

TSAS2025

“Towards Sustainable Aviation” Summit
Toulouse • France - January 28-30, 2025



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PROGRAMME

3AF

Association Aéronautique
et Astronautique de France


CLEAN AVIATION

AIRBUS



SAFRAN

LIEBHERR

ONERA

THE FRENCH AEROSPACE LAB

THALES
Building a future we can all trust

Avio Aero
a GE Aerospace company

LATRIBUNE

ISAE
SUPAERO

Le Région
Occitanie
Pyrénées-Midi-Pyrénées

DAY 1 - TUESDAY JANUARY 28

08:00 REGISTRATION AND WELCOME COFFEE

PLENARY ROOM - Cassiopée

09:00 WELCOME ADDRESSES
Welcome from the Region Occitanie
Bruno BERTHET, 3AF President

09:15 OPENING KEYNOTE
Breaking the Carbon Barrier - Sabine KLAUKE - Airbus

09:45 CONFERENCE OPENING
Alexandre JAY, Conference Chair

10:00 COFFEE BREAK

10:30 ROUND TABLE 1 : Aircraft concept & associated system architecture
Moderator : Robert LAFONTAN
Dr. Rich WAHLS - NASA; Daniel CUCHET - ATR; Pierre-Henri BROUSSE - AIRBUS; Craig BEMMENT - Rolls Royce; Christophe ROBIN - DAHER

11:30 10' INTERSESSION

| | ROOM 1 - Cassiopée | ROOM 2 - Spot | ROOM 3 - Ariane 1 | ROOM 4 - Ariane 2 |
|--------------|---|--|---|--|
| | Session 1 | Session 2 | Session 3 | Session 4 |
| | AIRCRAFT DESIGN - OVERVIEW | ENERGY AND PROPULSION - OVERVIEW | ENERGY AND PROPULSION - HYDROGEN | ENVIRONMENT |
| Chair | Daniel CUCHET - ATR | Andrew MURPHY - Pratt & Whitney | Sebastien DUBOIS - Clean Aviation | Bruno STOUFFLET - AAE |
| 11:40 | 20 Reducing Carbon Emissions in Long-Haul Flights: Challenges and Solutions Laurent TABERNIER - EUROCONTROL | 16 Energy transition and the future of aviation Herve MORVAN - Rolls-Royce plc | 156 A Roadmap Towards Sustainable Advanced Air Mobility Richard CURRAN - City, University of London | 126 Axens Technologies for Sustainable Aviation Fuels: A Complementary Approach for Achieving 2050 Greenhouse Gas Reduction Goals Thomas PLENNEVEAUX - Axens |
| 12:00 | 87 Climate benefit of using non-drop-in SAF and hydrogen in regional aircraft Regina POUZOLZ - Deutsche Aircraft | 41 Techno-Economic Analysis Framework for Advanced Sustainable Propulsion Architectures Todd SPIERLING - Collins Aerospace | 6 Paving the way towards using hydrogen in aviation: challenges and opportunities all along the hydrogen value chain: hints from the Spanish Alliance Marta MAROÑO - AIRBUS | 62 Simulation and analyses of ICAO transition scenarios using the AeroMAPS open-source framework Thomas PLANÈS - ISAE-SUPAERO |
| 12:20 | 18 General aviation can decarbonize faster than commercial aviation Gilles ROSENBERGER - NEOFUEL (No Lead & Low Carbon) | 161 Alternative fuels and new propulsion systems towards sustainable aviation – environmental impact and standardized cost estimation Ralph-Uwe DIETRICH - DLR Institute of Engineering Thermodynamics | 84 Fuel Cells: A credible technology pathway for decarbonizing Regional Air Transport Marion SCOHY - Safran Power Units | 23 A European Perspective on Sustainable Aviation Fuels: Policies, Sustainability & Costs Oliver WEISS - Deutsche Aircraft |

12:40 LUNCH BREAK

DAY 1 - TUESDAY JANUARY 28

PLENARY ROOM - Cassiopée

| | |
|--------------|--|
| 14:00 | KEYNOTE 2: Progress toward flight demonstration of the Blended Wing Body Dr. Fayette S. COLLIER, Associate Director for Flight Strategy - NASA Integrated Aviation Systems Program |
| 14:30 | KEYNOTE 3 : Cryogenic and Superconductivity development for Future Electric Aircraft Propulsion Emelie NILSSON, Scientific advisor for CRYOPROP demonstrator - Airbus UpNext |

15:00 10' INTERSESSION

| ROOM 1 - Cassiopée Session 5 | | ROOM 2 - Spot Session 6 | | ROOM 3 - Ariane 1 Session 7 | | ROOM 4 - Ariane 2 Session 8 | |
|---|--|---|---|---|--|--------------------------------|--|
| AIRCRAFT DESIGN - NEW METHODS AND TOOLS | | ENERGY AND PROPULSION - OVERVIEW | | ENERGY AND PROPULSION - HYDROGEN | | ENVIRONMENT : CONTRAILS | |
| Chair | Richard WAHLS - NASA | Todd SPIERLING - Collins | Sebastien DUBOIS - Clean Aviation | Bruno STOUFFLET - AAE | | | |
| 15:10 | 127 Conceptual Aircraft Design and AI: Developing a functional relationship for the rapid realisation of future drone concepts Mars BURKE - Brunel University London | 95 Multidisciplinary design optimization of systems for more sustainable aircraft Erich WEHRLE - Collins Aerospace | 13 Optimizing Air Filtration Systems for Hydrogen Fuel Cells in Aviation Florian CHIAPPINI - Mann+Hummel | 135 Blue Condor Hydrogen Contrails Demonstrator Fabian BAUER - Airbus Operations SAS | | | |
| 15:30 | 80 Reducing the risk associated with certifiability of new technologies through safety-informed scenarios for aircraft design validation Vincenzo PETRELLA - Collins Aerospace | 43 Multidisciplinary Optimization approach to the conceptual design of Hydrogen-Electric aircraft Anna Sofia PASSARELLI D'ONOFRIO - Politecnico di Milano | 32 A numerical design tool for liquid hydrogen tank operation strategies Eszter DUDÁS - CT Ingénierie | 97 The validity of Schmidt-Appleman criterion for modern turbofan engines: A numerical study Payyappalli MANAS - TU Delft | | | |
| 15:50 | 103 Reinforcement Learning for Testing Aircraft Handling Qualities under Model Uncertainty Aristeidis ANTONAKIS - ONERA | 117 Enhancing Systems Engineering Activities through Human-AI Collaboration with Large Language Models Jean-Marie GAUTHIER - IRT Saint-Exupéry | 47 LH2 tank wall material permeability: A means of compliance (MoC) approach. Andrej Bernard HORVAT - Pipistrel Vertical Solutions d.o.o. | 88 First flight emission and contrail measurements behind turboprop engines powered by different fuels during UPLIFT CLIM0ART Stefan KAUFMANN - German Aerospace Center (DLR) | | | |

16:10 COFFEE BREAK

| Session 9 | | Session 10 | | Session 11 | | Session 12 | |
|---|--|---|--|---|--|---------------------|--|
| AIRCRAFT DESIGN - NEW METHODS AND TOOLS | | ENERGY AND PROPULSION : Impact of technological breakthrough | | ENERGY AND PROPULSION - HYDROGEN/COMBUSTION | | NEW INDUSTRY SET UP | |
| Chair | Daniel CUCHET - ATR | Richard WAHLS - NASA | Gary WAY - Rolls-Royce | Pierre FOISSIER - Thales | | | |
| 16:30 | 26 Every Kilogram Counts: A Simplified Model for Estimating Aircraft Emissions Reduction Through Mass Minimization Alejandro TRIGUEROS ALONSO - Collins Aerospace | 102 Pragmatic Certifiable LH2 Airliner Configuration towards Efficient Aviation ECO System Raj NANGIA - Nangia | 93 Towards Hydrogen Combustion-Based Propulsion for Civil Aviation Pierre BONIJOLY - Airbus SAS | 19 Technical specifications and aircraft-route allocation Paco VIRY - ISAE SUPAERO | | | |
| 16:50 | 145 Contributions of IRT Saint Exupéry to the current challenges related to materials and processes for a cleaner aviation Yannick GIRARD - IRT Saint Exupéry | 125 Fire safety for hydrogen aircraft - overall approach and first outcomes Anaïs GAY - AIRBUS OPERATIONS | 30 The Rolls-Royce Heart Hydrogen Injector for the Pearl 15 Demonstrator Engine Ruud EGGELS - Rolls-Royce Deutschland Ltd. & Co. KG | 140 A possible path towards decarbonization: the AMBER Project Massimo MARTINI - Avio Aero (GE Aerospace) | | | |
| 17:10 | 37 Promoting Circular Economy in Aerospace: Environmental Impact Assessment and Optimization of 3D-Printed CF-PEKK and CF-PEI Components Ghita EL ANBRI - Polytechnique Montreal | 77 Preserving Safety in Electrified Skies: Understanding and Preventing Electrical Arcs in Aviation Cyril VAN DE STEEN - Safran Tech | 34 Premixed swirl-stabilized hydrogen/air flame-based turbofan: elements on combustion, combustor, and performance. Paul PALIES - UTSI | 118 Gaussian process for Bayesian optimization with mixed hierarchical variables: Application to electric-hybrid aircraft eco-design Paul SAVES - ONERA | | | |
| 17:30 | 162 Data-Driven Design: Leveraging Emissions Insights to Drive Sustainable Innovations in Aircraft and Engine Development Maxime MEIJERS - Estuaire | 73 Challenges and opportunities for future low impact jet fuels. Mickaël MATRAT - IFPEN | 48 Hydrogen Direct Burn Combustion – Route to Engine Ground Test Demonstration Duncan AUTERSON - Rolls-Royce plc | 129 Advancing LPT Blade Design: Real-Time Integration of Multi-Fidelity CFD, HPC, and AI Francesco BERTINI - AvioAero | | | |
| 17:50 | 130 Sustainability analysis and comparison of thermoplastic and thermoset aircraft component designs Angelos FILIPPATOS - University of Patras | 58 Impact of Physical model-based system security approach breakthrough on environmental safety risks Yujie ZHAO - Beihang University | 142 Hydrogen Combustion Aero Engines – Challenges and Future Trends Antonio PESCHIULLI - AvioAero | 67 Subscale Hybridized Turbofan Demonstrator Florent ROUGIER - Safran Tech | | | |

18:10 END OF DAY 1

19:00 TSAS GALA DINNER

DAY 2 - WEDNESDAY JANUARY 29

08:00 REGISTRATION AND WELCOME COFFEE

PLENARY ROOM - Cassiopée

08:30 **KEYNOTE 4 : Clean Aviation : programme challenges & opportunities**
Axel KREIN - Clean Aviation

09:00 **ROUND TABLE 2 : Designing aircraft for 100% SAF compatibility and lower non-CO2 emissions**
Moderator : Astrid SONNEFELD - NESTE
Steven LE MOING - AIRBUS; Nicolas JEULAND - Safran; Bernard HOFFAIT - TotalEnergies; Sylvain VERDIER - TOPSOE

10:00 COFFEE BREAK

| | ROOM 1 - Cassiopée Session 13 AIRCRAFT DESIGN - NEW METHODS AND TOOLS | ROOM 2 - Spot Session 14 ENERGY AND PROPULSION - SAF - UpLift-CLIM0ART project | ROOM 3 - Ariane 1 Session 15 ENERGY AND PROPULSION - HYDROGEN | ROOM 4 - Ariane 2 Session 16 OPERATIONS |
|--------------|--|---|---|---|
| Chair | Richard WAHLS - NASA | Laurence LOMBARD - TotalEnergies | Gary WAY - Rolls-Royce | Diego ALONSO - Airbus |
| 10:30 | 107 Exergy-based aerodynamic analysis methodology for low-fidelity aircraft design Guillaume BOURREAU-TIREL - ISAE Supaéro / AURA AERO | 28 The use of proxy fuels in application research to advance SAF adoption Victor BURGER - Sasol GmbH - Germany | 101 Steam Injection and Recovery in a Hydrogen-powered Auxiliary Propulsion and Power Unit Arvind GANGOLI RAO - Delft University of Technology | 76 Integrating Urban Air Mobility into Sustainable Urban Mobility Plans: A Framework and Occupational Profile for Smart Cities Anna PALAIOLOGK - Future Needs Management Consulting Ltd |
| 10:50 | 12 Future perspectives of active flutter suppression technologies based on recent flight tests Balint VANEK - HUN-REN SZTAKI | 39 Technical readiness for zero aromatic fuel at aircraft level Fulya KELES - Deutsche Aircraft GmbH | 150 Informing decarbonization pathway calculations with hydrogen-enabled engine opportunities Neil TERWILLIGER - Pratt and Whitney | 54 Model-Based Safety Analysis (MBSA) for Future Sustainable Fuels in Airports Gaurav MAHESH GOWDA - Airbus Protect |
| 11:10 | 152 Dependability and High Performance Optimization of next generation of Power Drive Systems for Aircraft Applications Fabio COCCETTI - IRT Saint Exupery | 65 Ground Emissions of DO-328 Uplift: Synthetic Proxy-PtL Fuel and Jet A-1 Comparison Nina GAISER - German Aerospace Center | 82 Hydrogen-Powered Integrated Power and Propulsion System (IPPS) Architecture for Sustainable Aviation: Leveraging Synergies between Gas Turbine and Solid Oxide Fuel Cells Diana SAN BENITO PASTOR - Safran SA. | 119 Learnings on shaping a green airport trough real life testing @ brussels airport withing STARGATE Pieter LEONARD - Brussels airport company |

11:30 10' INTERSESSION

| | Session 17 ENERGY AND PROPULSION - HYBRID | Session 18 ENERGY AND PROPULSION - SAF | Session 19 ENERGY AND PROPULSION - HYDROGEN | Session 20 OPERATIONS - NOISE |
|--------------|---|--|--|--|
| Chair | Andrew MURPHY - Pratt & Whitney | Astrid SONNEVELD - NESTE | Gary WAY - Rolls-Royce | Diego ALONSO - Airbus |
| 11:40 | 38 System Integration Challenges For Hybrid Electric Aircrafts Zubair BAIG - Pratt & Whitney | 8 Development of Sustainable Aviation Fuel (SAF) using Predictive Simulation and Performance Characterization (Environmental, Economic, and Technical) Renata BRANDELLI SCHAAN - Capgemini Engineering | 40 Low-Threshold Hydrogen Propulsion – Outcomes of the APPU Project Alexander HEIDEBRECHT - TU Delft | 24 Noise Exposure Analysis of the New Hybrid-Electric Aircraft Design within the Airport and Fleet Scenario Oleksandr ZAPOROZHETS - Sieć Badawcza Łukasiewicz – Instytut Lotnictwa |
| 12:00 | 59 Driving sustainable aviation: the role and progress of the Center for Hybrid Electric Systems Cottbus (chesco) in research, technology transfer and education Frank ARNOLD - BTU Cottbus-Senftenberg | 155 An Airline Prediction Tool for Uptake of Sustainable Aviation Fuel (SAF) Richard CURRAN - City, University of London | 89 A novel heat exchange system for fuel cell powered aircraft: trade off study on wing and nacelle integrated concepts Grzegorz KRUCZEK - Collins Aerospace | 53 Analysis of noise optimal approach procedures with on-site statistical meteorological effects Evangelia Maria THOMA - Chalmers |
| 12:20 | 45 Permanent Magnet Machines for Hybrid-Electric and Electrically Assisted Propulsion Systems Tadashi SAWATA - Collins Aerospace | 141 The 100% SAF industry imperative: How GE Aerospace is helping advance alternative aviation fuels. Sara ROCCI DENIS - GE Aerospace Advanced Tecnology | 55 Lightweight Design Strategies for LT PEM Fuel Cell Systems targeting Avionics Applications Thomas SCHUBERT - AVL List GmbH | 74 Reducing aviation noise around airports : What if landing gear played a key role ? Delphine ROBERT - AIRBUS Operations SAS |

12:40 LUNCH BREAK

DAY 2 - WEDNESDAY JANUARY 29

PLENARY ROOM - Cassiopée

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|-------|--|
| 14:00 | ROUND TABLE 3 : Ground operation decarbonation Moderator : Diego ALONSO - Airbus Jeroen JAARSTVELD - KLM; Mitchell UIT DEN BOOGAARD - Amsterdam Airport ; Frédéric VAN OOST - Smart Airport Systems |
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15:00 10' INTERSESSION

| | ROOM 1 - Cassiopée | ROOM 2 - Spot | ROOM 3 - Ariane 1 | ROOM 4 - Ariane 2 |
|-------|--|--|---|---|
| | Session 21 | Session 22 | Session 23 | Session 24 |
| | ENERGY AND PROPULSION - ELECTRICAL | ENERGY AND PROPULSION - SAF | ENERGY AND PROPULSION - HYDROGEN | OPERATIONS - ATM |
| Chair | Laurent HARTENSTEIN - Liebherr Aerospace | Laurence LOMBARD - TotalEnergies | Gary WAY - Rolls-Royce | Ovidiu DUMITRACHE - Eurocontrol |
| 15:10 | 66 Physics-Based Framework for Sizing and Pre-Designing Electric Aircraft Systems with Multiple Power Sources Jonas VERRIÈRE - Gamma Technologies | 124 BioTJet project – The first-of-a-kind industrial e-BtL plant Freddy DURAN MARTINEZ - ELYSE ENERGY | 31 Preliminary sizing of hydrogen-powered jet aircraft considering fuselage cross-section variations Gabriele SIRTORI - Politecnico di Milano | 83 ATMLab: an Air Traffic Simulator for evaluating operations' climate impact Antoine JOULIA - ONERA |
| 15:30 | 149 Superconducting CFD cables for high electric power transmission in all-electric aircrafts Haifa BEEN SAAD - Boreal Conductors Inc. | 154 Life Cycle and Cost Analysis of Synthetic Kerosene in Aviation Arvind GANGOLI RAO - Delft University of Technology | 50 Transient in operations: from jet-fuel to hydrogen-powered aircraft Gabriele SIRTORI - Politecnico di Milano | 159 Qualification/Validation of AI-Augmented ATM Solutions for Sustainable Aviation E126 Joseph MACHROUH - THALES |
| 15:50 | 146 Charging the Future: Fast-Charging Networks at Swiss Airfields to Promote Electric General Aviation Michael STIEBE - Lucerne University of Applied Sciences and Arts | 157 A Roadmap for Uptake of Sustainable Aviation Fuel (SAF) In India Richard CURRAN - City, University of London | 105 Will hydrogen aircraft be heavier than conventional kerosene aircraft? Jean-Marc MOSCHETTA - ISAE-SUPAERO | 160 AI for Green Aviation Operations: towards operative contrails mitigation Davide DI GIUSTO - THALES |

16:10 COFFEE BREAK

| | Session 25 | Session 26 | Session 27 | Session 28 |
|-------|---|--|---|---|
| | ENERGY AND PROPULSION - ELECTRICAL | SUSTAINABLE AERODYNAMICS - WING | ENERGY AND PROPULSION - HYDROGEN | OPERATIONS |
| Chair | Jean Michel FREY - Liebherr Aerospace Toulouse | Richard CURRAN - City, University of London | Prof. Arvind GANGOLI RAO - TU Delft | Ovidiu DUMITRACHE - Eurocontrol |
| 16:30 | 86 Li-Ion Battery Thermal Runaway and Containment Modelling Hariharan KALLATH - Collins Aerospace | 92 eXtra performance WING demonstrator Adrien BERARD - Airbus Upnext | 136 A side-by-side comparison of the aerodynamic performances of kerosene and hydrogen aircraft Cedric LEROY - ISAE Supaero | 69 Statistical Analysis of Business Jet Operations using ADS-B Flight Data Nathan LOUVEL - Université de Sherbrooke |
| 16:50 | 9 Installation of solar cells on a standard aircraft Renata BRANDELLI SCHAAN - Capgemini | 153 Aerodynamic design of a high aspect ratio strut-braced wing based on an MDO strategy Diego LOSADA COSTOSO - ONERA | 96 Sizing a fuel cell-based propulsion system: an MDAO-driven approach Roberto DI GIUSEPPE - SafranTech | 106 Impacts of Rising High-Temperature Extremes on Aircraft Performance and Emissions at TakeOff in the Euro-Mediterranean Region Victoria GALLARDO - University of Murcia - CECl, Cerfacs/CNRS |
| 17:10 | 72 Design Of a High efficiency 300 kw Interleaved Boost Converter For an eVTOL Aircraft Youssef HENNANE - Capgemini Engineering | 51 Multidisciplinary Optimization of Strut-Braced Wings with Distributed Electric Propulsion for Local Air Quality and Noise Improvements Rauno CAVALLARO - Universidad Carlos III de Madrid | 91 Small-Scale Experimental Learnings for Future Hydrogen Aviation: the BEAUTHYFUEL Project Adrien CAHUZAC - Safran | 4 Sustainable Taxiing with the TaxiBot: An update and some real-life experiences with aircraft taxiing solution without aircraft engines running. Frédéric VAN OOST - Smart Airport Systems |
| 17:30 | 52 Towards Higher Voltage Levels in Electric Machines for Aviation Torstein AAKRE - SINTEF Energi AS | 5 The effect of proturbance structures on the aerodynamic performance of an aerofoil Samuel JENNINGS - Evri | 33 Aircraft electrical propulsion system powered by solid oxide fuel cell thermodynamically integrated into gas turbine Jean-Michel ROGERO - AIRBUS SAS | 98 Reducing aircraft carbon footprint on the ground Jean-Philippe BEAUJARD - FlightWatching |
| 17:50 | | 144 Low-Speed Lift-Enhancement of Nonplanar Wing Sections UCAV Model Hassan ALEISA - University of Glasgow | 15 Feasibility tool and business plan for the adaptation of airports to hydrogen-powered aircraft. Sara SOPENA - ESEIAAT | 64 Integration of liquid H2 refuelling infrastructure into existing airports Luc KORZILIUS - Pipistrel Vertical Solutions |

18:10 END OF DAY 2

18:20 CLOSING COCKTAIL - TSAS BEST PAPER AWARDS

DAY 3 - THURSDAY JANUARY 30

08:00 REGISTRATION AND WELCOME COFFEE

PLENARY ROOM - Cassiopée

08:30 KEYNOTE 5 : Advanced technologies executive manager for Avio Aero, a GE Aerospace business
Luca BEDON - Avio Aero

09:00 ROUND TABLE 4 : Engine architecture
Moderator : Franck HASELBACH
Dr. Dale VAN ZANTE- Advanced Air Transport Technology (AATT); Uwe MINKUS - Rolls Royce; Massimo MARTINI - Avio Aero; Andrew MURPHY - Pratt & Whitney;
Dr. Fayette S. COLLIER - NASA; Vanessa LE ROUSSEAU - Safran

10:30 COFFEE BREAK

| | ROOM 1 - Cassiopée | ROOM 2 - Spot | ROOM 3 - Ariane 1 | ROOM 4 - Ariane 2 |
|--------------|---|---|---|--|
| | Session 29 | Session 30 | Session 31 | Session 32 |
| | SYSTEM | GAS TURBINE | ENERGY AND PROPULSION - SAF | ENVIRONMENT |
| Chair | Richard CURRAN - City, University of London | Andrew MURPHY - Pratt & Whitney | Astrid SONNEVELD - NESTE | Bruno STOUFFLET - AAE |
| 10:50 | 25 Efficient Phase-Change Fluid Model Applied to a Skin Heat Exchanger 3D Steady Thermal Simulation Jose Maria CHAQUET - ITP Aero | 22 HEAVEN – Delivering a step change in efficiency and an optimum propulsion architecture for SMR aircraft Craig BEMMENT - Rolls-Royce | 21 The Path to Greener Skies: Analysing SAF electricity and biomass needs in the EU27 from 2030 to 2050 Laurent TABERNIER - EUROCONTROL | 44 Analysis of pollutant dispersion of a DHEP and LARW aircraft design using high-fidelity simulations Swapnil SINGH - Barcelona Supercomputing Center |
| 11:10 | 139 Cabin energy recovery for a commercial aircraft, challenges and solutions Frederic SANCHEZ - Liebherr Aerospace | 121 Advanced RQL Combustion Tim SNYDER - Pratt & Whitney | 108 Synthesized Aromatic Kerosene (SAK) – SAF Product Diversification Edgar STEENWINKEL - Virent | 109 CICONIA: Cracking the non-CO2 conundrum Philippe MASSON - AIRBUS |
| 11:30 | 116 Plasma flow control inside the S-duct. Konstantinos KONTIS - University of Glasgow | 143 Development of Innovative Endwall Ridging Technology for Reducing Secondary Losses in Next-Generation LPTs for Aeronautical Applications Francesco BERTINI - AvioAero | | |

11:50 10' INTERSESSION

PLENARY ROOM - Cassiopée

12:00 KEYNOTE 6 : Safran propulsion strategy and roadmap for future sustainable aviation
Vanessa LE ROUSSEAU - Safran

12:30 TSAS 2025 - Conclusion

12:40 LUNCH BREAK

14:00 TECHNICAL VISITS

16:00 END OF CONFERENCE