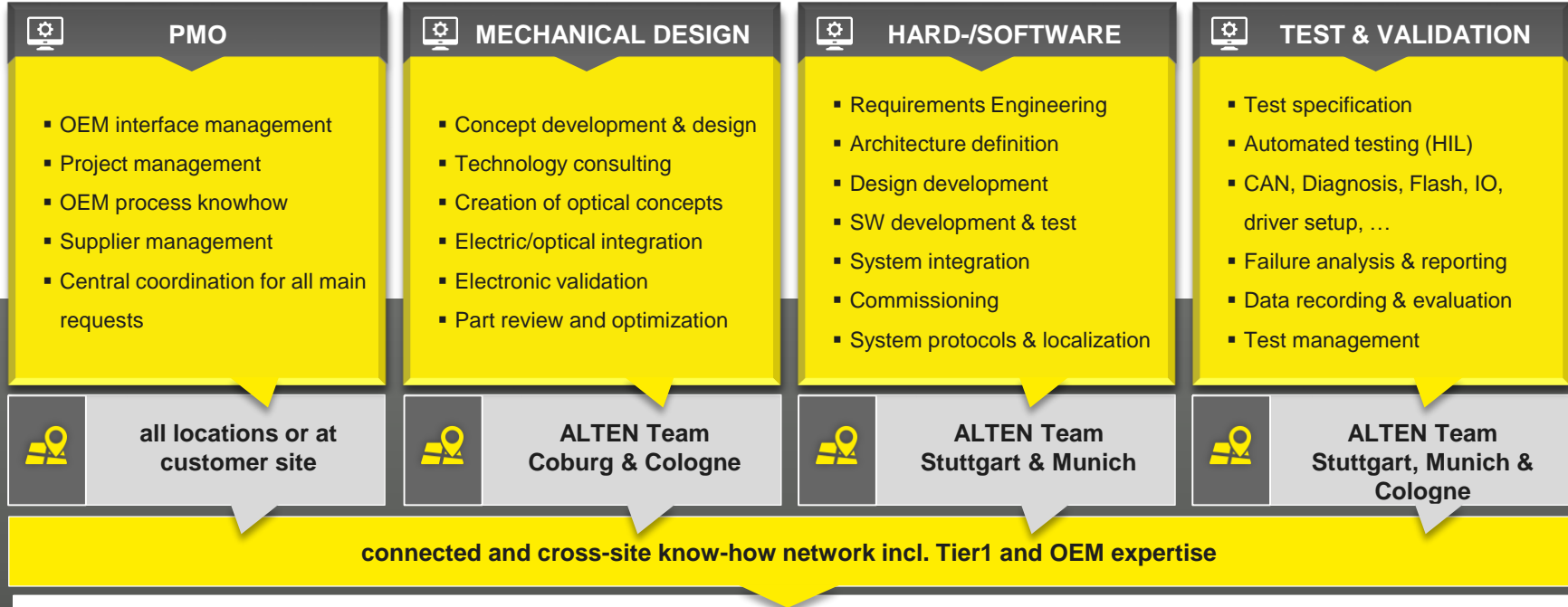


to
Series

Program & Project Management
Technology Consulting

ALTEN know-how: Systems & Interior Development

Technology competences and core teams in Germany



Customers: Audi, Ford, Continental, Visteon, Panasonic, Denso, Nippon Seiki, Bosch, Magneti Marelli, Delphi, Yazaki, LG ...

Preferred Supplier (>180 Projects)



CONTROL UNITS

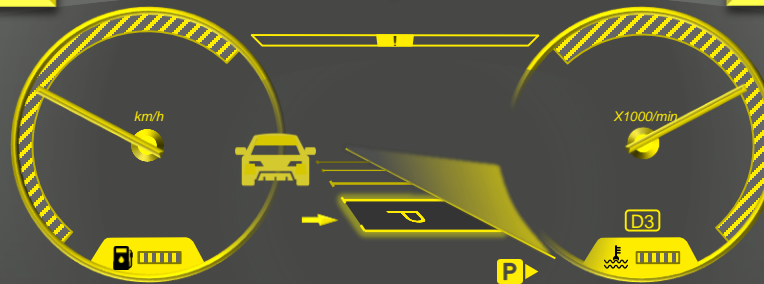
- Embedded SW development
- Micro controller
- Protocols / bus systems
- Real-time
- Model-based development
- Functional safety

INFOTAINMENT

- Software development
- Usability & onscreen protocols
- Human Machine Interface
- Car 2 X
- Telematics
- Smartphone integration

VISUAL SYSTEMS

- Software development
- Virtual instrument cluster
- Head-Up displays
- Human Machine Interface
- 2D / 3D
- Usability & onscreen protocols

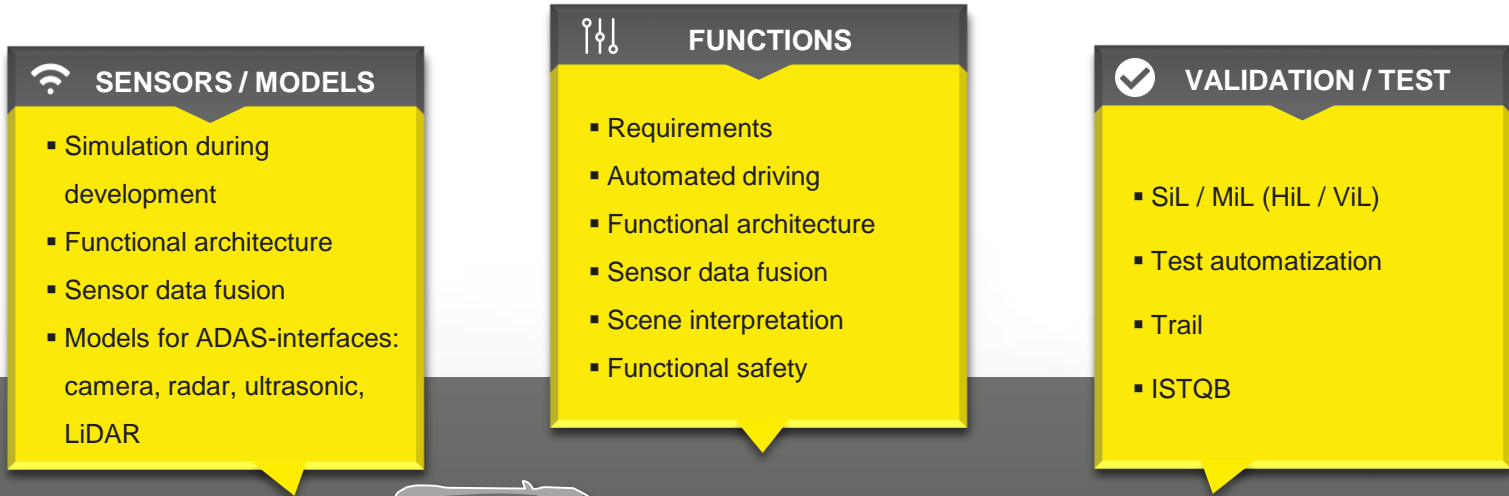


From
Concept

to
Series

Project & Quality Management

ALTEN know-how: advanced driver assistance systems (ADAS)



From
Concept

to
Series

Project Management (Agile / V-model)

FUNCTIONAL SAFETY

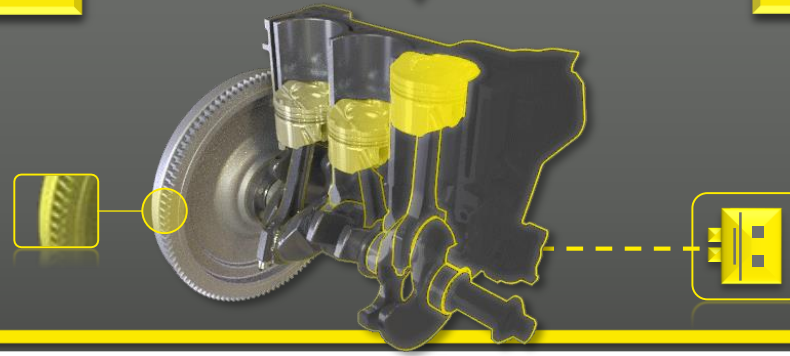
- Threat and risk analysis
- Functional safety concepts
- Safety program planning
- Safety management
- Process reviews
- Technical security concepts
- FTA
- FMEDA

FUNCTIONS & SW

- Requirements and concepts
- Functional architecture
- Model-based functions development
- Software development
- Test (HiL, test bench, vehicle)

OBD & DIAGNOSTICS

- OBD concept (incl. hybrid)
- Function implementation
- Validation
- Certification documentation
- Communication support for CARB



From
Concept

to
Series

Requirements – Development – Test
Validation Process



MOBILE APPS

- Sales solutions
- Service solutions
- Machine to Machine
- Human Machine Interface

ENTERPRISE

- Customer solutions
- Client / Server applications
- Cloud applications
- Database solutions
- Tool development

EMBEDDED

- Firmware
- Device control
- Automatic control
- Micro controller
- Protocols
- Real-time



From
Idea

to
Product

Strategy ▶ Planning ▶ Realization
Analysis ▶ Evaluation ▶ Reporting

Testing & Training

ISTQB Certified Tester
Foundation Level & Agile



NETZWERKE

- Network Engineering
- Network Deployment Project Management
- Network Technical Operations
- IT Service Management
- IT Security
- Corporate Communications



APPLIKATIONEN

- Software Development
- Mobile Applications
- E-Commerce & Content Management
- OSS & BSS
- CRM
- Software Testing & Quality Assurance



BUSINESS INTEL.

- Data Warehousing
- Analytics
- Data Mining
- Predictive Analysis
- Campaign Management
- Digital Marketing
- Performance Management



PMO & PROZESSE

- Agile Training & Coaching
- Digital Transformation
- Requirement Engineering
- Portfolio Management
- Change Management
- Product Ownership

From
Concept

to
Operations

Project Management



TEST SPEZIFIKATION

- Requirements analysis
- Test specifications
- Test automatization
- Model based testing
- Test environments / benches

TEST RUN

- Automated testing (HiL)
- CAN, diagnosis, Flash, IO ...
Failure analysis & Reporting
- Reporting & data recording

TEST MANAGEMENT

- Test planning / -coverage
- Failure management
- Test facilities management (HiL, REQ, ECU Test, CANOE, ControlDesk, Test boards, Fleets)
- Configuration Management

From **Consulting / White-Box**



to **Series support / Black-Box**

HiL SiL

ISTQB Certified-Testers /
Architectur / Requirements Engineering

Training

ISO 26262 /
Spice / AUTOSAR



3D ANIMATION / CGI

- Product presentations
- Technical animations
- Brochure illustrations
- Prototype visualization
- Training animations
- Virtual Photography
- Real-time 3D (VR/AR)



TECH. ILLUSTRATION

- Textless operation manuals
- Textless assembly manual
- Illustration design
- Layout design
- CI



INTERACTIVE APPS

- Mobile app development
- IOS / Android
- Web Applications
- Interactive 3D applications
- UI development

From
Concept



to
Publication

CAD Data Preparation / Conversion
Development supported Visualization



LAYOUT & CONCEPT

- Area planning
- Structure planning
- Layout
- Interfaces
- Media planning
- Intra logistics
- Process visualization

FACTORY & ASSEMBLY

- Process planning
- System planning
- Equipment material
- Conveyor technology
- Time analysis / MTM
- Ergonomics / safety
- System acceptance
- Series management

QUALITY

- K-FMEA, P-FMEA
- Quality- / audit strategy
- Potential-, risk- & weak point analysis
- System & process competence studies

LOGISTICS

- Quantity structure
- Area requirements
- Interpretation
- Logistics items
- Container & packaging planning
- Value stream analysis
- Supply chain planning

From
Concept



to
Series

Project Management



CONCEPT

- APQP
- Contract documents
- Certification
- K-FMEA
- S-FMEA
- Tolerance management

PRODUCTION

- P-FMEA
- Q-Planning
- Second Source
- Supplier management
- Transfer
- PPAP

SERIES

- SPC
- 5S
- Scrap-Analysis
- Process optimization
- Supplier development
- Auditing

AFTERSALES

- 8D-Reports
- Monitoring
- Analysis & diagnostics
- Reporting
- Warranty
- Reprocessing



From
Concept

to
Aftersales

Project Management

Development of a switched reluctance machine as wheel hub drive for an electric vehicle

- **Sponsored by** Germany and EU
- **Project promoters** FZ Jülich (PT ETN)
- **Project partner:** TH Cologne
- **Project budget:** 2,7 Mio. € (ALTEN GmbH: 1,8 Mio. €, TH Cologne 0,9 Mio. €)
- **Duration:** 04/2016 – 03/2019 (36 months)
- **Consultants:** ALTEN GmbH: 10-12 / TH Cologne: 5-7

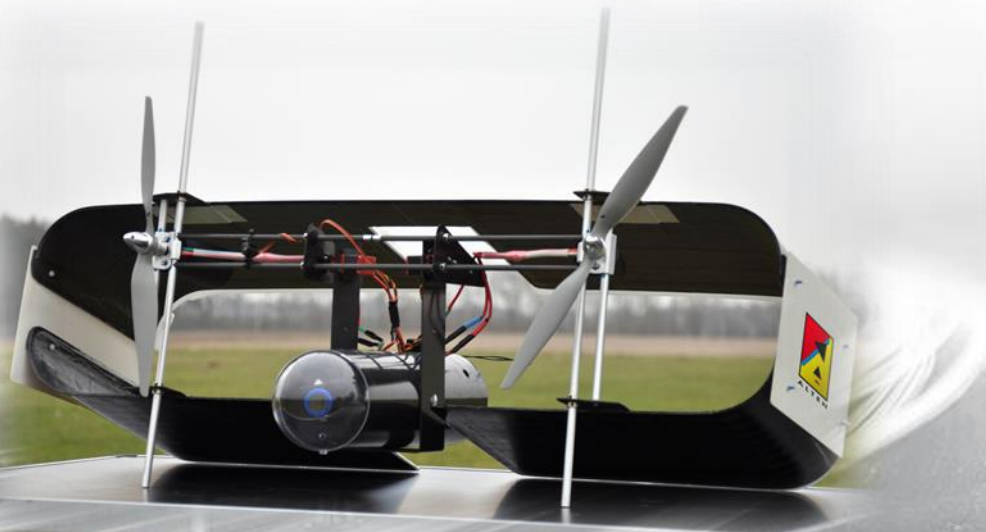
> WWW.SR4WHEEL.DE



Development of a hybrid Vertical Take-off and Landing Unmanned Aerial Vehicle (VTOL-UAV)

- **Supported with public grant by Lower-Saxony & EU**
- **Funding programme IFP/ EFRE**
- **Project partner:** Syrphus GmbH
- **Project budget:** 1.000.000 EUR
- **Project duration:** 24 month
- **Involved Research Engineers:** 5

- **ALTEN Tasks:**
 - Requirements capturing
 - CAD-/ CFD-Design
 - HW-Development
 - SW-Development
 - Wiring
 - Testing



10 reasons for ALTEN to be your next employer



1

Company culture

Team spirit, commitment and flexibility determine our actions.

2

Cooperation with top customers

OEM / 1stTier in key industries

3

Empower your skills and knowhow

through a diverse project landscape

4

All-round support from the beginning

coaching, personnel development, events, and more

5

Permanent position

with attractive conditions

6

Extras

such as operating pension scheme and supplementary health insurance

7

Work-Life-Balance

Be

8

International work environment

room for self development in a global network

9

Safe future

through a long-term growth strategy

0

Strong community

be a part of our team of over 2,400 colleagues in Germany