The conference proceedings will include the full papers associated with the oral presentation and, if provided, with the posters. A colour printed version and an electronic version will be given to each registered participant. The proceeding are registered with an ISBN number. After the conference, the proceedings will be available for purchase (contact: Patricia.jarry@insa-toulouse.fr).

Abstracts accepted for oral presentation in plenary session

EMADEF: a fully comprehensive analytical tool for the initial design of electro-mechanical servo-actuators for primary flight controls
G. JACAZIO, A. DELLACASA, A. ZUNINO, Politecnico di Torino, Italy

Design considerations and test of the flight control actuators for a demonstrator for an unmanned freight transportation aircraft
A. BIERIG, S. LORENZ, F. MÖLLER, C. HOFFMANN, German Aerospace Center (DLR), Germany

Methodologies and test-rig configurations for experimental improvement of aerospace flight control actuation systems
A. STEBLINKIN, A. SKRYABIN, L. KHALETSKY, E. EROFEEV, Central Aerohydrodynamic Institute (TsAGI), Russia

Problems with lifetime calculation for ball screw actuators in primary flight control systems
C. KUPFER, F. THIELECKE, Hamburg University of Technology, Germany
M. ROTTACH, Liebherr-Aerospace Lindenberg GmbH, Germany

Development of an innovative piezo actuated flow servovalve with additive manufacturing body
C. MAILHAN, J-L. BERTRAND, E. DOYEN, F. SOUBRAS, Zodiac Hydraulics, France

High fidelity model for efficiency calculation of ball screws for flight control actuators
A.C. BERTOLINO, G. JACAZIO, S. MAURO, M. SORLI, Politecnico di Torino, Italy

Spoiler and flap rotary EM actuation (REMA) implementation on a recently certified business aircraft
E. ZATLOFF, Curtiss-Wright Sensors and Control Actuation Group, United States

Aircraft control using actuator current
F. VAN DER LINDEN, G. LOOYE, T. S. C. POLLACK, German Aerospace Center (DLR), Germany

Automated measurement of backlash and stiffness in electro-mechanical flight control actuation
C. SCHALLERT, R. KOWALSKI, German Aerospace Center (DLR), Germany
M. ROTTACH, A. DORKEL, Liebherr-Aerospace Lindenberg GmbH, Germany

The hydraulic infinite linear actuator applied to a high lift system
M. LANDBERG, T. JERLVALL, Saab Aeronautics, Sweden
P. KRUS, Linköping University, Sweden

Optimization of primary flight control actuation system using parametric sizing models of actuators, power electronics and structural analysis
S. DELBECQ, J. PIATON, B. DAGUSE, Safran Electronics & Defense, France

Virtual testing of aircraft hydraulic systems
L. NORDMANN, F. THIELECKE, Hamburg University of Technology, Germany
P. LÜCKEN, M. HAMM, Airbus Operations GmbH, Germany

Reliability of the electronics for actuation?
M. TODESCHI, Airbus Operations SAS, France

Linear EMA HM using oil detection
F. VAN DER LINDEN, German Aerospace Center (DLR), Germany
A. DORKEL, Liebherr-Aerospace Lindenberg GmbH, Germany

Active/active aileron EMA system with optimised power supply architecture
M. ROTTACH, T. IMMLER, R. LADNER, Liebherr-Aerospace Lindenberg GmbH, Germany
A. ENGLER, N. MAHDAVI, Liebherr-Elektronik GmbH, Germany
R. KOWALSKI, German Aerospace Center (DLR), Germany

Innovative system integration test rig (iron bird) for the development of regional aircraft technologies
P. BRUNET, A. DEBIANE, CERTIA, France
J-C. MARE, Institut Clément Ader (ICA), Institut National des Sciences Appliquées (INSA), France
G. JACAZIO, Politecnico di Torino, Italy

Pseudo direct drive electrical machine for primary flight control surface actuation
R. DRAGAN, R. CLARK, Magnematics Ltd, United Kingdom
E. HUSSAIN, M. ODAVIC, K. ĀTALLAH, The University of Sheffield, United Kingdom

State and development of actuation system and component in China
X. LIU, Y. FU, J. FU, H. QI, L. YU, Beihang University, China

A model-based systems engineering approach to explore flight control system architecture variants in conceptual design
S. LISCOCUT-HANKE, A. JERYARAJ, Concordia University, Canada

Research on the operating modes and force fighting of hybrid actuation system based on EHA/SHA
Z. LIU, S. XU, Z. BAI, Beijing Aeronautical Science &Technology Research Institute of COMAC (BASTRI), China
VELAE a new generation of very high temperature electro-valve
S. NOURY, Equip’Aero Technique, France

AIRBUS Research and Perspectives for Aircraft Control Actuation
N. LARRIEU, X. LAMOUSSIERE, Airbus Operations SAS, France

Electromechanical actuation for landing gear application: A case study on end-stroke impact in case of high speed free-fall emergency extension
G. PISPOLA, D. CURRI, UmbraGroup S.p.A., Italy
M. PALMIERI, C. BRACCESI, F. CIANETTI, University of Perugia, Italy

Electro-hydraulic system architectures for more electric aircraft - Comparison of central and zonal power packages
N. TROCHELMANN, F. THIELECKE, Hamburg University of Technology, Germany
R. BEHR, M. HAMM, Airbus Operations GmbH, Germany

Electromechanical actuator for thrust reverser cowl opening system
R. MACIAS, E. NOVILLO, J. FERNANDEZ, Compañía Española de Sistemas Aeronáuticos (CESA), Spain

Highly responsive micro-EMA with regenerative recovery
A. BEESLEY, P. PAINTER, C. WHITLEY, Triumph Group, United Kingdom

Electromechanical actuator with high reliability for aircraft applications
V. URSU, V. URSU, LLC "REC"OSA", Russia

Fault tolerant control system of the direction runway dynamics of small aircraft with hydraulic differential brakes
G. DI RITO, R. GALATOLO, F. SCHETTINI, Universita di Pisa, Italy

Flutter suppression actuator design for the FLEXOP demonstrator aircraft
D. TEUBL, I. GÖZSE, B. VANEK, Institute for Computer Science and Control (MTA SZTAKI), Hungary

A novel industry-oriented EMA model for ball screw optimised design including motor torque response and friction
D. CULLA, I. IGLESIAS, Tecnalia Research and Innovation (TRI), Spain
X. KORTA, Korta Group, Spain

PID control of a fixed displacement electro-hydraulic static actuation system using accumulator
N.P. MANDAL, National Institute of Technologie Patna (NIT Patna), India
S.K. HATI, Asansol Engineering College, India
N. MONDAL, R. SAHA, D. DANYAL, Jadavpur University, India

Physical modeling and bond graph combined approach to guide failure analysis in an aircraft hydraulic brake system
M. MAIA NETO, L. GOES, Instituto Tecnológico de Aeronáutica [São José dos Campos] (ITA), Brazil

Abstracts accepted as poster presented during the coffee breaks

Development of a fly-by-wire servocontrol in today's agile business environment - Focus & imperatives
C. FENNER, T. LAMMERING, Liebherr-Aerospace Lindenberg GmbH, Germany

Implications of the use of flux-switching motors for aerospace actuation systems
T. SAWATA, P. SANGHA., UTC Aerospace Systems, United Kingdom

A novel multi-fault diagnosis method of electromechanical actuator based on EEMD and DSmT
L. SUN, Beihang University, China

Wireless and autonomous sensor for strut load monitoring
T. HEBRARD, SKF Aerospace, France

Performance analysis of electro-hydraulic actuator based on optimal control algorithm
Z. ZHANG, L. YU, Beihang University, China

From TRL 4 to TRL 6 and “permit to fly” thanks to DO-254
I. EGUIZABAL, Tecnalia, Spain

Superconducting electrical machines for full-electric aircraft
N. IVANOV, K. KOVALEV, V. PENKIN, S. ZHURAVLEV, R. ILYASOV, D. DEZHN, J. NEKRASOVA
E. TULINOVA, I. DEMOCHKO, I. KOBZEA, Moscow Aviation Institute (MAI), Russia

Identifying enhancement potentials of actuation systems through functional architecture analysis using a criticality index with function hazard assessment and failure propagation analysis
L. AKOTO CHAMA, O. BERTRAM, German Aerospace Center (DLR), Germany

Rapid prototyping method based on model-driven of flight control electric actuation system
W. WANG, S. CAO, Q. CHEN, P. LEI, AVIC Qing’an Group Co. Ltd, China

First practical evaluation of a complete Fail-safe and 100% fault-tolerant inverter for critical load in aerospace application
F. RICHARDEAU, S. VINNAC, F. MOSSER, LAPLACE - INP Toulouse - Univ. P. Sabatier - CNRS, France
A. BOETSCHE, S. CHILLON, H. HORS, ZODIAC Actuation Systems, France
M. KABALO, B. IMBERT, Toulouse Tech Transfert, France

Environment tests and traceability analysis for EHA EBHA and EMA of civil airplane
X. LI, Z. BAI, S. XIONG, Y. LEI, Beijing Aeronautical Science &Technology Research Institute of COMAC (BASTRI), China
Flight control system architecture comprehensive evaluation based on electrical actuators for more electric aircraft
Z. BAI, Y. LEI, L. ZIDONG, X. LI, Beijing Aeronautical Science & Technology Research Institute of COMAC (BASTRI), China

Power cycling reliability and thermal performances of SiC power modules
J-P. BERTINET, THALES, France

Development of flight control actuation systems based on EMAs for regional aircraft under cleansky2
E. NOVILLO, R. MACIAS, J.A. FERNANDEZ PLAZA, F. AGUADO, Compañía Española de Sistemas Aeronáuticos (CESA), Spain