

Preliminary program of the 10th International Conference on
Recent Advances in Aerospace Actuation Systems and Components
May 21-23, 2025, Hotel Mercure Compans-Cafarelli, Toulouse, France

This is the preliminary program. PLS note that:

- this program may be subjected to little changes according to organizational constraints
- All the presentations listed below have a full paper in the conference proceedings (see page number)

Wednesday 21 May, 2025

8.00 – 9.00 am, Registration

9.00 - 9.05 am, Welcome address - Conference opening (Chairman Pr J-C. Maré)

9.05 - 10.35 am, Session 1 - Conceptual design (Chairman Pr J-C. Maré)

Key Considerations for Future Distributed Flap Drive Systems based on Comparisons with an Electric Cargo Door Actuation System (page 143)

Brady M., Fleddermann A., Haserodt J., Airbus Operations GmbH, *Germany*

An Actuation System Utilizing Preemptive Scheduling Technology for Unmanned Aircraft (page 37)

Landberg M., Braun R., Sethson M., Krus P., Division of Fluid and Mechatronic Systems, Linköping University, *Sweden*

Magnetically Geared Blade Pitch Control Actuation – Test Results (page 158)

Dragan R., Barrett R., Wilson G., Kinghorn R., Powell D., Calverley S., Magnomatics Limited, *United Kingdom*

10.35 - 11.00 am, Coffee break

11.00 - 12.30 am, Session 2 - Recent applications (Chairman Pr E. Bideaux)

The Thrust Vector Actuation Systems (TVAS) of Ariane 6 (page 194)

Lavatelli A., Alexandre P., De Coster F., Ronchain P., Vadala G., SABCA, *Belgium*

Electrical Actuation Technology for Aircraft Valves using Thermal Effects (page 78)

Montin N., Noury S., Equip'Aero Technique, *France*

Failure Transients Characterization for the Qualification of the Fail-safe EMA used for the Airbus RACER Flap Movables (page 100)

Di Rito G., Kovel R., Luciano B., Salvi F., Nardeschi M., Università di Pisa/Airbus Helicopters/AESIS/Umbragroup, *Italy/France*

12.30 am - 2.00 pm, Lunch

2.00 - 3.30 pm, Session 3 - Conceptual design (Chairman Pr M. Budinger)

Dual EMA Actuation System for Flight Control Surface (page 66)

Pinedo D., Fernandez J. A., Gallego A., Novillo E., Compañía Española de Sistemas Aeronáuticos, S.A.U, *Spain*

Advances in Mechanical Transmission Design for Flight Control EMAs (page 32)

Pispola G., Corradi G., Lavatelli A., Telteu D., Umbragroup s.p.a./SABCA, *Italy/Belgium*

Control Based Enhanced Regenerative Modes for Hydraulic MultiActuator Systems (page 43)

Bideaux E., Tardy G., Smaoui M., Lanoix A., Laboratoire Ampère, INSA Lyon/Volvo Compact Equipment/Cerebrum Ingénierie, *France*

3.30 - 4.00 pm, Coffee break

4.00 - 5.30 pm, Session 4 - Faults and failures (Chairman Pr G. Jacazio)

Identifying Key Predictors of Failure in Electro-Mechanical Actuator (page 127)

Raunio V., Alenius M., Partap Singh V., Minav T., Faculty of Engineering and Natural Science, Tampere University, *Finland*

Validation of Skew Detection Concepts for Future Leading-Edge Slats (page 200)

Krall K., Thielecke F., Hamburg University of Technology, Institute of Aircraft Systems Engineering, *Germany*

Experimental Investigation of Oscillating Bearings in EMA by Using Accelerated Lifetime Tests (page 93)

Seferli T., Kowalski R., Bierig A., Dreyer N., DLR German Aerospace Center /Liebherr-Aerospace Lindenberg GmbH, *Germany*

Thursday 22 May, 2025

8.30 – 10.00 am, Session 5 - Components (Chairman M. Besliu)

Prestressed PZT Actuators for Electromechanical Resonant De-icing (page 173)

Sabathé Y., Budinger M., Pommier-Budinger V., Institut Clément Ader/ENAC ISAE-SUPAERO ONERA, Toulouse, *France*

Demonstration of Roller Screw Technology as a Cost-effective Solution for More Active Primary Flight Controls of Next Generation Aircrafts (page 50)

Groll A., Montereymard Y., Latarte R., Schaeffler, *France*

A Systematic Approach to Sealing for Low Molecular Weight Gas in Static Applications (page 27)

Andersen T., Bashford P., Trelleborg Aerospace/Trelleborg Sealing Solutions, *Sweden/UK*

10.00 - 10.30 am, Coffee break

10.30 - 12.00 am, Session 6 - Electro-hydrostatic actuators (Chairman M. Todeschi)

Influence of the Spindle Flow Distribution Pair on the Performance of Micro Electro-hydrostatic Actuator (page 135)

Tong C., Zang Y., Li S., Ruan J., Zhejiang University of Technology, *China*

A Long-Life Electro-Hydrostatic Actuator in FAST (page 1)

Zhang P., Zeng S., Zhao S., Ning S., Chen K., Cao S., Zhao Y., Liu H., Yang Y., Beijing Institute of Precision Mechatronics and Controls, *China*

Modelling and Performance Validation of a Novel Fault-Tolerant EHA for Helicopter Flight Controls (page 166)

Sun M., Fu J., Wang C., Yu L., Wang W., Bai L., Beihang University/Avic, *China*

12.00 am - 2.00 pm, Lunch

2.00 - 3.30 pm, Session 7 - Health monitoring (Chairman Pr G. Di Rito)

Health Monitoring Analysis and Fault Prediction of Harmonic Drives for Electro-mechanical Flight Control Actuators (page 112)

Bertolino A. C., De Martin A., Guida R., Jacazio G., Sorli M., Politecnico di Torino, *Italy*

Health Monitoring System for Electromechanical Actuation System Pre-Flight Status Assessment (page 119)

Gomez de Mariscal B., Villar Dominguez A., Gallego A., Fernandez J. A., Novillo E., Lopez de Calle K., Fernandez A., Egaña I., Compañía Española de Sistemas Aeronáuticos, S.A.U./Fundacion Tekniker, *Spain*

Developing a PHM System for Legacy Actuators - the Case of the A320 Spoiler (page 58)

Autin S., De Martin A., Guida R., Jacazio G., Collins/Politecnico di Torino, *France/Italy*

3.30 - 4.00 pm, Coffee break

4.00 - 5.30 pm, Session 8 - Control (Chairman Pr F. Thielecke)

Laboratory Testing of Torque Control of Electro-Mechanical Flight Surface Actuation including Friction Compensation (page 150)

Schallert C., German Aerospace Center (DLR e.V.), *Germany*

Sensor Fusion Controller for Fault Tolerant EMA (page 180)

Wang R., Vanderweide D., Wallace R., Eaton, *United States*

A Novel Dual Redundancy Electronic Controller for UAV's Landing Gear Retraction/Extension Actuation System (page 16)

Cao S., Feng W., Qiao S., Meng S., Guo Q., Zhang P., Zhao S., Beijing Institute of Precision Mechatronics and Controls, *China*

6.30 - 11.00 pm. Private visit of Toulouse Museum and conference banquet at Le Moaï restaurant

Friday 23 May, 2025

8.30 – 10.00 am, Session 9 - Miscellaneous applications (Chairman I. Hazyuk)

Fuel Metering for Hydrogen Powered Aircraft (page 107)

Plummer A., Adeyemi D., Burden D., University of Bath/Moog Aircraft Group Tewkesbury, *United Kingdom*

A Novel High-Performance Active Damper for Helicopter Gearbox Vibration Control (page 20)

Bertolino A. C., Sorli M., Porro P. G., Galli C., Politecnico di Torino / Elettronica Aster SpA, *Italy*

Dynamic Model of a Resonant Electromechanical De-icing System (page 71)

Pothin J., Reyssat A., Budinger M., Pommier-Budinger V., Institut Clément Ader/ENAC ISAE-SUPAERO ONERA, *France*

10.00 - 10.30 am, Coffee break

10.30 - 12.00 am, Session 10 - Modelling and simulation (Chairman Pr A. Plummer)

Electromechanical Actuator with Integrated ECU for Aircraft Cooling System (page 84)

Villanueva A., Camacho D., Macias R., Novillo E., Aguado F., Fernandez J. A., Compañía Española de Sistemas Aeronáuticos, S.A.U., *Spain*

A Model-Based Design Approach for Preliminary Sizing of Electromechanical Actuators in Primary Flight Control Systems (page 7)

Schroeder L., Borges L., Goes L. C., Instituto Tecnológico de Aeronáutica/EMBRAER, *Brazil*

Servovalves Models for Customers (page 188)

Achille R., Maré J.-C., Politecnico di Torino/Institut Clément Ader, INSA Toulouse, *Italy/France*

12.00 - 12.15 am, Conference closure