

Tuesday 25th February 2020

8:30 REGISTRATION / WELCOME									
9:00 PLENARY SESSION 1 - OPENING Chair: Christian Mari (Chair of AEC2020) Welcome by the President of 3AF Alain Rousset Pdt région Nouvelle Aquitaine(10') + translation Eric Trappier, GIFAS, President TBC Frédérique Vidal, Minister of Higher Education, Research and Innovation TBC									
10:10 COFFEE BREAK									
ANERS		AERONAUTICS				SPACE			
Auditorium A	R01	R02	R03	R04	R05	R06	R07	R08	
Session 1 : ANERS	Session 2 : Aerodynamic/Flow Control	Session 3 : Hybrid/electric airplanes design and analysis tools	Session 3 : Composites analysis & modelling	Session 4 : Research infrastructures for greener and safer aviation	Session 5 : CS Project BLADE	Session 6 : Clean Space, Space Debris I	Session 7: Space Structures, Thermal and Mechanisms I	Session 8 : Space Propulsion (green propellants) I	
10:40-11:00	ANERS Opening Session	49 A Method for Estimating Drag Reduction Performance of Riblets Installed on Aircraft Surfaces S.Koga, Japan Aerospace Exploration Agency, JP	156 A General Preliminary Sizing Procedure for Pure-Electric and Hybrid-Electric Airplanes L.Trainelli, Politecnico Di Milano, IT	678 A phenomenological approach to modelling of crack propagation in carbon fibre reinforced composites under cyclic loading D. De Bono, Twi Ltd, GB	22 New long-range cabin mock-up enabling the simulation of flight cases by means of tempered fuselage elements D. Schmeling, German Aerospace Center (Dlr), DE	109 BLADE - Breakthrough Laminar Demonstrator in Europe - An Overview A. Eberle, Airbus Operations, DE	714 Environmental LCA and Ecodesign in the space sector S. Morales Serrano, European Space Agency, NL	739 Reduced order models and machine learning algorithms to develop predictive thermal tools for spacecraft simulations C. Semler, Maya Htt, CA	703 Multidisciplinary design optimization framework for the conceptual design of hybrid rockets A. Suleman, University Of Victoria, CA
11:00-11:20		247 Evaluation of Drag Reducing Paint-Riblet in Flight M. Kurita, Japan Aerospace Exploration Agency, JP	514 Optimization tool for equipment placement and routing in more electric aircraft J. Vankan, Nlr, NL	87 Analysis of guided wave propagation in the CFRP subjected to moisture influence O.Wieslaw, Polish Academy Of Sciences, Institute Of Fluid Flow Machinery, PL	106 Towards Validation of Scaled Flight Testing P. Schmolgruber, Onera, FR	424 Clean Sky SFWA BLADE and Saab's integrated composite upper cover J.Mardjono, Safran Aircraft Engines, FR	712 OMAR: an ESA study for On-orbit Manufacturing, Assembling and Recycling S. Morales Serrano, European Space Agency, NL	673 Design, Testing and Feasibility Analysis of a Novel Docking Module for Small Satellites R. Gajendra Pareek, Srm Institute Of Science And Technology, IN	497 Ignition of green propellant rocket thrusters using a miniaturized high energy laser G. Kroupa, Silicon Austria Labs Gmbh, AT
11:20-11:40		393 Quantitative prescription of transonic-airfoil-buffet occurrence by persistent homology C.Kazuhsa, The University Of Electro-Communications, JP	522 Sensitivity analysis of a hybrid-electric aircraft powertrain based on Sobol indices. M. Pettes-duler, Laplace Lab, FR	677 Improved damage prediction for woven composites under crush loading R. Lombarkia, Université Laval, CA	210 A novel Aircraft Wing Inspection Framework based on Multiple View Geometry and Convolutional Neural Network B. Kuang, Cranfield Universit, GB	159 Highlights for natural laminar wing manufacturing developments M. Castillo, Aermova, ES	710 CleanSat: Satellite Technologies for Space Debris Mitigation S. Morales Serrano, European Space Agency, NL	632 Life Cycle Assessment for future Copernicus missions - Standard satellite platform A. Bouilly, Airbus Defence And Space, DE	510 Influence of Solution Conductivity on Electrolytic Decomposition of HAN Aqueous Solutions M.H. Wu, National Cheng Kung University, TW
11:40-12:00	ANERS RT1 Research Networks Activity Reports	409 D01/R01 Investigation of base drag reduction on bodies of revolution implementing passive and active flow control techniques C. Bliamis, Aristotle University Of Thessaloniki, GR	24 Uncertainty quantification of complex multidisciplinary aircraft systems A. Harish, United Technologies Research Centre Ireland Ltd, IE	650 Deflection analysis of functionally graded graphene-reinforced composite laminated skew plates P. Khazaeinejad, Kingston University, GB	269 Analysis of combined jet-perforated boundaries efficiency to solve the problem of the wind tunnel wall interference at transonic speeds A. Volkova, Tsagi, RU	472 BLADE Flight Test Aircraft Conversion and Innovative Instrumentation D. Kierbel, Airbus,FR	521 Estimation of GEO Debris' Tumble Axis Orientation using Space-based Observations R. Xu, Shanghai Institute Of Satellite Engineering, CN	612 Rigid origami inspired retractable solar array for asteroid-landing-and-sampling probe M. Li, Aerospace System Engineering Shanghai, CN	474 Characterisation of acoustically coupled flow field dynamics from high-speed imaging in a high pressure rocket thrust chamber M. Son, Deutsches Zentrum Für Luft- Und Raumfahrt, DE
12:00-12:20		471 A Review of Experiments on Control of Cross-flow Disturbances Using Dielectric Barrier Discharge D. Sboev, Central Aerohydrodynamic Institute (Tsagi), RU	411 Tool to predict and avoid Partial Discharges in stator slot of rotating motors fed by inverter P. Collin, Laplace, FR	631 Micromechanical analysis of fibre-reinforced composites with microstructural defects via a component-wise approach M. NAGARAJ, Politecnico Di Torino, IT	363 Towards the Multimodal Detection of Sleep in Pilots B. BOHDAN, Honeywell, CZ	266 BLADE Flight Test Instrumentation for Transition Detection S. KOCH, German Aerospace Center, DE	592 Ecodesign as a new lever to enhance your global value proposition: from Space to Corporate K. LE BLEVENNEC, Vito, BE	585 The Deployment System of the Flexible Solar Array Technology GoSolAr M. HILLEBRAND, Dlr - German Aerospace Center, DE	525 CO2 Based ISRU Propulsion for Satellites and Spacecrafts in the Vicinity of Mars K. KATSONIS, Dedalos Ltd, GR
12:20-12:40		709 Ongoing progress in Flow Control Actuators and required electronics G. AIGOUY, Cedrat Technologies, FR	507 Electrothermal Models and Design Approach for High Specific Power Electric Motor for Hybrid Aircraft S. TOUHAMI, Laplace Laboratory, FR	607 Exploitation of high performance composite structures at elevated temperatures M. LIEBISCH, German Aerospace Center (Dlr), DE	698 Icing test of propellers for multi-rotary URUV Y. MASAFUMI, Kanagawa Institute Of Technology, JP	603 BLADE flight test: impact of noise on the laminar turbulent transition O. VERMEERSCH, Onera, FR	579 Numerical Ballistic Limit Equation for explosion of Hydrazine-filled tanks C. PUILLET, Cnes, FR	455 Nonlinear Modeling of Large Deployable Solar Array and Its On-orbit Nonlinear Transient Analysis P. WANGBAI, Aerospace System Engineering Shanghai, CN	523 ISRU Technology Propulsion for Missions in the Solar System K. KATSONIS, Dedalos Ltd, GR
12:40 LUNCH									
14:00 PLENARY SESSION 2 Chair: C.hristophe Hermans, DNW TBC KEYNOTE SPEECH 1: Jean-Yves la Gall - President CNES KEYNOTE SPEECH 2: Axel Krein Executif Director Clean Sky JU									
15:00	Session 9: NOISE IMPACTS ANIMA Special Session	Session 10 : Aerodynamic /Aircraft performance	Session 11 : Hybrid/electric Thermal management	Session 12 : Testing, monitoring & certification	Session 13 : Numerical Simulation and Optimization of Novel Aircraft Concepts		Session 14 : Space Aero Thermo Dynamics	Session 15 : Environmental Control and Life Support in Space	Session 16 : Space Guidance, Navigation and Control GNC
15:00-15:20	66 An overview of ANIMA's achievements on aviation impact management L. LEYLEKIAN, Onera, FR	123 Forces on a 3.5:1 prolate spheroid in accelerated relative motion with a viscous fluid G. CARBONE, Flying Whales, FR	509 Comparison of Optimized Thermal Management Systems for Hybrid Electric Aircraft H. KELLERMANN, Bauhaus Luftfahrt E.V, DE	444 Development of a Prototype Test System for Certification of Curved Fuselage Panels through Experimental Validation M. JIMÉNEZ, Element Seville, ES	65 Numerical Investigation of the Effects of Fuselage Upsweep in a Propulsive Fuselage Concept A.L. HABERMAN, Bauhaus Luftfahrt E.V., DE	184 BLADE - Natural Laminar Flow Flight Testing T. GIBSON, Airbus, GB	567 Evaluation of Retro-Rocket Plume Particles Contamination on Satellite in Micro Launch Vehicle X. XIAOFENG SUN, China Academy Of Launch Vehicle Technology, CN	602 Containment of Hazardous Materials for Human Spaceflight: A Simplified Approach to Verification for Sealed Hazardous Fluid Containers A. JONGSCHAAAP, European Space Agency, NL	675 An Improved Extended Kalman Filter for Nonlinear State Estimation M. DE FREITAS COELHO, University Of Beira Interior, PT
15:20-15:40	137 Quality of Life: An expanded agenda of airport responsibility? P. HOOPER, Manchester Metropolitan University, GB	311 On Aerodynamic Performance Analysis of a Full ATR72 Aircraft under Adverse Scenario T. WANG, Tamkang University, TW	415 Hybrid aircraft 2035: high performance cooling systems for power electronics converters F. ACCORINTI, Isae-Ensm, FR	706 Military Transport aircraft ditching certification from impact and floatation standpoint M. OLIVER-HERRERO, Airbus, ES	484 Numerical low-fidelity method for improved analysis of breakthrough aero-propulsive systems E. BENICHO, Isae-Supaero, FR	730 Towards Laminar Bizjets T. PROFFIT, Dassault Aviation, FR	643 Effect of mass addition on heat transfer and boundary layer stability of descent module for Mars exploration N. PALCHEKOVSKAYA, Central Aerohydrodynamic Institute, RU	380 Comparison and selection of an Environmental Control and Life Support System architecture for a lunar outpost based on a set of criteria prioritised with the Analytic Hierarchy Process method G. THIRION, Isae-Supaero, FR	635 Proximity operations trajectory design in the relative orbital elements' perspective G. GAIAS, Politecnico Di Milano, IT

					Session 17: Hybrid/ Electric Propulsion and Aircraftccc Chair:				
15:40-16:00	146 A role for communication and engagement in a comprehensive approach to aircraft noise annoyance mitigation P. HOOPER, Manchester Metropolitan University, GB	317 Simulations of Light Aircraft Spin Maneuvers L. BOVET, Elisa Aerospace, FR	436 Minimum Fuel Load for a Hybrid Electric CS-25 Aircraft Required for Cooling A. HINZ, Rwth Aachen University, DE	713 Some challenges in aeroelasticity and their experimental investigation towards a cleaner aviation A. LEPAGE, Onera, FR	152 Structural Topology Optimisation of a Gas Turbine Engine and Nacelle Integration Components Employing A Medial Surface Representation F. STANLEY, Rolls-Royce Plc, GB	704 Pre-Design System Considerations for Cryogenic Turbo-Electric Propulsion System for CENTRELINE Fuselage Fan Concept S. BISER, Rolls-Royce Limited & Co. Kg, DE	574 Study on Mitigation of Reentry Blackout by Surface Catalysis Effects in Arc-Heated Wind Tunnel H. TAKASAWA, Hokkaido University, JP	116 Electrodynamic Centrifuge for Space Habitats with Artificial Gravity J. PREDRAG, Orbis-lp, ES	621 Station-keeping for halo orbits using a solar sail with one-degree-of-freedom electric propulsion J. HUANG, Harbin Institute Of Technology, CN
16:00-16:20	271 Aircraft Noise Management Practices in Eastern European countries E-N. BURTEA, National Research And Development Institute For Gas Turbines Comoti, RO	625 Wind tunnel aerodynamic investigation of quad plane in transient state A. TARNOWSKI, Wut, PL	498 Evaluation of a new OGV architecture for an enhanced energy dissipation E. LAROCHE, Onera, FR	396 Digital Twin approach for critical components using PCRT T. KOEHLER, Vibrant Gmbh, DE	489 Codesign of Aircraft Vertical Tail and Control Laws with distributed Electric Propulsion and Flight Envelop Constraints E. NGUYEN VAN, Isae, Onera, FR	554 A Comparative study of High and Low Fidelity Propulsion Models for Hybrid Electric Aircraft V. PALLADINO, Atr Aircraft, FR	597 Aero-Thermo-Structure Couple Research on Inflatable Space Re-entry Aeroshell Z. ZHANG, Beijing Institute Of Space Mechanics & Electricity, CN	098 Research of Artificial Photosynthesis System Design Based on Regeneration Guarantee Architectural Construction Y. DONGSHENG, Beijing Spacecrafts, CN	563 A Large Membrane Diffractive Space Telescope Control System Concept Based on Vibration Isolation and Precision Pointing System: Preliminary Dynamic Control and Adaptive Control Design F. XIAO, Beijing Institute Of Control Engineering, CN
16:20-16:50	<b>COFFEE BREAK</b>								
	Session 18 : NOISE IMPACTS ANIMA Special Session	Session 19 : Aerodynamic/Laminarity	Session 20: Green and safe systems & operations I	Session 21 : Composites manufacturing	Session 22 : Numerical Simulation and Optimization of Novel Aircraft Concepts		Session 23 : Clean Space, Space Debris	Session 24 : Space Structures, Thermal and Mechanisms	Session 25 : Space Propulsion (green propellants)
16:50-17:00	291 Exemplar case studies of aviation noise mitigation strategies in the European Union G. HEYES, Manchester Metropolitan University, GB	110 Studies of laminar-turbulent transition on large-scale transonic airfoil V. SOUDAKOV, Tsagi, RU	464 Evaluation of Thermal Comfort for Novel Aircraft Cabin Ventilation Concepts D. SCHMELING, German Aerospace Center (Dlr), DE	136 Automated Fiber Placement based manufacturing of carbon fiber reinforced sandwich shell parts T. ZENKER, Fraunhofer, DE	368 A multi-mode morphing flap for the next-generation regional aircraft R. PECORA, University Of Naples "Federico II", IT	679 Development of a Hybrid-Electric Propulsion System for Unmanned Air Vehicles A. SULEMAN, University Of Victoria, CA	501 Deployment Requirements for Deorbiting Electrodynamic Tether Technology G. SAREGO, University Of Padova, IT	371 Spaceborne Unfurlable Reflector Antenna Technologies In Europe: Current Status and Future Outlook G. RODRIGUES, Esa, NL	369 Thrust measurement system for propulsion of the satellite F. NICULESCU, COMOTI, RO
17:00-17:20	343 Health impacts of aircraft noise exposure D. SCHRECKENBERG, Zeus Gmbh, DE	128 Comparison of Heating Methods for Transition Detection by TSP on a Generic Nacelle in the Pilot ETW P. GUNTERMANN, Etw Gmbh, DE	473 Turbulence prediction for aircraft by means of high-dynamic differential pressure measurements A. GALFFY, Tu Wien, AT	503 Optimizing in-situ consolidation of xenon flashlamp based automated fiber placement D. DEDEN, Dlr, DE	535 A Framework for the Development of a Full-size Aircraft Morphing Winglet J. XI, Ryerson, CA	494 Next Stages in bringing Hybrid-Electric Power Systems for Aviation to life G. WAY, Rolls-Royce Plc, GB	540 Deorbiting Small Satellites from the ISS using a Tethered System A. VALMORBIDA, University Of Padova, IT	346 Generalized Thermal Design Methods for Star Tracker on SSO Satellites T. YELONG, Beijing Institute Of Spacecraft System Engineering, CN	365 Effects of compounds in liquefied methane on rocket engine operation E. GOOS, German Aerospace Center (Dlr)
17:20-17:40	348 Foundations for a comprehensive approach of acoustic and non-acoustic measures of aircraft noise annoyance mitigation D. SCHRECKENBERG, Zeus Gmbh, DE	538 Investigation of a sectioned boundary layer suction system in application to the three-dimensional boundary layer laminarization on the swept wing S. TOLKACHEV STEPAN, Tsagi, RU	556 Designing and Maturing Doppler LIDAR Sensors for Gust Load Alleviation: Progresses Made Since AWIATOR N. FEZANS, Dlr, DE	315 Automated Joining and Assembly of Thermoplastic Fuselage Structures for the Aircraft Factory of Tomorrow S. KOTHE, Fraunhofer Ifam, DE	575 Static Aeroelastic Model Development for Folding Winglet Design B. SITOTAW KIDANE, University Of Bologna, IT	331 Conceptual Design Studies of Hybrid Electric Propulsion Air Vehicles in the Frame of Clean Sky2 Large Passenger Aircraft T. ZILL, Dlr, DE	453 LCA in the Space sector: what has been done so far? A. GALLICE, ArianeGroup, FR	007 Multi-DOF microvibration isolator with contactless actuators L. VICENTE, Université Libre De Bruxelles, BE	121 A Dynamic Model for HTP Monopropellant Thruster: Simulation Results and Validation C. SUKMIN, Kaist, KR
17:40-18:00	92 Association between short-term annoyance and heart rate during aircraft noise exposure B. OHLENFORST, Nir, NL	565 Consideration of Compressibility Effects in Natural Laminar Flow Nacelle Design S. SAVELYEV, Tsagi, RU	634 Use of the DressMAN (Dummy Representing Suit for Simulation of huMAN heat loss) measurement system to assess normal and emergency operation thermal cases in the Business-Jet Cabin Mock-Up. A. PATHAK, Fraunhofer Ibp, DE	408 Generating durable hybrid Ti/CFRP adhesive joints for aerospace structures by laser pretreatment U. LOMMATZSCH, Fraunhofer Ifam, DE	119 Numerical Simulation of Ditching Performance of a Blended Wing Body Aircraft Y. ZHENG, Beihang University, CN	596 The LCA60T, a 4-MW hybrid-electric propulsion airship J. BERNARD, Flying Whales, FR	410 Experimental study of shock/shock interference in the rarefied flow regime during atmospheric re-entry of space debris and spacecraft R. JOUSSOT, CNRS, FR	252 Wall Roughness Modeling in Rocket Combustion Chambers O. RAFFAELE, Technische Universitaet Muenchen, DE	286 Modelling nitrous oxide dynamics in oxidizer tank, feed line and injector of hybrid rocket engine J. SZYMBORSKI, The Szevalski Institute Of Fluid-Flow Machinery Polish Academy Of Sciences, PL
18:00-18:20	532 Aircraft noise exposure and impact assessment and management O. ZAPOROZHETS, National Aviation University, UA	655 Numerical and experimental studies on the concept of short/medium range aircraft with natural laminar flow wing N. PUSHCHIN, Tsagi, RU	733 Multi-Physics Methodology for Phase Change Due to Rapidly Depressurised Two-Phase Flows V. EUSEBIO, Universidad Politecnica De Madrid, ES	606 Design and manufacturing maturation of a Thermoplastic Composite Keel-beam L. ANGEL, Euratec Tech Center, ES	075 Numerical Analysis on Aerodynamic Characteristics of Box-Wing for Application to Flying Car K. MARUYAMA, The University Of Electro-Communications, JP	600 THEA-CODE: a design tool for the conceptual design of hybrid-electric aircraft with conventional or unconventional airframe configurations G. PALAIA, University Of Pisa, IT	407 Post-Newtonian Formulae for Laser Tracking in Space J.M. GAMBÍ, Univ. Carlos III De Madrid, ES	129 EC H2020 Large Deployable European Antenna (LEA) E.K. PFEIFFER, Hps Gmbh, DE	321 A thermo-mechanical analysis with the use of tasks in a non-linear formulation for a low-thrust thruster calculations during lifetime prediction with the SPT-50 thruster as an example O. OLSHANSKAYA, Fsee Edb Fakel, RU
18:20-18:40	483 A novel tool to estimate the impact - beyond acoustics - of aircraft noise on airport communities I. LEGRIFON, Onera, FR	506 Laminar flow control along the wing leading edge F. MÉRÉY, Onera, FR	744 ReMAP – An Integrated Fleet Health Management solution for Condition-based Maintenance in Aviation B. SANTOS, TU Delft, NL	588 Genetic optimization of stacking sequences for laminated composite structures with ply drops A.F. CORTESI, Scalian, FR	003 Analytical Prediction of Heaving and Pitching Motions of Seaplanes J. MASRI, Northumbria University, GB	618 Structure – system design interdependencies of hybrid-electric aircraft during conceptual design phase A. BARDENHAGEN, Technische Universität Berlin, DE	018 ADEO - The European Commercial Passive De-Orbit Subsystem Family Enabling Space Debris Mitigation E.K. PFEIFFER, Hps Gmbh, DE	330 Deployment Dynamic Analysis of a Space Structure H. LUO, Shanghai Ys Information Technology Co., Ltd, CN	064 SWAN sandwich nozzle program for Ariane 6, qualification and maturation L. BROX, Gkn Aerospace Sweden Ab, SE
18:40	<b>TRANSFER TO BORDEAUX CITY HALL (TRAM)</b>								
22:30	<b>COCKTAIL PARTY BORDEAUX COUNTY HALL</b>								

Wednesday 26th February 2020

9:00 **PLENARY SESSION 3**  
Chair : Rafael Bureo Dacal, ESA  
**KEYNOTE SPEECH 3: Pascale Erhenfreund, DLR Chair, Common aeronautics-space technologies**

9:30 **KEYNOTE SPEECH 4: José Gonzalez del Amo, Head of the Electrical Propulsion Section, ESA, Electric propulsion (space)**

10:00-10:30 **COFFEE BREAK**

	ANERS		AERONAUTICS				SPACE			
	Auditorium A	R01	R02	R03	R04	R05	Auditorium C	R06	R07	R08
	Session 26 : Alternative Fuels	Session 27 : Assessment of ACARE Goals	Session 28 : Advanced Design Methods for Novel Aircraft Concepts	Session 29 : LOW NOISE DESIGN METHODS 1	Session 30 : Manufacturing & processes	Session 31 : Electric Powered Aircraft: Rationale, Platform, Propulsion and Wing Design 1	Session 32 : WS REMAP	Session 33 : Clean Space, Space Debris III	Session 34 : Testing I	Session 35 :Space Propulsion (green propellants) III
10:30-10:50	533 Alternative fuels as a path to lower emission aviation A. SHUSTOV, Tsagi, RU	405 Results and Exploitation of the Project PARE (Perspectives for Aeronautical Research in Europe) L. BRAGA CAMPOS, Ist, Lisbon University, PT	610 Framework development for robust design of novel aircraft concepts M. SAPORITO University Of Southampton - Onera Toulouse, FR	290 Progress in aeroengine noise reduction through advances in diagnostics and computational methods C. RICHTER, Rolls-Royce Deutschland, DE	583 Aerothermal characterization of a compact heat exchanger element by additive manufacturing D. LABOUREUR, Von Karman Institute, BE	335 The whole truth about electric-powered flight for civil transportation: From Breguet to operational aspects I. STAAACK, Linköping University, SE	D02/R05 REMAP	288 Research on Target Prioritization for Active Debris Removal with Space-based Laser Y. WULIN, Beijing Institute Of Space Environment Engineering, CN	719 Virtual Shaker Testing (VST) and its application to a test item D. PEDERBELLI, Polytechnic Of Turin, IT	166 The impact of the SPT-140D parameters and lifetime characteristics change on its thermal mode P. CHUBOV, Edb Fakel, RU
10:50-11:10	279 Study of NH3 as a CO2-free fuel for the propulsion of commercial airplanes C. A. NELSON, Altran, ES	399 Analysis and Forecast of Change of Fuel Efficiency Indicator of Passenger Airplanes S. DMYTRYEV, Ivchenko-Progress Se, UA	032 Preliminary Aircraft Design within a Multidisciplinary and Multi-fidelity Design Environment S. WÖHLER, German Aerospace Center, DE	325 A versatile solution for a Greener Aviation: The Thermoacoustic Engine D. RADULESCU, Incdt-Comoti, RO	81 DA Alternative materials and process for structural parts manufacturing W. WEIJIAN AN, China Institute Of Atomic Energy, CN	505 Conceptual design and optimization of a general aviation aircraft with fuel cells and hydrogen as propulsion system Y. LIU, Tu Braunschweig, DE	D02/R05 REMAP	133 Evaluation of Ballistic Limit Equations for standard Multi Layers Insulations with stand-off to units C. PUILLET, Cnes, FR	633 A hybrid real time model for integrating TVC subsystem in the new Vega-C HWIL: design-to-cost development and validation N. BORGHI, Avio Spa, IT	302 Preliminary Analysis of High Performance Low-Cost Blended Monopropellants Based on High Test Peroxide E. FONDA-MARSLAND, University Of Southampton, GB
11:10-11:30	298 Enabling Cryogenic Hydrogen-Based CO2-free air transport N. DEVAIAH, Cranfield University, GB	402 Attraction of women and young talent to Aeronautics (PARE Project) A. COSTA, Inova+, PT	174 Recent advances in establishing a common language for aircraft design with CPACS A. MARKO, German Aerospace Center (DLR), DE	384 Toward Optimal Design of Contra-Rotating Propulsion System - Practical Acoustic Analysis O. GUR, Iai - Israel Aerospace Industry, IL	377 Numerical continuity as a tool for process development and improvement for manufacturing future SX high pressure turbine blades J. AGUILAR, Safran, FR	43 Hydrogen Drone Research Aircraft D. DENGGRUNRAN, Beijing Institute Of Spacecraft System Engineering, CN	D02/R05 REMAP	105 Results, opportunities and limitations of implementing LCA and ecodesign in a space context - Experiences from the Greensat study A. VERCALSTEREN, Vito, BE	462 A supersonic glider: fluid dynamics predictions and free flight experiments analysis M. ALBISSER, French-German Research Institute, FR	213 Research and Design Considerations of 100-kilowatts MPD Thruster with Superconductor C. YUNTIAN, Beijing Institute Of Control Engineering, CN
11:30-11:50	451 Multifunctional fuel cell for aeronautics S. MATHONNIERE, Ametra, FR	558 PARE analysis of ACARE Flightpath 2050 environmental impact goals O. ZAPOROZHETS, National Aviation University, UA	260 An automated approach for the aerodynamic design of close-coupled propulsion/airframe configurations J. MATESANZ GARCIA, Cranfield University, GB	508 Numerical simulation of the broadband noise of a counter-rotative open rotor configuration using phase-lagged conditions - Part1: initial validation on a single rotor case M. FIORE, Cerfacs, FR	349 Automated Cabin and Cargo Lining and Hat Rack Installation for the Aircraft Factory of Tomorrow S. KOTHE, Fraunhofer Ifam, DE	190 On the Design of an Electric-Powered Micro-Feeder Aircraft L. TRAINELLI, Politecnico Di Milano, IT	D02/R05 REMAP	718 Evaluating the shielding capability of a satellite Multi-Layer Insulation against space debris impact H. ABDULHAMID, Thiot Ingenierie, FR	433 A New Automatic Test System Design for Control System of BeiDou Navigation Satellite L. WEIJE, Beijing Institute Of Control Engineering, CN	272 Hydrocarbon Augmented Water Electrolysis Propulsion A. HERBERTZ, Esa, NL
11:50-12:10	670 Modeling of new fuels emergence impact on the air transportation market V. EKATERINA, Nrczh Named After Zhukovsky, RU	559 Aircraft emissions and European ACARE goals : synthesis of FORUM-AE conclusions O. PENANHOAT, Safran, FR	572 Aerodynamic design procedures and tools for box-wing transport aircraft K. ABU SALEM, Università Di Pisa, IT	529 CFD-based prediction of wall pressure spectra under a turbulent boundary layer with adverse pressure gradient G. GRASSO, Ecole Centrale De Lyon, FR	46 DSLM processing of optimized Active Flow Control Actuators for UHBR engine aircrafts A. M. MANCISIDOR, Lortek S. Coop, ES	40 All Electric Intercity-Aircraft Design Based on Fuel Cell Energy System. G. ROMEO, Politecnico Di Torino, IT	D02/R05 REMAP	667 Study on the shape and orientation effects of cylindrical projectile under hypervelocity impact Q. QIANG WU, Beijing Institute Of Spacecraft Environment Engineering, CN	450 Automated testing for satellite on-board systems S. MANAP, Nazarbayev University, KZ	083 Hydro-thermodynamic behavior of a hydraulic restriction in liquid nitrogen in steady-state and fluid-hammer conditions L. PEVERONI, Von Karman Institute, BE
12:10-12:30	249 How to promote the use of e-fuels fuels in aviation? - Recommendable policy measures for a carbon friendly air transport system J. SCHEELHAASE, German Aerospace Centre (Dlr), DE	157 Overview and Challenges of EU Aviation Noise Reduction Research D. COLLIN, Safran, FR	009 Discrete Lifecycle Cost-Benefit Simulation for Aircraft Innovation Assessment M. EDER, German Aerospace Center - Dlr.E.V., DE	687 Acoustic bass field effect on an array of premixed flames A. RANGBULLA, University Of Toronto, CA	636 Development of a REACH compliant multifunctional coating for rain erosion, corrosion resistance and aesthetic aerospace requirements of aluminum large parts by plasma electrolytic oxidation J. ESCOBAR, Irt Saint Exupery, FR	375 Investigation into the viability of integrated regional air transport based on all-electric aircraft R. BARRIER, Cranfield University, FR	D02/R05 REMAP	352 On the Need to Develop Research for Asteroids' Deviation from the Collision Trajectories with Earth using Cannons with Artificial Gravitation C. SANDU, Incdt-Comoti, RO	372 Dynamic response and failure analysis of composite plate subjected combined extreme thermal and acoustic loads W. ZHENQIANG, Beijing Institute Of Structure And Environment Engineering, CN	237 Design of a 1-N monopropellant thruster for testing of new Hydrogen Peroxide decomposition technologies T. FRANKEN, Delft University Of Technology, NL

12:30 **LUNCH**

13:40 **ROUND TABLE 1: From research to flight: bridging the death valley**  
Moderator: Torben Henricksen, Head of the Mechanical Department, ESA  
Stéphane Andrieux, Chief Scientist, ONERA  
Sergey Chnychev, President IFAR, Chief Scientist Tsagi  
Frederic Teston, Head of the Systems, ESA  
Jean-François Brouckaert, Chief Scientist, CS  
Hervé Gilibert, CTO Ariane Group

15:00

	ANERS		AERONAUTICS				SPACE			
Session title	Session 36 : Green operations	Session 37 : Flow Control	Session 38 : New Aircraft Configurations	Session 39 : LOW NOISE DESIGN METHODS 2	Session 40 : Numerical methods, CFD	Session 41 : Electric Powered Aircraft: Rationale, Platform, Propulsion and Wing Design 2	Session 42: Materials and Advanced Manufacturing for Space Application I	Session 43 : Mission Design and Space Systems I	Session 44 : Software and Avionics	Session 45 : Guidance, Navigation and Control GNC II
15:00-15:20	130 Trajectory Optimization with Atmospheric Forecast Parameters A. VITALI, Politecnico Di Torino, IT	004 Oscillatory Suction and Pulsed Blowing Actuator B. MIZRAHI, Tel Aviv University, IL	072 Conceptual Design Studies of Unconventional Configurations in the Scope of the Project NACOR at DLR M. IWANIZKI, German Aerospace Center, DE	742 Assessment of Shielding Effect Efficiency for BWB with UHBR V. KOPIEV, Tsagi, RU	019 Computing flow sensitivities in a high-order CFD code using automatic differentiation J. CARDESA, Institut De Mécanique Des Fluides De Toulouse (Imft), FR	200 Design and Development of Thrust Vectored Vertical Take-Off and Landing (VTOL) Electric Powered Autonomous Unmanned Aerial Vehicle W. MIRZA WASIF SAEED, Nazeer Hussain University, PK	578 Design of a MoonFibre Spinning Apparatus for the Use on a REXUS Research Rocket C. KRÄMER, Rwth Aachen University, DE	550 The Impact of Superconductor-Based Power System Architectures On Payload Mass Fraction Optimisation M. COLLIER-WRIGHT, Neutron Star Systems, DE	524 AI Enhanced Multi Media System Architecture for Human Habitation in Space Mission H. KESUMA, Aes - Aircraft Elektro/Elektronik System Gmbh, DE	467 Resilient Redundant Spacecraft GN&C's Propulsion System Fault Detection and Diagnostics K. KAWATSU, Jaxa, JP



15:20-15:40	493 Permanent Resume Trajectory: an innovative FMS functionality for greener and seamless operations J. BOYER, Thales Avs, FR	191 In plane wavy streamwise wall forcing for turbulent skin friction drag reduction N. BENARD, Cnrs Pprime, FR	267 Conceptual Design Studies of Unconventional Configurations M. MEHEUT, Onera, FR	500 Overview of ONERA contribution to the aeroacoustics design and assessment of the high-speed helicopter demonstrator RACER A. LE PAPE, Onera, FR	187 Evaluation of turbulence models for the prediction of vortex interaction over a fighter aircraft E. GUILMINEAU, Cnrs - Ecole Centrale De Nantes, FR	598 Method for analysis of flight characteristics of eVTOL scaled model T. KOSEL, Faculty Of Mechanical Engineering, University Of Ljubljana, SI	569 Regulatory and commercial obsolescence risks of materials and processes P. HEISKANEN, ESA, NL	629 Modern Techniques and Technologies for Space Flight Vehicle Engineering G. ORTEGA, European Space Agency, NL	262 Design of the Virtual Experiment Support Platform for Aircraft Software Systems J. NA, Science And Technology On Space Physics Laboratory, CN	198 A Method of Autonomous Navigation for Mars Cruise Q. ZHOU, Qian Xuesen Laboratory Of Space Technology, CN
15:40-16:00	491 FlytOptim – crew assistance for greener and safer flights F. PRENOT, Thales Avs, FR	241 Active panel flutter control of composite plates with piezoelectric stiffener actuators Y. KAIHUA, Beijing Institute Of Mechanical And Electrical Engineering, CN	265 Conceptual Design Studies of Boundary Layer Ingestion Engine Integration Concepts M. MEHEUT, Onera, FR	459 Cabin Noise from Boundary Layer Excitation - CANOBLE Cleansky2 project R. LENEVEU, Vibratec, FR	225 The Impact of Compressibility on Kinetic Energy Evolution within Framework of Large Eddy Simulation Z. LI, Cranfield University, GB	250 Energetic Consideration of the Aerodynamic Interactions between Wingtip-Mounted Propellers and the Wing-Vortex-System through numerical Simulation M. SCHOLLENBERGER, University Of Stuttgart, DE	566 A Design Approach for an Integrated and Distributed Membrane Structure for Deployable Space Applications M. E. ZANDER, DLR, DE	586 Design and Optimization of a Small, Vertically Landing Reusable Launch Vehicle S. CONTANT, Delft University Of Technology, NL	080 Design of LZ77 Compression Software for High-reliability Spacecraft On-Board computer L. QIAO, Beijing Institute Of Control Engineering, CN	170 Enhancing Robustness of Autonomous Navigation for Dual Satellite Formations through Parallel Filtering Y. LI, China Academy Of Space Technology, CN
Session title				Session 46: ACOUSTIC LINERS Chair:						
16:00-16:20	412 Assessment of takeoff automation for operational noise reduction B. BASTOS ZANETTI, Embraer, BR	264 Development of high authority synthetic jet actuators for aerospace applications B. GUNGORU, University Of Nottingham, GB	504 Definition of the CENTRELINE reference aircraft and power plant systems F. PETER, Bauhaus Luftfahrt E.V., DE	30 Clean Sky's IDEAS project: Innovative DEsign of acoustic liners for Air conditioning Systems E. PIOT, Onera, FR	404 A Better Assessment of the Recoverable Energy Behind a Body by the Exergy Method M. A. AGUIRRE, Safran, FR	551 Aeroelastic Analysis of Electric Aircraft Wings Subjected to Propeller Thrust and Angular Momentum M. AMOOZGAR, University Of Huddersfield, GB	366 Development, manufacturing and testing of an AM Flexible Hinge made by Laser Metal Deposition for Space Applications C. MELZER, Ruag Space Germany, DE	401 Future-Oriented Research Platform For Orbital Cryogenic Storage Technologies (FROST) T. E. BRUNS, Dlr E.V., DE	530 Electronic uncabled design in missile cabin X. FEI XU, Shanghai Electro-Mechanical Institute, CN	705 Attitude Dynamics and Control of a Large Flexible Space Structure by Means of a Minimum Complexity Model G. AVANZINI, Università Del Salento, IT
16:20-16:50	COFFEE BREAK									
			Session 47 : New Aircraft Configurations Chair:			Session 48 : CS2 Active Flow Control	Session 49: Materials and Advanced Manufacturing for Space Application II	Session 50 :Testing II	Session 51 : Structures, Thermal and Mechanisms III	Session 52 : Space Propulsion (green propellants) IV
16:50-17:00	707 The Impact of Descent Thrust on Fuel Consumption and CO2 Emission H. AKSOY, Eskişehir Technical University, TR	340 An Experimental Investigation of a 3D Morphing Flap Deflection F. MADI, University Of The West Of England, GB	164 Preliminary design of a blended wing body airliner for improved fuel efficiency P. C. BERRI, Politecnico Di Torino, IT	150 D02/R02 Development of Resin-based Lightweight Acoustic Liner in aFJR project R. KAGAYA, Ihi Corporation, JP	466 Epsilon: An Open Source Tool for Exergy-Based Aerodynamic Analysis M. A. AGUIRRE, Safran, FR	45 Miniature airworthy fiber optic pressure sensor for measuring static pressure and acoustics S. KIENITZ, Fos4x, DE	041 Material Characterization and Topology Optimization for the Additive Manufacturing of an aluminum structure for the DESTINY+ Dust Analyzer A. EXLE, Institute Of Space Systems, University Of Stuttgart, DE	359 Application of functional analysis and spectral decomposition for frequency dependent selection of control sensors in direct field environmental acoustic tests M. ALVAREZ BLANCO, Siemens Industry Software Nv, BE	332 Design optimization of a smart tape spring hinge with consideration of contact and large deformation nonlinearities W. TANHUI, Shanghai Ys Information Technology Co., Ltd., CN	223 Heat Transfer Characteristics of Methane in Rocket Nozzle Cooling Channels R. AGARWAL, Srm Institute Of Science And Technology, IN
		Session 53 : Ecodesign and Green Life Cycle Chair:								
17:00-17:20	561 A multi-objective route allocation model taking aircraft sequence and separation into account V. HO-HUU, Delft University Of Technology, NL	644 GLOWOPT – A new approach towards global-warming-optimized aircraft design F. LINKE, German Aerospace Center, DE	499 Exploration and Optimization of a Blended Wing-Body concept featuring distributed electric propulsion A. SGUEGLIA, Isae-Supaero & Onera, FR	257 D02/R02 Noise control of the centrifugal compressor by using open-cell metal foams X. CHEN, Xi'an Jiaotong University, CN	125 Numerical study of NASA Rotor 67 under running conditions on an unstructured hybrid mesh H. ISHIKAWA, JP	122 Wall Shear Stress Measurements of Magnitude and Direction in non-steady flows M. STAATS, Tu Berlin, DE	354 Failure criteria for CFRP composites in the cryogenic regime J. HOHE, Fraunhofer, DE	342 Design and Application of Spacecraft Remote Automation Test W. WEI, China Academy Of Space Technology, CN	314 Computational Model and Complex Dynamics Analysis for Eccentric Rotating Ring Truss Antenna under Combined Temperature and External Excitations Y. ZHENG, Beijing University Of Technology, CN	246 First steps towards maturation of a storable green propellant rocket thrust chamber H. RIEDMANN, Airnegrup Gmbh, DE
17:20-17:40	35 Environmental Friendly And Affordable Small Aircraft Transport To Improve European Network R. DIEGO GIUSEPPE, Piaggio Aero Industries S.P.A., IT	280 Development of ECO-friendly protection procedures for LANDING gear aluminium alloys R. PEREZ, Cidotec, ES	221 Aeroelastic Optimization of a Blended Wing Body Aircraft J. MAS COLOMER, Isae-Supaero, FR	681 D02/R02 Characterization of sonic crystal acoustic absorbers produced by fugitive ink manufacturing process J. BAPTISTA, Polytechnique Montréal, CA	549 Compressible Navier-Stokes analysis of eVTOL propulsion using a low-speed preconditioned multigrid iteration compared to experimental results T. KOSEL, Faculty Of Mechanical Engineering, University Of Ljubljana, SI	214 Array of synthetic jets for large passenger aircraft D. BACKER, Fraunhofer-Institut Für Elektronische Nanosysteme Enas, DE	259 Topology Optimization Based Design of Secondary and Tertiary Structures of the ORION-MPCV European Service Module S. CAEIRO, ESA/Estec, NL	287 Low heat transfer and high load capacity attachment system for probes in aerospace testing facilities A. CANCESCU, Romanian Research & Development Institute For Gas Turbines Comoti, RO	313 Equivalent Model Construction and Nonlinear Vibration Analysis of Large Deployable Circular Mesh Antenna T. LIU, CN	154 Hypergolicity and ignition delay study of green bipropellant system without catalyst J. QUESADA MAÑAS, Delft University Of Technology, NL
17:40-18:00	53 New Mobility Concepts: Optimisation of Flight Movements in Europe F. THIESSEN, Tu Chemnitz, DE	104 HALE multidisciplinary design optimization with focus on Eco-Material selection E. DURIEZ, Isae-Supaero, FR	212 Integration of an Over-Wing Mounted Engine on a mid-range aircraft P. WEGENER, Deutsches Zentrum Für Luft- Und Raumfahrt E.V. (Dlr), DE	355 D02/R02 On the Using of Vacuum Technology for Noise Reduction at Aircraft C. SANDU, Incdt-Comoti, RO	441 Simulation Tool For Environment Friendly Aircraft Cargo Fire Protection System Evaluation A. PATHAK, Fraunhofer Ibp, DE	376 CFD ans Wind Tunnel Tests for Local Active Flow Control at the Wing-Pylon-Nacelle Junction V. IOBACA, Dlr, DE	233 Preparation of Environmental and Thermal Protection Water-based Coating System for Launch Vehicles L. SUN, Aerospace Research Institute Of Materials & Processing Technology, CN	316 Inovative Design and Technologies for Developing Wide Range Thermal Facilities for JUICE Large Appendage and Subsystems D. IFRIM, Comoti, RO	235 Structural vibration control with passive isolation system for propulsion equipment P. ROSARIO, Airbus, GB	168 Development of a 100 mN Green Monopropellant Thruster A. SHCHETKOVSKIY, Plasma Processes, Llc, US
18:00-18:20	188 Optimal Sizing and Operations of a Battery Recharging Infrastructure for a Regional Airport L. TRAINELLI, Politecnico Di Milano, IT	51 Sustainability Driven Product Development in Aviation A. KÖTTER, Altran Deutschland Sas, DE	373 Studies on aerodynamic layouts formation of eco-friendly transport aircraft E. FIGUSOV, Central Aerohydrodynamic Institute, RU	553 D02/R02 SALUTE Project : Main objectives and primary results J. MARDJONO, Safran Aircraft Engines, FR	696 Development of fluid-structure interaction method for flutter analysis of laminar wing S. KUZMINA, Tsagi, RU	452 Numerical Study of Active Flow Separation Control for UHBR Engine Integration on Generic Wing in High-Lift Configuration P. ALES, Vzlu - Czech Aerospace Research Centre, CZ	175 Ultra-High Optical Absorber from Carbon Nanomaterial Composite X. WANG, China Academy Of Space Technology, CN	289 Combustion stability characteristics of a sub-scale LOX/LNG rocket thrust chamber J. HARDI, Dlr Institute Of Space Propulsion, DE	179 Dynamic Analysis of a Bi-stable Boom in the Deployment Process S. WANG, Harbin Institute Of Technology, CN	148 The Evolution of the Liquid Cores in Flash Boiling LN2-Sprays A. REES, German Aerospace Center (Dlr), DE
18:20-18:40	189 Reducing Greenhouse Emissions from Air Transport (189) R. SPENCER, Nangia Consulting, GB	151 Assessing the Effect of Hybrid-Electric Power-Trains on Acoustic and Chemical Pollution L. TRAINELLI, Politecnico Di Milano, IT	91 Way to greener bizjets J. LE GALL, Dassault Aviation, FR	560 D02/R02 Development and Assessment of a LEONAR Acoustic Liner Design for Landing Systems Noise Minimization F. SIMON, Onera, FR	437 Characteristics and Generation Mechanism of Broadband Noise from Compressor Cascade Y. MITSUSUE, University Of Tokyo, JP	454 Numerical Study of Active Flow Separation Control for UHBR Engine Integration on Generic Wing in High-Lift Configuration S. MONAT, Tel Aviv University, IL	177 Ultra-high temperature thermal cycling assessment of a functionally graded material for satellite thruster L. SEVIN, ONERA, FR	238 Vibroacoustic predictions and test campaign for the exomars structural and thermal model P. ROSARIO, Airbus, GB	118 Design and analysis of a regeneratively cooled rocket based combined cycle engine at Mach 6 J. TINGTING, Northwestern Polytechnical University, CN	76 Experimental investigation of flow regime transition for boiling hydrogen flow in horizontal pipes Y. SAKAMOTO, Jaxa, JP
18:40	TRANSFER TO DINNER VENUE (TRAM)									
20:00	GALA DINNER (PALAIS DE LA BOURSE)									
23:00	GALA DINNER (PALAIS DE LA BOURSE)									

Thursday 27th February 2020

9:00

PLENARY SESSION 4  
Chair: Valérie Guénon, Safran  
KEYNOTE SPEECH 5: Bruno Stoufflet, Green bizjets, CTO Dassault Aviation  
KEYNOTE SPEECH 6: Paul Stein, The Route to Sustainable Aviation, CTO Rolls-Royce

10:30

COFFEE BREAK

ANERS AERONAUTICS SPACE

Auditorium A R01 R02 R03 R04 R05 R06 R07 R08

Session 54 : Emissions	Session 55 : High Speed Transport & Environment	Session 56 : Evaluation of New Concepts	Session 57 : Green and safe systems & operations 2	Session 58 : Testing, Design methods & concepts 1	Session 59 : Materials Modelling, Analysis and Testing	Session 60 : Testing III	Session 61 : Structures, Thermal and Mechanisms IV	Session 62 : Optics, Optoelectronics and Photonics
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10:30-10:50

70 The contribution of carbon dioxide emissions from the aviation sector to future climate change E. TERRENOIRE, ONERA, FR	620 A Method for Supersonic Commercial Market Estimation and Environmental Impact Evaluation C. WEIT, Georgia Tech / Cnrs, US	318 A framework to assess aircraft concepts as part of a transport system: the case of regional travel V. PAPANTONI, Veatriki, DE	202 Optimal Definition of a Short-Haul Air Transportation Network for Door-to-Door Mobility L. TRAINELLI, Politecnico Di Milano, IT	138 Rapid Wind Tunnel Testing & Advanced Instrumentation – Future Testing Pillars P. WHITE, Airbus Operations Ltd., GB	699 Finite element analysis of composite double-swept helicopter blades using node dependent kinematics M. FILIPPI, Politecnico Di Torino, IT	242 A new single-wheel test bed for fast-moving planetary robots K. KAZUKI NAKAGOSHI, Tohoku University, JP	061 Centrifugal pump breadboard design for a Mechanical Pumped Fluid Loop Cooling System I-F. POPA, COMOTI, RO	527 Research on Laser Charging High Efficiency Solar Cell based on Interconnect Technology M. SHI, Sisp, CN
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10:50-11:10

653 Impacts of cloud layers overlap on contrail-attributable radiative forcing I. SANZ-MORERE, MIT, US	496 Key technologies for new generation SST A. KAZHAN, TsAGI, RU	581 An analytical approach to determine the impact force of small unmanned aerial vehicle collisions with rigid and elastic targets F. FRANKE, Technische Hochschule Ingolstadt, DE	218 Selected Issues of Design of the Gyroplane Parachute Emergency Rescue System C. RZYMKOWSKI, Warsaw University Of Technology, PL	239 Common Numerical Methods & Common Experimental Means for the Demonstrators of the Large Passenger Aircraft Platform W. KRUEGER, DLR, DE	562 Bayesian reconstruction of goal orientated error fields in large aerospace finite element models M. BONNEY, University Of Nottingham, UK	240 Research on Modal Testing Method of Membrane Antenna in Vacuum Environment J. LUO, Beijing Institute Of Spacecraft System Engineering, CN	031 Vibro-Acoustic Response Prediction of the Bartolomeo Multi-Purpose Payload M. BRANDSTETTER, Msc / FR, BE	256 On-orbit radiometric calibration program, method and performance of Chinese HY-1C satellite H. T. GAO, Beijing Institute Of Space Mechanics & Electricity, CN
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11:10-11:30

215 Mitigation potential of climate-optimized routing: concept study for Europe S. MATTHES, DLR, DE	652 Global emissions estimation for commercial supersonic fleets under different design and regulatory scenarios I. SANZ-MORERE, MIT, US	689 Image-Based Path Following Control of an Unmanned Quadrotor H. HITOMU SAIKI, National Research Institute Of Fire And Disaster, JP	251 Thermal-Dynamic Investigation of Advanced System Control Strategies for Decentralized Electro-Hydraulic Power Generation in More Electric Aircraft N. TROCHELMANN, Hamburg University Of Technology, DE	528 Comparison of low- and high-fidelity aerodynamic results of a mid-range research baseline aircraft D. SILBERHORN, DLR, DE	102 Advances in squeeze film damper models M. ARGHIR, Univ. De Poitiers, FR	042 European Research and Technology Test Facility P8.3 for full Cycle Investigations of Subscale Rocket Engines D. LINDNER, DLR, DE	029 Innovative concept for additive manufacturing of compliant mechanisms L. KIENER, Csem, CH	480 A New Snapshot Spectral Imaging Technology for Space Targets Z. LISHA, Beijing Institute Of Space Mechanics & Electricity, CN
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11:30-11:50

134 Aviation's air pollution impacts in a changing world: effects of changing background atmospheric composition I. DEDOUSSI, TU Delft, NL	693 STRATOFly MR3: towards a complete decarbonization of long-haul routes R. FUSARO, Politecnico Di Torino, IT	016 An overview of the current and future aircraft environmental control system and its air filtration system G. QUARTARONE, UTRC, IE	458 Passive anti-icing system using pass-through evaporator capillary pumped loop R. RIOBOO, Euro Heat Pipes, BE	576 New Concepts of Environmentally Friendly High-Lift Devices and Their Application in a Small-Aircraft-Transport Area W. STALEWSKI, IoA, PL	226 Simulation of the impact behavior of various materials Y. TOSO, DLR, DE	047 Guidelines For Cryogenic Adhesive Testing K. REILING, University Of Applied Sciences, DE	005 Qualification of two Phase Change Material Heat Accumulators for the HEXAFly Hypersonic glider J-P. COLLETTE, Walopt, BE	542 Stray Light Analysis and Optical Design Improvement of Visible Light Detection Camera on Space Platform Y. ZHANG, Shanghai Aerospace Electronic Technology Institute, CN
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11:50-12:10

584 Safran ultrafine particles campaigns in 2019 O. PENANHOAT, Safran, FR	745 Design of sonic boom simulators for low boom day and night, noise and vibration perception studies F. COULOUVRAT, CNRS, FR	107 Development of Fault Tolerant Electro-Mechanical Actuation System for Ailerons of Regional Aircraft T. RIPEL, Honeywell, CZ	010 Experimental setup to measure and analyze ice adhesion on Air Cycle Machine turbine exit pipe surface A. VINCENT, Cranfield University, UK	736 Reconfigurable flight control system of the GFF aircraft model with wind tunnel testing N. PEREIRA, Eesc-Usp, BR	127 Hybrid Sheet Moulding Compound With Carbon Prepregs J. SEBASTIAAN, Inegi, PT	023 Role of subscale tests in engines development programs D. SUSLOV, DLR, DE	101 Hydrostatic bearings for the aerospace propulsion M. ARGHIR, Univ. De Poitiers, FR	541 Research on underwater target detection technology based on laser polarization S. JIYANG, Shanghai Aerospace Electronic Technology Institute, CN
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12:10-12:30

322 Assessing Air Quality around a growing airport. Potential solutions for understanding pollution from airport activities E-N. BURTEA, COMOTI, RO	358 On the Possibility to Reduce the Intensity of Shock Waves Using Meshes with Application to Supersonic and Hypersonic Vehicles C. SANDU, COMOTI, RO	564 Sensing technologies in the frame of Structure Health Monitoring M-A. DE SMET, Airbus Commercial, FR	056 Ground Loads Time Monitoring System E. GOMEZ, Airbus, ES	481 Development of a Multifunctional Fuselage Demonstrator V. SEBASTIAAN, Fokker, NL	734 Optical fibre Bragg grating sensors for BVID detection on composite sub-components S. GOOSSENS, Vrije Universiteit Brussel, BE	015 ETID NE hot-fire test campaign K. LINDBLAD, GKN Aerospace, SE	059 Design and testing of a closing and sealing system for a Phobos Sample Return mission I-F. POPA, COMOTI, RO	162 Fiber Bragg Gratings for prognostics in space applications: a thermo-mechanical characterization of minimally invasive sensing techniques P. C. BERRI, Politecnico Di Torino, IT
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12:30-13:40

LUNCH

13:40

ROUND TABLE 2: Electric/hybrid Propulsion  
Chair: Rolf Henke, DLR  
Participants: Stéphane Cueille, CTO Safran, Jean Brice Dumont Airbus, Jean Botti President Voltaero, Mike Benzakein former CTO GE, Univ. Ohio State

14:40

Session 63 : CLEAN SKY TE Session 64 : Autonomous Aircraft Operations Session 65 : Propulsion Session 66 : Materials and Advanced Manufacturing for Space Application III Session 67 : Robotics Session 68 : Spacecraft Design

14:40-15:00

158 Airport in a Decarbonising Transport System, the Impact of Convergence in Disruptive Technologies and Services F. GALATIOTO, Connected Places Catapult, GB	495 The influence of the overpressure signature shape on the sonic boom loudness A. KAZHAN, TsAGI, RU	155 Clean Sky 2 „Technology Evaluator“ N. FLUETHMANN, DLR, DE	638 4D Flight Trajectory Optimization by Modified Dynamic Programming Approach A. KAWSER, University Of Beira Interior, PT	492 VHBR Propulsion Technology – Smart Integration of Demonstrators and Techno-Bricks G. WAY, Rolls-Royce Plc, GB	747 Innovative manufacturing and numerical modelling of thermoplastic and thermoset composite structures for SHM aerospace application M. Mora-Mendias, FIDAMC, ES	068 NdFeB magnets: main findings of the failure investigation activity and development of alternative approach based on 3D printed composite material L. PIGLIARU, Telespazio Vega Uk For Esa, NL	627 Ice Digging Robot with Navigation P. CATALIN, Incas, RO	406 Design of In-Orbit Self-Reconfigurable Modular Y. ZHI, Dth Satellite Co. Ltd, CN
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15:00-15:20

232 Case study on the environmental impact and efficiency of travel E. OTERO, KTH, SE	555 Supersonic aircraft compliance with noise requirements to LTO performances and airport noise exposure/impact assessment and management O. ZAPOROZHETS, National Aviation University, UA	089 Environmental Impacts of Clean Sky 2 Technologies for Next Large Passenger Aircraft P. ARBEZ, Airbus Sas, FR	715 LQG/LTR Flight Control on a Nonlinear Model T. SANCHES, University Of Beira Interior, PT	605 VHBR Propulsion Technology – Smart Integration of Demonstrators and Techno-Bricks C. DIETTE, Safran Aircraft Engines, FR	746 Structural Health Monitoring Cluster for Composite Airframe Z. Sharif Khodaei, Imperial College, GB	034 A novel semi-automated manufacturing process for X-ray and y-ray imaging grids N. GRADWOHL, University Of Applied Sciences Northwestern Switzerland, CH	548 Heterogeneous Intelligent Swarm Robotics for Autonomous Moving and Exploring on Lunar Surface C. MENG, Enshi, Hubei, CN	014 Exomars: Lightweight Structural Design for Extreme Exoplanet Environments D. CHRISTOU, Airbus, GB
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					Session 69 : Structures Design Chair:				
15:20-15:40	571 Marginal Climate and Air Quality Costs of Aviation Emissions C. GROBLER, MIT, US	329 Tonal and Broadband Noise Characteristics of Supersonic Twin Jet Noise A. MYEONG-HWAN, Korea Advanced Institute Of Science And Technology, KR	099 Clean Sky 2 TE – Environmental impact assessment at airport level M. VAN EENIGE, NLR, NL	594 Determination of acoustic characteristics of Autonomous Aircrafts for environment protection and collision avoidance in flight restricted zones V. MAKARENKO, National Aviation University, UA	482 Future Aircraft Propulsion-A Preliminary Overview of Difficult Choices F. KIRKLAND, University Of Nottingham, GB	403 Architecture-based conceptual design for mechanical systems applied to landing gear E. ALLEGAERT, Siemens, BE	038 Optimization of Selective Laser Melting Process Parameters for High Density IN625 Parts G. MATACHE, COMOTI, RO	389 The Design of Controller for Knee Joints of the Humanoid Robots Working in the Space Station Cabin P. DING, China Academy Of Space Technology, CN	660 Design and Development of DALBIT-1: Earth-based lander testbed C. SUKMIN, Kaist, KR
	Session 70 : ANERS Chair:								
15:40-16:00	RT2 Emissions Focus: invited speakers to complement the contributed papers session	228 Noise Reduction of Supersonic Civil Aeroplane at Takeoff And Landing Using Programmed Engine Thrust Control I. KHALETSKII, Central Institute Of Aviation Motors, RU	295 Design Evaluation and Performance Assessment of Fast Rotorcraft Concepts in the 2050 timeframe N. DEVAIAH, Cranfield University, GB	141 Environmental Benefits of Cooperative Obstacle Avoidance for Unmanned Aerial Vehicles using Artificial Potential Field D. P. MIREA, COMOTI, RO	646 Front Module for Low-Emission Combustor A. VASILYEV, Central Institute Of Aviation Motors, RU	052 Effects of Material and Geometrical Parameters on the Design of a Trailing Edge Twist and Camber Morphing Surface Y. ZAHOR, Tu Delft, NL	033 Increasing the acceptance rates of additively manufactured components using Image Based Finite Element Modelling (IBFEM) T. ETHERIDGE, Airbus, GB	545 Force Rendering Algorithm Based on Haptic Joystick in the Teleoperation of Space Manipulator X. A. QIU, Lanzhou Institute Of Physics, CN	580 Emergence of Airware® 2050 for Space applications M. NIEDZINSKI, Constellation, US
16:00-16:20		577 Design Optimization and Dynamic Characterization of a Tailless High Speed Aircraft Configuration C. NAE, Incas, RO	421 European TRANSCEND for novel aircraft propulsion and alternative fuels roadmaps towards 2050 J. KOS, NLR, NL	334 GPAHRS – navigation enabler for more autonomous aircraft Z. KANA, Honeywell International, CZ	645 Development and research of low-emission combustor for small-size gas turbine engine A. VASILYEV, Central Institute Of Aviation Motors, RU	445 Experimental and numerical study of the composite wing structure embedding solar cells Q. ROUXEL, Gem – Institut De Recherche En Génie Civil Et Mécanique, FR	017 Additive manufacturing of functionally graded ceramics with in-situ resources I. CHEIBAS, Esa/Estec, NL	309 ZGCSS: A robotic prototype system for enhancing the video surveillance capability of rocket/ spacecraft Y. LIU, Beijing Institute Of Astronautical Systems Engineering, CN	124 Turbine blade design methodology for a rocket engine turbopump C. DOBROMIRESCU, COMOTI, RO
				720 Optimized Sampling for Environmental Monitoring with Airborne Sensors G. AVANZINI, Università del Salento, IT					
16:20-16:50	COFFEE BREAK								
	Session 71 : ANERS	Session 72 : Urban air mobility and its impact on the environment	Session 73 : Testing, Design methods & concepts 2	Session 74 : On board energy management & Alternative Power Source			Session 75 : Mission Design and Space Systems II	Session 76 : Power	Session 77 : Satellite Communications & Operations
16:50-17:00	RT3 Environmental Interdependencies: invited speakers to tentatively review whole scope	053 New Mobility Concepts: Optimisation of Flight Movements in Europe F. THIESSEN, Tu Chemnitz, DE	92 Wall-modelled LES (WMLES) of flow conditioners B. OHLENFORST, NLR, NL	628 Impact of personal in-seat HVAC system on fuel use M. LE CAM, UTRC, IE	649 Secondary and leakage flow effect testing for high-speed low pressure turbines L. PINTAT, Safran, FR	139 Impact Resistant and Low-Weight Composite Solution for Aircraft Fuselage R. RICARDO JORGE BRAGA ROCHA, Inegi, PT	069 CNES Balloon systems and activities V. DUBOURG, Cnes, FR	390 Research on High Efficiency and Miniaturized Aerospace Switching Power Supply Based on GaN Devices W. ZHAO WENJIE, Beijing Spacecraft, CN	429 The design and implementation of 3D Visual Simulation System for Jade Rabbit-2 Movement on the surface of the moon S. JIN, Beijing Institute Of Spacecraft System Engineering, CN
17:00-17:20		360 A Methodology and first Results to assess the potential of Urban Air Mobility concepts V. GOLLNICK, Hamburg University Of Technology, DE	338 Comparison of two different flow diverters for inverted inlet T. REN, Beijing Electro-Mechanical Engineering Institute, CN	383 Testing of a compact and lightweight two-phase pumped cooling system with 3D printed aluminium components H. J. VAN GERNER, NLR, NL	479 Testing a future UHBR low-speed fan R. NORTHALL, Rolls-Royce Plc., GB	008 Passenger aircraft composite centre wing box structure optimization M. KOWALSKI, Warsaw University Of Technology, PL	006 The Minimum Fuel Consumption of a Nanosatellite Formation Flying by Essential ΔV based on GVE with Disturbing Accelerations A. PIMNOO, Geo-Informatics And Space Technology Development Agency (Gistda), TH	192 Micro/Nano Satellite Hybrid Power Management Strategy Research and Simulation C. ZHE, Beijing Institute Of Spacecraft System Engineering, CN	196 On Space Network Routing Protocol based on OSPFv3 Y. HONGCHENG, Beijing Institute Of Spacecraft System Engineering, CN
17:20-17:40		392 Future Sky Urban Air Mobility: An Outlook on the New Thematic Programme within the EREA Joint Research Initiative C. ESCHMANN, DLR, DE	339 Investigation of the configuration of bleed slot for Aerodynamics Performance M. TUO, Beijing Electro-Mechanical Engineering Institute, CN	717 Analysis of photovoltaic cells for powering a solar airplane and evaluation of the impact of photovoltaics on the environment R. KYRYLO, Agh University Of Science And Technology In Cracow, PL	261 Methodology assessment for the design and analysis of aero-engine short intakes L. BOSCAGLI, Cranfield University, GB	048 Failure modes analyses and impact on aeroelastic stability of a regional aircraft equipped with morphing winglets I. DIMINO, CIRA, IT	103 Venus sample return mission revisited D. VALENTIAN, Itg, FR	147 An Sterling Integrated Nuclear Reactor for Space Applications Y. XIA, Beijing Institute Of Spacecraft Environment Engineering, CN	060 Design, manufacturing and testing of an antenna reflector for deep space missions I.-F. POPA, COMOTI, RO
17:40-18:00	Symposium Wrap-up (rapporteurs summaries)	199 Roto-Stabilizer: Experimental Demonstration of Hyper-Stol and Vertical Flight P. CHUNG-KIAK, Aero-Persistence Research, MY	695 Supersonic Flow Analysis on Different Multi-Row Inlet Devices G. SINGH, Amity University Uttar Pradesh, IN	717 Analysis of photovoltaic cells for powering a solar airplane and evaluation of the impact of photovoltaics on the environment R. KYRYLO, Agh University Of Science And Technology In Cracow, PL	337 The effect of non-axisymmetric exhausts on the performance of installed aero-engines J. HUESO REBASSA, Cranfield University, GB	167 Investigation of Load Collectives on Transport Aircraft Using Continuous Turbulence for Fatigue Analysis Purposes V. HANDJO, DLR, DE	723 Dynamic Motion of a Descent Vehicle during the Landing Stage K. VSEVOLOD, Bauman Moscow State Technical University, RU	642 Design and control algorithm of dual switch forward DC/DC converter with DSP digital control G. CHAOMAO, Lanzhou Institute Of Physics, CN	044 For a cleaner space, the de-orbiting approach of the PROBA P200 platform with the dragsail subsystem ADEO R. ERNST, Qinetiq Space Nv, BE
18:00	CLOSING Session : Chair Z. Goraj, CEAS President TBC KEYNOT SPEECH : Hervé Martin - European Commission								
19:00	WINE TASTING CONGRESS CENTER								
21:00	Friday 28th February 2020 TECHNICAL VISITS								