

Aviation





ESG – Partnership – System Competence – Innovation

For over four decades, ESG has been one of the leading German companies for the development, integration and operation of electronic and IT systems. As an independent technology and process partner we provide high quality services in system and software development, logistics, training and consultancy for our customers in the military, public authorities and industry. We deliver qualified solutions in the areas of aviation, military logistics, vetronic and naval systems, IT and communication, automotive, telecommunications, traffic and transport, industrial goods and commercial vehicles.

In the 21st century with its mobile society, the aircraft industry plays a central role in the development of future technologies. The roots of our company lie in this dynamic field.

As a design organisation according to EASA the business area Aviation is a partner in the development and integration of avionic systems for aircraft and helicopters, their ground and special systems. With our logistic services, we ensure the operational reliability, availability and safety of these systems during their entire lifecycle.

ANALYSES, STUDIES, SYSTEM COMPARISONS

Our customers profit from our extensive expert knowledge, our realisation know-how and our consulting expertise, which extend over the whole product lifecycle. As a result of our hardware neutrality and independence from manufacturers, we offer objective analyses, system comparisons and technology consulting, ranging from requirements analysis through to product support. Our highly qualified staff are experts with extensive and contemporary knowledge in the fields of technology and processes. With the help of modern simulation tools and demonstrators, accurate information is ensured on technical developments and process optimisations, for the minimisation of development risks and for decision support.



RESEARCH & TECHNOLOGY

We support our customers with analyses, studies, technological research projects and prototypes. For this purpose, we develop and operate demonstrators, simulators and flying test-rigs. Our cockpit mock-ups and ground stations for airborne systems are equipped with task-specific input devices and displays featuring the latest technology. We simulate the most diverse aircraft, helicopters, cockpit functions, tasks and missions and test their functionality prior to development, for example for unmanned aircraft.

TECHNOLOGY AND PROCESS CONSULTING SERVICES

- ▶ Technical and operative analyses
- ▶ Technical and logistic consulting for system definition and procurement
- ▶ Consulting and design for product support of aircraft
- ▶ Preparing customer-specific program planning and tender documents
- ▶ Consulting/support of the customer for system acceptance and rollout, including training
- ▶ Conceptual design of various measures for lifetime extension

- ▶ Customer-oriented technology consulting and feasibility studies
- ▶ Development of experimental systems
- ▶ Optimisation of human-machine interfaces using rapid prototyping
- ▶ Early verification of mission and system concepts
- ▶ Development optimisation regarding time and costs



SYSTEMS DEVELOPMENT

In the area of systems development it is our aim to create practical as well as innovative designs for complex systems. We guarantee an optimal interaction between the individual components of an avionic system and ensure that not only do the sensors, data administration systems and communication systems record high volumes of information in real-time, but also that this data is processed and presented to the user through an ergonomic human-machine interface appropriate to the specific situation.

SYSTEMS DEVELOPMENT SERVICES

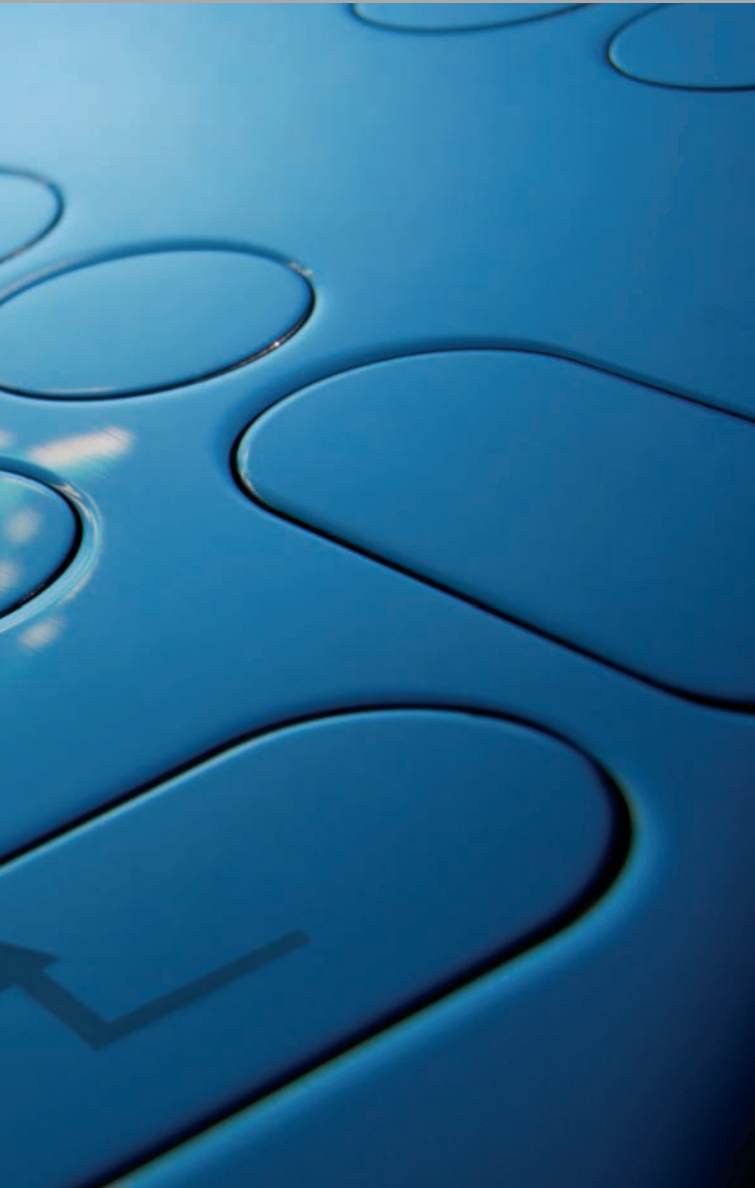
- ▶ System analysis, system design and specification
- ▶ Equipment and system engineering
- ▶ System integration
- ▶ Laboratory/platform integration, including test
- ▶ Rig and test bench realisation
- ▶ Certification/approval

SOFTWARE DEVELOPMENT

The reliability of modern avionic systems can only be ensured when all individual components work together in an optimal way. Sophisticated functions are realised by real-time capable software. The systematic development process for software comprises numerous closely connected sub-disciplines in the areas of IT and project management. Our services cover the entire development and operation cycle of software – beginning with the planning up to the deployment, including support and maintenance during use.

SOFTWARE DEVELOPMENT SERVICES

- ▶ Software architecture and design
- ▶ Software implementation
- ▶ Software integration and test
- ▶ Software maintenance and modification
- ▶ Documentation
- ▶ Certification



The business area Aviation is the centre of expertise for systems and software development and product support. Technically demanding, innovative and high-performance avionic systems are the decisive factors for the operational reliability and success of modern aircraft. Due to increasing automation and the constantly increasing flow of information that the user is faced with, the interactions, architectures and degradations of these safety critical systems become more and more complex.

PRODUCT SUPPORT

Our services begin with concepts for Integrated Logistic Support (ILS) and Logistic Support Analyses (LSA), which optimise the costs during the course of the lifecycle and ensure the highest levels of operational availability. On this basis, ESG offers services throughout the entire lifecycle of complex technical systems.

With the help of efficient processes and modern standards, we ensure the availability and effectiveness of complex systems. We are a partner for the entire Product Support, technical logistic services and technical development support.

PRODUCT SUPPORT/LOGISTIC SERVICES

- ▶ Product Support/technical logistic and technical development support
- ▶ Documentation
- ▶ Analysis of operational and maintenance data
- ▶ Obsolescence and hazardous substance management
- ▶ Concepts for operational life extension

As a design organisation according to EASA we take on the responsibility for development, integration and certification of customer-specific systems for both small and large modifications for fixed-wing and rotary-wing aircraft and for the supervision of these systems as general contractor during the entire deployment by means of our individual Product Support services. Close cooperation with the customer, our independence and neutrality guarantee the integration of the most suitable components and thus an optimal and innovative result.



DESIGN ORGANISATION

As reliable and experienced experts, we support our customers in finding solutions to special requirements and problems. We deliver customised solutions by means of individually developed, integrated and implemented systems. Our success is based on the constant exchange of information and cooperation with our customers on a partnership basis, as well as many years of experience in the aviation and military industry. Additionally, our services benefit from technology transfer with other ESG divisions across all sectors and the optimal and innovative synergetic effects are then available for our customers. We offer integrity and confidential dealings in the handling of all security-related issues.

QUALIFICATION:

- ▶ Certification according to DIN EN 9100/ISO 9001
- ▶ Design organisation according to EASA Part 21
- ▶ National design organisation
- ▶ Software development, among others according to RTCA/DO-178 B as well as V-model XT



TRAINING AND TRAINING RESOURCES

We offer extensive and customised training services. These cover all phases of the training programme: from analysis and conception through to the implementation of complex training topics. As a specialised systems company for avionic systems we know and understand the technical requirements in creating and implementing modern training resources for flying and technical personnel. On the basis of a modular architecture, we implement virtual desktop trainers and part task trainers for specific training topics as well as high-class simulators including the modelling of surroundings, terrain databases and simulations of tactical environs.

TRAINING SERVICES:

- ▶ Analysis of training/education requirements
- ▶ Training concepts, preparation and execution
- ▶ Computer- /Web-based training
- ▶ Virtual desktop trainers
- ▶ Part task trainers /flight training devices

MARKET SEGMENTS:

Our services cover the most diverse areas of military and civil aviation industries. The business area Aviation is divided up into the following units:

- ▶ Fixed-wing aircraft and UAV systems
- ▶ Rotary-wing aircraft and special systems
- ▶ Technology and cross-section programmes
- ▶ Civil systems

ESG SPECIALISED SYSTEMS (References):

- ▶ **Special High Altitude Parachute System:**
Development and integrated logistic support
- ▶ **MAT Mission Avionics Test Helicopter:**
Development of the „flying laboratory“
- ▶ **Equipment for Special Forces:**
Development and construction of airstrips for parachutists, rotary-wing aircrafts and airfreighters
- ▶ **PTA - Police Tactical Workstation**
Development and integration into police helicopters

