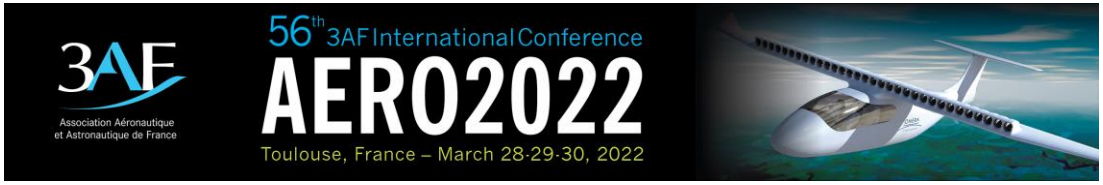
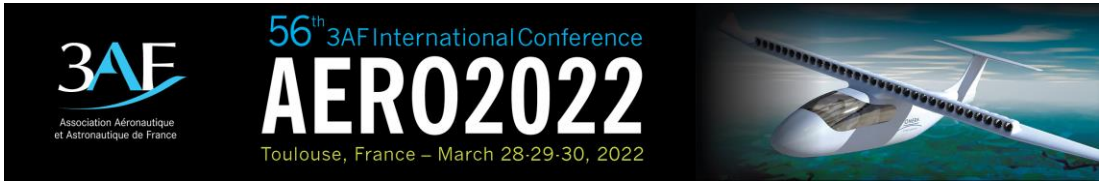


MONDAY, MARCH 28

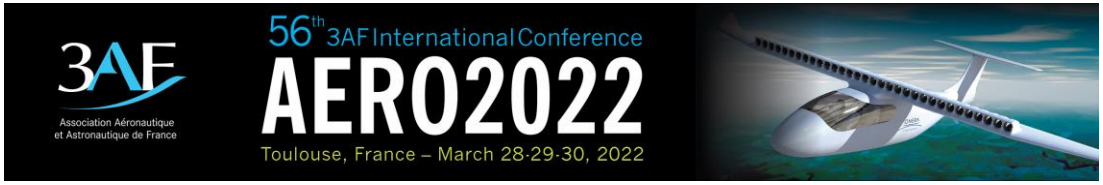
08:45	**CONFERENCE WELCOME** **Olivier LESBRE, Director - *ISAE-SUPAERO*** **Robert LAFONTAN, Vice-President - *Association Aéronautique et Astronautique de France (3AF)*** **Véronique ROCA, Head of CoC Flight Physics - *Airbus***
09:15	**KEYNOTE CONFERENCE N°1** **Urban aerodynamics for a healthier, energy-efficient and nature-friendly environment** **Bert BLOCKEN (*Eindhoven University of Technology & KU Leuven*)**

	SESSION 1A: Propulsion - Intake **Chairperson: François FALEMPIN** **(*MBDA*)**	**SESSION 1B: Drag reduction. Instability & Transition** **Chairperson: Chris ATKIN** **(*University of East Anglia*)**	**SESSION 1C: Emerging fields. Deep learning & Data driven methods** **Chairperson: Michaël BAUERHEIM** **(*ISAE-SUPAERO*)**	**SESSION 1D: Wind engineering & Industrial aerodynamics** **Chairperson: Olivier CADOT** **(*University of Liverpool*)**
10:00	Crosswind-induced shock-wave/boundary-layer interactions in subsonic inlets **L. DICKINSON** (*University of Cambridge*)	High-speed wind tunnel investigation of major aerodynamic challenges for HLFC technology **F. MÉRY** (*ONERA*)	Empirical performance and robustness evaluation of Deep Reinforcement Learning for a pitch control problem **B. MARTIN** (*ISAE-SUPAERO*)	Experimental measurements in an ideal room to limit the aerosol concentration by means of ventilation and air cleaning **L. XIA** (*Eindhoven University of Technology*)
10:25	Highlight-curvature and massflow sensitivity of transonic intakes at climb **C. O'PRAY** (*University of Cambridge*)	Control of laminar turbulent transition using wall suction through a porous metal foam **B. EGRETEAU** (*ONERA*)	Deep Learning and reduced order models for the compressible flow over a transonic RAE 2822 airfoil: A comparative study **M. BAUERHEIM** (*ISAE-SUPAERO*)	Wind tunnel measurements of cross-ventilation flow in a realistic building geometry **M. SUDIRMAN** (*Eindhoven University of Technology*)



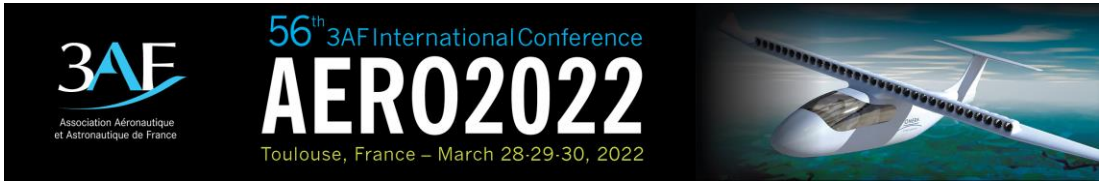
MONDAY, MARCH 28

10:50	Capturing intake ground vortex periodic patterns with affordable CFD simulations **S. RAYNAL** (*Capgemini Engineering*)	Effect of tolerances of surface irregularities on laminar-turbulent transition for HLFC wings **A. FRANCO** (*DLR*)	Airframe induced flow suppression effects on turbofan engines **M. BERENS** (*TU Wien*)	Fluid-structure instability of a pendular 3D bluff body in a turbulent flow **Y. HAFFNER** (*CSTB*)
11:15	Intake ground vortex ingestion: an investigation of intake size and wind angle of incidence on vortex characteristics **R. MENDONCA E COSTA** (*Capgemini Engineering*)	Boundary layer transition over low Reynolds number rotors: Effects of freestream turbulence and roughness **T. JAROSLAWSKI** (*ONERA*)	Data-driven augmentation of a RANS turbulence model for transonic flow prediction **F. JÄCKEL** (*DLR*)	CFD modelling for drag reduction on ocean fifty multihull class **A. BAYLE** (*Capgemini Engineering*)
11:40	Experimental characterization of intake ground vortex ingestion under crosswind conditions in wind tunnel **S. COURTINE**(*CSTB*)	Effect of isolated holes on the laminar-turbulent transition of an incompressible boundary layer **J. METHEL** (*ONERA*)	Data driven calibration of RANS heat transfer prediction on a curved rough surface **K. IGNATOWICZ** (*Ecole de Technologie Supérieure*)	
12:05	**LUNCH**			



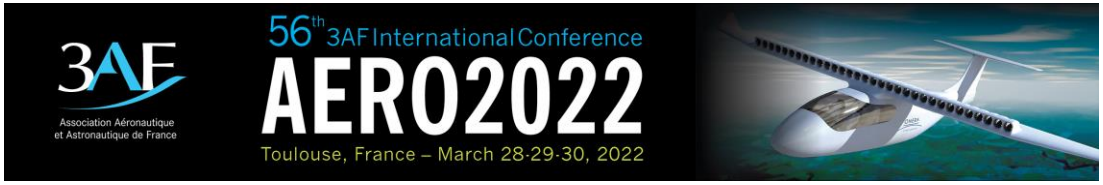
MONDAY, MARCH 28

13:30	**KEYNOTE CONFERENCE N°2** **Expanding natural laminar flow for reduced aircraft emissions** **Jeffrey CROUCH (*Boeing*)**			
	SESSION 2A: Propulsion. Novel Architecture, Design & Optimisation **Chairperson: Sébastien DUPLAA** **(*ISAE-SUPAERO*)**	**SESSION 2B: Drag Reduction. Instability & Transition** **Chairperson: Estelle PIOT** **(*ONERA*)**	**SESSION 2C: Emerging Fields. Bio-inspiration & Morphing** **Chairperson: Marianna BRAZA** **(*IMFT*)**	**SESSION 2D: Automotive** **Chairperson: Philippe GILOTTE** **(*Plastic Omnium*)**
14:15	Towards the design and optimisation of future compact aero-engines: Intake/fancowl trade-off investigation **F. TEJERO** (*Cranfield University*)	Neural prediction model for transition onset of a boundary layer in presence of 2D surface defects **A. ROUVIERE** (*ONERA*)	On bio-inspired induced drag reduction techniques **E. GOWREE** (*ISAE-SUPAERO*)	Adaptive drag reduction of a flat-backed Ahmed body in variable pitch and cross-wind configurations with trailing edge spoilers **Y. FAN** (*University of Liverpool*)
14:40	Aerodynamic Optimisation of Civil Aero-Engine Nacelles by Dimensionality Reduction and Multi-Fidelity Techniques **F. TEJERO** (*Cranfield University*)	Analysis of bypass transition process using Large Eddy Simulations **A. VEILLEUX** (*ONERA*)	Effect of sharp edges on the unsteady flow and aerodynamic performances of a boxfish, towards bio-inspired low-drag bluff bodies **M.-L. VIOLLET** (*ISAE-SUPAERO*)	CFD analysis of computational parameters on 3D steady RANS simulations of the DrivAer model **P. QIN** (*Eindhoven University of Technology*)
15:05	Aerodynamic optimization of the exhaust system of an aft-mounted boundary layer ingestion propulsor **J. MATESANZ-GARCÍA** (*Cranfield University*)	Numerical study of boundary-layer transition in a high-subsonic organic vapor flow **A. BIENNER** (*Arts et Métiers - ParisTech*)	Spanwise lift and gust control via arrays of bio-inspired individually actuated pneumatic flaplets **A. COURT** (*City, University of London*)	
15:30	**COFFEE BREAK**			



MONDAY, MARCH 28

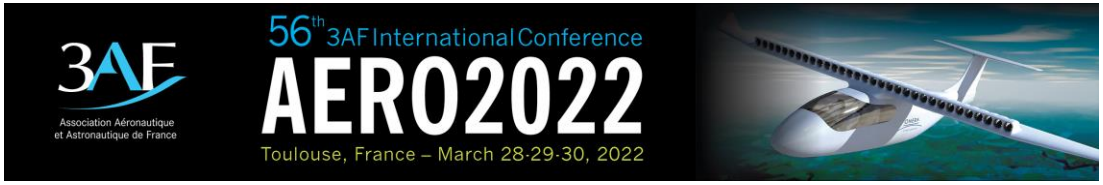
16:00	Analysis of a conceptual blended Wing Body Aircraft: BLI engine enstallation effects **B. COYLE** (*ISAE-SUPAERO*)	On the coupling of a γ-based transition transport model to the negative Spalart-Allmaras turbulence model **D. FRANÇOIS** (*DLR*)	Bio-inspired vortex-lift for enhanced manoeuvrability **M. BAUERHEIM** (*ISAE-SUPAERO*)	New eCar Chilowsky **M. AGUILAR** (*Xplorair Aerospace*)
16:25	Development of a panel method for preliminary design of Aero-Propulsive Systems **A. JOKSIMOVIĆ** (*ISAE-SUPAERO*)	Characterisation of bursts in a turbulent boundary layer over circular cavities **F. SCARANO** (*ISAE-SUPAERO*)	Physical analysis on the transonic interaction of electroactive morphing concepts on an A320 type wing by numerical simulation at high Reynolds number **C. JIMÉNEZ-NAVARRO** (*IMFT*)	Stabilizing effect of a simple base bleed on the bistable wake of a square-back bluff body **T. I. KHAN** (*Khalifa University of Science and Technology*)
16:50	Aerodynamic analysis of an All Electric powered blended Wing Body Aircraft with anti-bird strike device **T. WAN** (*Tamkang University*)	Boundary layer instabilities in swept flow around ONERA-D aerofoil **E. KITZINGER** (*ONERA*)	Three-dimensional effects of a morphing wing using electroactive trailing-edge actuations with hybrid RANS/LES (DDES-OES) modelling **A. MAROUF** (*ICUBE*)	Thrust effect in the aerodynamic sensitivity of an Ahmed body to cross winds **O. CADOT** (*University of Liverpool*)
17:15		Laminarity: A promising way to meet future environmental challenges **T. DELILLE** (*Dassault Aviation*)	Aerodynamic performance through frequency wobulation applied in the near trailing edge region of a morphing A320 wing at high Reynolds number **C. ROUAIX** (*IMFT*)	
17:40	**END OF SESSIONS**			
18:30	**WELCOME RECEPTION - Hotel de Ville, Toulouse**			



TUESDAY, MARCH 29

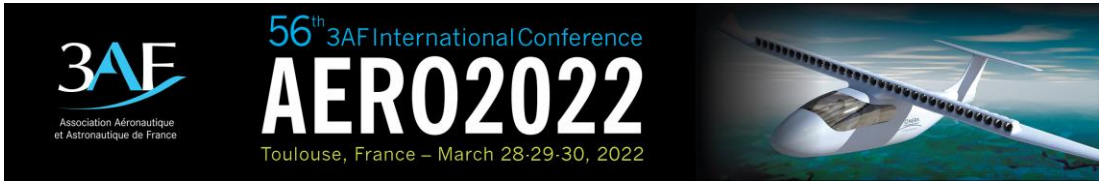
09:15	**KEYNOTE CONFERENCE N°3** **Climate impact of aviation and mitigation options** **Volker GREWE (*DLR, Institut für Physik der Atmosphäre*)**

	SESSION 3A: Propulsion. Propellers & Rotary machines **Chairperson: Philippe BEAUMIER (*ONERA*)**	**SESSION 3B: Load Control. Experimental techniques & flow separation** **Chairperson: Israel WYGNANSKI (*University of Arizona*)**	**SESSION 3C: Numerical methods** **Chairperson: Jean-François BOUSSUGE (*CERFACS*)**	**SESSION 3D: Climate impact** **Chairperson: Nicolas GOURDAIN (*ISAE-SUPAERO*)**
10:00	Airfoil importance for propeller optimized design **O. GUR** (*Israel Aerospace Industry*)	An investigation of data convergence and processing techniques in LASER Doppler Velocimetry **E. DURAN GARCIA** (*ESTACALAB*)	Aerodynamics exergy formulation for unsteady flows **J.-P. RUSCIO** (*ISAE-SUPAERO*)	Mixing of a jet in a vortex wake under atmospheric stratification **P. SAULGEOT** (*ONERA*)
10:25	Numerical and experimental investigation of wingtip-mounted propellers **C. NARDARI** (*Dassault Systèmes*)	Design of a freely rotating wind tunnel test bench for dynamic coefficients measurements **L. MULLER** (*ISL*)	Epsilon V3: Exergy-based aerodynamic analysis tool for CFD and WTT data **M. A. AGUIRRE** (*ISAE-SUPAERO*)	Impact of global warming on aircraft aerodynamics and engine thrust at take-off conditions **S. SALLES** (*CERFACS*)
10:50	Proposed active flow enabled hybrid tilt propeller / tilt wing aircraft **L. TAUBERT** (*University of Arizona*)	A new wind tunnel for bypass transition design, manufacturing and characterization **Y. DASWANI** (*ONERA*)	Exergy analysis of a delta wing: a challenging test case **M. A. AGUIRRE** (*ISAE-SUPAERO*)	Exploring climate-optimized trajectories in order to reduce aviation's climate impact **S. MATTHES** (*DLR*)
11:15	**COFFEE BREAK**			



TUESDAY, MARCH 29

11:45	S-duct turbomachinery simulations using the Lattice Boltzmann Method **T. GIANOLI** (*CERFACS*)	Wind-tunnel-in-the-loop optimization of separation control parameters - An exploratory study **M. THIEME** (*TU Berlin*)	Numerical aerodynamic performance assessment of HLFC wing configurations using far-field drag analysis **I. PETROPOULOS** (*ONERA*)	Aviation and climate: the state-of-the-art **J. FONTANE** (*ISAE-SUPAERO*)
12:10	On the possibility of new design solution for UHBR. Extension to the counter-rotating propellers **C. SANDU** (*COMOTI*)	Unsteady CFD simulations of a synthetic jet for flow control around a high-lift wing-flap system **H. D. TRUONG** *(ICUBE*)	P-design improvement using the DPSM method **J.-P. BARBOT** (*Laboratory SATIE*)	
12:35		Optimizing the internal design of a miniaturized fluidic oscillator for active flow control over a scaled NACA-4412 airfoil **G. LOPEZ QUESADA** (*Institut Clément Ader*)	Validation of a nonlinear Vortex Lattice Method for multiple wing sweep angle configurations **V. LIGUORI** (*ONERA*)	
13:00	**LUNCH**			

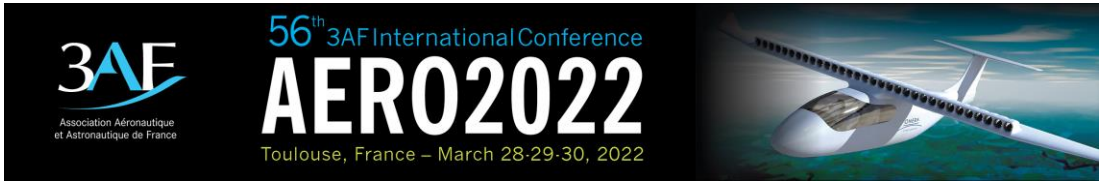


TUESDAY, MARCH 29

14:15	**KEYNOTE CONFERENCE N°4** **Towards energy efficient air transportation** **Denis DARRACQ (*Airbus*)**

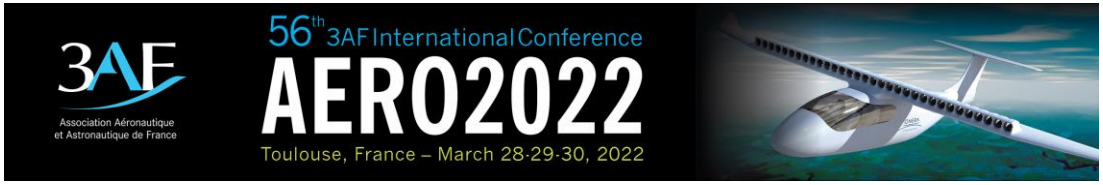
	SESSION 4A: Aerodynamics design & Optimisation **Chairperson: Eric LAURENDEAU (*Polytechnique Montréal*)**	**SESSION 4B: Load control. Perturbation & Unsteadiness** **Chairperson: Valérie FERRAND (*ISAE-SUPAERO*)**	**SESSION 4C: Numerical simulations.** **Chairperson: Paola CINNELLA (*Sorbonne Université*)**	**SESSION 4D: Renewable energy** **Chairperson: Francis DUPOIRIEUX (*ONERA*)**
15:00	Aerodynamic shape optimization of a short-medium range Blended Wing Body Aircraft **Q. BENNEHARD** (*ONERA*)	Aerodynamic analysis of transitional wings encountering high amplitude streamwise gust **V. FERRAND** (*ISAE-SUPAERO*)	Evaluation of turbulence modelling for subsonic vortex interaction on multi delta wing configuration **E. GUILMINEAU** (*Centrale Nantes*)	Drag reduction of lift-type vertical axis wind turbine with Gurney flap by three-dimensional modification of slits **B. CHANDRA** (*University of The West of England*)
15:25	A L0 Aerodynamic model for aircraft multidisciplinary design and optimization process **F. MOËNS** (*ONERA*)	Development of nonlinear transverse wing-gust models for urban environments **C. BONNET** (*Georgia Institute of Technology*)	Computational study of supersonic overexpanded impinging air jets **G. CRENN** (*ESTACA*)	On the estimation of the angle of attack for cross-flow wind turbines **H. FELLOUAH** (*Université de Sherbrooke*)
15:50	Joined Wing UAV Surrogate-based Aerodynamic Optimization for Maximum Range **M. NOVAK** (*TU Wien*)	Study of aircraft loads dependence with respect to wind gusts using fast nonlinear static aeroelastic method **O. CHANDRE-VILA** (*Airbus Operations*)	Effect of angle of roll on the development of forebody asymmetric vortices **M. FERCHICHI** (*Université de Sherbrooke*)	Numerical analysis and comparison of flow structures produced by vane and rod type vortex generators on a wind turbine airfoil **N. TIWARI** (*Polish Academy of Sciences*)

16:15	**COFFEE BREAK**



TUESDAY, MARCH 29

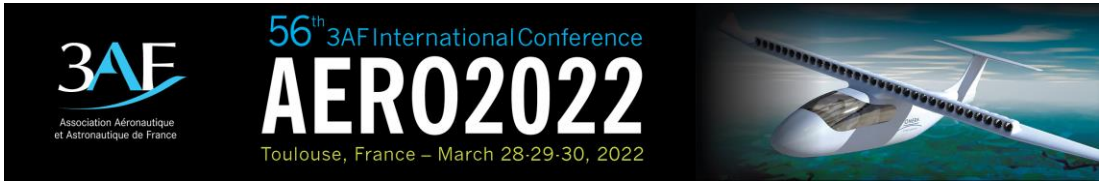
16:45	A surrogate modelling of aileron and spoiler deflections in the low speed flight regime using the Linear Frequency Domain (LFD) method **K. GOVINDAN** (*DLR*)	Simulation of the effect of a vertical gust on the flow around a thin airfoil by discrete vortex method **V. VIDELIER** (*École de l'air et de l'espace*)	An innovative technique for the characterization of MILD combustion recirculation rates **G. MILLOT** (*Capgemini Engineering*)	H-Darrieus vertical axis wind turbine power prediction model using the Lattice Boltzmann approach **K. VENKATRAMAN** (*Université de Sherbrooke | Von Karman Institute*)
17:10	CAD-consistent aerodynamic design via the isogeometric paradigm **R. DUVIGNEAU** (*Université Côte d'Azur*)	*Numerical investigations of laminar separation bubbles under the influence of periodic gusts* **D. OHNO** (*University of Stuttgart*)	CFD retro-propulsion simulation with FLUSEPA code **D. PUECH** (*ArianeGroup*)	Development of a generalized optimization architecture for wind energy systems **A. BRAVO SANCHEZ** (*Capgemini Engineering*)
17:35	Design and optimization of long range guided ammunition **S. BAGY** (*ISL*)	On the possibility to use flutter for creating lift and propulsion at city drones **A. TRIFU** (*COMOTI*)	Numerical modelling of Helicopter engine soak-back phase using a coupled high-fidelity/1D nodal network approach **S. BOULESTEIX** (*Capgemini Engineering*)	
18:00	**END OF SESSIONS**			
19:30	**BANQUET & AWARD CEREMONY**			



WEDNESDAY, MARCH 30

09:15	**KEYNOTE CONFERENCE N°5** **The challenge of climate neutrality in aviation** **Philippe NOVELLI (*ONERA*)**

	SESSION 5A: Aeroacoustics **Chairperson: Denis GÉLY** **(*ONERA*)**	**SESSION 5B: Load control. Shock-wave/boundary-layer interaction** **Chairperson: Holger BABINSKY** **(*University of Cambridge*)**	**SESSION 5C: Aerothermal** **Chairperson: Émilie JÉRÔME** **(*Armament General Directorate – DGA*)**
10:00	Aeroacoustic study of a low Reynolds number rotor using LES **D. VITTAL-SHENOY** (*ISAE-SUPAERO*)	Effect of shock-control bumps on oblique shock-wave / turbulent boundary layer interactions **J. BULUT** (*TU Delft*)	Aerothermal jet simulations using the Lattice Boltzmann Method **M. NGUYEN** (*CERFACS*)
10:25	Low and High-fidelity approaches for low noise eVTOL modeling and design **L. SANKAR** (*Georgia Institute of Technology*)	Non-linearities in the low–frequency dynamics of transitional shock-wave / boundary-layer interactions **M. MAURIELLO** (*Aix-Marseille Université*)	Aerodynamic effects of a wing surface heat exchanger **A. HABERMANN** (*Bauhaus Luftfahrt e.V.*)
10:50	Experimental investigation of rotor-airframe interaction noise at low Reynolds number **R. GOJON** (*ISAE-SUPAERO*)	Porous bleed boundary conditions for shock-induced boundary-layer separation control **J. GIEHLER** (*ONERA*)	Numerical aero-thermal modelling for improvement of infra-red measurement of laminar-turbulent transition **O. VERMEERSCH** (*ONERA*)
11:15	**COFFEE BREAK**		



WEDNESDAY, MARCH 30

11:45	Influences of smooth curvature distributions on reducing aerofoil self-noise **X. SHEN** (*Northumbria University*)	Design of a new test rig to investigate transonic external fan cowl separation **K. SABNIS** (*University of Cambridge*)	Data assimilation for 3D mean flow reconstruction with limited experimental observations: applications to aerothermal flows **M. Y. BEN ALI** (*ONERA*)
12:10	Unsteady aerodynamic study and aeroacoustic predictions of platooning Ahmed bodies **R. RANAWEERA** (*Northumbria University*)	Numerical investigation of effect of sidewall and throat configurations on the performance of a rectangular ramjet Intake **S. PATTNAIK** (*Nitte Meenakshi Institute of Technology*)	
12:35		On the possibility to reduce the sonic boom intensity at future European supersonic aircraft by extension of Savu-Trifu concept **A. TOTU** (*COMOTI*)	
13:00	**LUNCH**		
14:00	**TECHNICAL VISIT**		
16:00	**END OF AERO2022 CONFERENCE**		