

ASES

Company Presentation

Aircraft-System-Engineering-Service (ASES)



Content

- ◆ **Overview**
- ◆ **Members**
- ◆ **Experience: Program Participations**
- ◆ **Service Details**
- ◆ **Service Specials**



Overview

- ◆ **Established: 2016**
- ◆ **Location: South of Germany, D-88175 Scheidegg**
- ◆ **Head Count: 6 Senior Engineers with 190 years experience in total**
- ◆ **Business:**
 - ◆ **Engineering Support for Aircraft Systems (refer also to Experience):**
 1. **System Engineering**
 2. **Design of Units and Components**
 3. **Technical Management**
- ◆ **Way of working:**
 - ◆ **Focused on Engineering**
 - **Target: Being part of the customers/partners engineering team**



Members

System	System Loads	Design
<p><u>System Engineer (ASES CEO)</u> 23 Years of Experience from all kind of Flight Control Systems. Specialist for complex simulation and controller layout Served for a long period as Head of Highlift Systems and Chief Engineer</p>	<p><u>System Loads&Stress Engineer</u> 40 Years of Experience from all kind of mechanical system equipment and associated structure. Worked on all Airbus Programms (Highlift, Primary Flight Controls, Trimmable Horizontal Stabiliser)</p>	<p><u>Design Engineer</u> 34 Years Design Experience of Highlift Power Control Units. Started Career with Airbus A300 PCU. Designed first VDHM PCU on commercial A/C (A380)</p>
<p><u>System Engineer</u> 33 Years Experience from all kind of Highlift Systems for Airbus, Bombardier, IAI, Embraer Started Career with Airbus A320 Highlift System Design</p>		<p><u>Design Engineer</u> 30 Years Design Experience of mechanical Actuators</p>
<p><u>Safety & Reliability Engineer</u> 30 Years Experience from all kind of Flight Control Systems and Equipment</p>		

Note: Team Members are not under full time contract

Aircraft-System-Engineering-Service (ASES)



Experience: Program Participations

- ◆ The following list shows some of the most important participations of the ASES members (before joining ASES)

Program	ATA Chapter	System Engineering	Design	Technical Management
Airbus A300 / A310 (WB)	27 (HLS, PFC) 29 52 57	yes	yes	-
Airbus A320 (SA)	27 (HLS, PFC) 29 52 57	yes	yes	yes
Airbus A330 / 340 (LR)	27 (HLS, PFC) 29 52 57	yes	yes	-
Airbus A380 (WB)	27 (HLS, PFC) 29 52 57	yes	yes	yes
Airbus A400M	27 (HLS, PFC) 29 57	yes	yes	-
Airbus A350	27 (HLS) 29 57	yes	yes	yes
Boeing NAPD Research	27 (PFC)	yes	yes	-
Bombardier BD100	27 (HLS)	yes	yes	yes
Bombardier LJ200	27 (HLS)	yes	yes	yes
Bombardier Dash-7	57	yes	-	-
Dornier 328	27 (PFC)	yes	yes	-
IPTN N250	27 (HLS)	yes	yes	-
Sukhoi Superjet	27 (HLS)	yes	yes	-
VFW-Fokker MRCA	57	yes	-	-

Aircraft-System-Engineering-Service (ASES)



Experience: Program Participations

- ◆ The following list shows some of the most important participations of ASES:
 - ◆ Definition of Highlift System Architecture for Chinese MA700 A/C
 - ◆ Performance Calculation, Simulation and Controller Layout for MA700 Highlift System
 - ◆ Certification Work with EASA for MA700 Highlift System

 - ◆ Definition of Highlift System Architecture for CRAIC CR929 A/C
 - ◆ Initial Performance Layout of CR929 Highlift Systems

 - ◆ R&D Project focused on Electro-mechanical Flight Control Actuators (EMAs) for commercial A/Cs

Service Details

◆ The following list gives the details regarding the three business area's:

1. System Engineering:

- ◆ Establishment of System Specifications (V&V Engineering)
- ◆ System Trade Studies (Costs, Weight, Reliability)
- ◆ System Load Calculations
- ◆ Reports (i.e. Definition of Loading Requirements)
- ◆ Dynamic System Simulation based on proven model parts
- ◆ Closed Loop Controller Design (Single loop, state space)
- ◆ Monitoring Design for Flight Control Systems
- ◆ Establishment of PSSA, SSAs, FMEAs, FTAs
- ◆ In-Service Trouble Shooting
- ◆ Flight Test Definition and Support



Service Details

2. Design:

- ◆ Detailed Design Proposal for Units
- ◆ Establishment of Unit Specifications
- ◆ Detailed Layout of Power Control Units and Actuators (Hydraulic / Electric)
- ◆ Proof read of customer design

3. Technical Management

- ◆ Development Process Consulting
- ◆ Cost (RC, NRC) and Team Resource Evaluation
- ◆ Contractual and Commercial Consulting
 - ◆ SOWs
 - ◆ Development Plans, etc.
 - ◆ Development Costs Evaluation
- ◆ Proposal Evaluation
- ◆ Certification Support (Work with Authorities)



Specials

◆ Regarding System Specifications and Dynamic Simulations

◆ ASES possesses a large amount of performance data:

- ◆ Proven (by comparison with tests) simulation blocks and sub-models for all kind of flight control applications
- ◆ Performance data (efficiency numbers, drag torques, etc..) for all kind of units for flight control systems

◆ Regarding Safety and Reliability Documentation

◆ ASES possesses a large amount of reliability data:

- ◆ Proven in-service data

◆ Regarding Technical Management

◆ ASES possesses a large amount of commercial data:

- ◆ NRC data for ATA 27 system development
- ◆ RC data for ATA 27 systems and units

