



## PROGRAM at a Glance



Wednesday, Feb.7, 2024			
08:00	09:00	Registration - Welcome Coffee	
09:00	09:30	Opening Amphi 1 & 2 (video)	Welcome address and institutional support to cleaner aviation
09:30	10:00	Keynote 1 Amphi 1 & 2 (video)	Florent Nierlich - Safran
10:00	10:30	Keynote 2 Amphi 1 & 2 (video)	Andrew Murphy - Pratt & Whitney Todd Spierling - Collins Aerospace
10:30	11:10	Break - Exhibition Gymnasium	
11:10	12:25	Oral session 1a 3 papers Amphi 1	Aircraft Architecture - Part 1
			Oral session 1b 3 papers Amphi 2
			Thermal management
12:25	14:00	Lunch break Exhibition Gymnasium	
14:00	14:30	Keynote 3 Amphi 1 & 2 (video)	Michael Augello - Airbus Upnext
14:30	15:00	Keynote 4 Amphi 1 & 2 (video)	Clement Dinel, Ascendance Flight Tech.
15:00	16:15	Oral session 2a 3 papers Amphi 1	Propulsion systems
			Oral session 2b 3 papers Amphi 2
			Non propulsive systems
16:15	17:30	Break - Exhibition - Poster session 1 Gymnasium	
17:30	18:20	Oral session 3a 2 papers Amphi 1	Power generation
			Oral session 3b 2 papers Amphi 2
			Certification
19:30	GALA DINNER Downtown (Gare Matabiau - Hall M) Shuttle bus between ISAE Supaero and gala dinner (no bus for travel back after dinner)		

Thursday, Feb.8, 2024			
09:00	09:30	Keynote 5 Amphi 1 & 2 (video)	Denis Descheemaeker - IRT St Exupéry
09:30	10:00	Keynote 6 Amphi 1 & 2 (video)	Philippe Novelli - ONERA
10:00	11:15	Break - Exhibition - Poster session 2 Gymnasium	
11:15	12:55	Oral session 4a 4 papers Amphi 1	Aircraft Architecture - Part 2
			Oral session 4b 4 papers Amphi 2
			Power conversion - Part 1
12:55	14:00	Lunch break Exhibition Gymnasium	
14:00	15:40	Oral session 5a 4 papers Amphi 1	Hydrogen on board
			Oral session 5b 4 papers Amphi 2
			Power conversion - Part 2
15:40	16:00	Quick Break	
16:00	17:15	Oral session 6a 3 papers Amphi 1	Electromagnetic compatibility and energy storage

Note: each oral presentation is 25 min, questions included





-	Welcome address and institutional support to cleaner aviation	Institutions and Authorities	
KN1	More Electrical Systems for Next Generation Platforms	Florent Nierlich	Safran
KN2	Electrification and sustainability	Andrew Murphy	Pratt & Whitney
		Todd Spierling	Collins Aerospace

### Session S1a : Architecture - part 1 - 11:10 - Amphi 1

O1	The Distributed Electric Propulsion Scaled Flight Demonstrator DEP-SFD as a flying test bench for electrical architectures	Carsten Döll	ONERA
O2	High Power, High Scalability, Hybrid Powertrain (H3PS) Aircraft Demonstrator	Gergely Deak	Rolls Royce Hungary Kft.
O3	EcoPulse – Hybrid Demonstrator with Distributed Electric Propulsion	Didier Simeon	Daher

### Session S1b : Thermal management - 11:10 - Amphi 2

O4	Characterization of local thermal resistances along electrical harnesses connectors	Alexandre Marie	ICAM, Toulouse Campus
O5	Development of a bi-directional modular converter and its thermal management system for a future much more electric aircraft	Salvatore Ameduri	CIRA
O6	How to assess and minimize the impact of occupants' thermal comfort on aeronautic vehicles energy management	Nicoletta Sanguini	Leonardo Helicopters

### Keynotes - 14:00 - Amphi 1 & Amphi 2 (video)

KN3	Making the Unthinkable Real - Some lessons learned on how to accelerate innovation	Michael Augello	Airbus Upnext
KN4	Hybrid Electric Technology: A Key Enabler for Low Carbon Aviation	Clément Dinel	Ascendance Flight Tech.

### Session S2a : Propulsion systems - 15:00 - Amphi 1

O7	Alternative propulsion system for helicopter	Stephane Beddok	Safran Helicopter Engines
O8	A turboelectric distributed propulsion concept for hydrogen-powered blended-wing body aircraft architectures	Pavlos Rompokos	Cranfield University
O9	Cryogenic electric propulsion system: ASCEND main results and perspectives	Ludovic Ybanez	Airbus

### Electromagnetic compatibility and energy storage

O10	Resonant Electromechanical Ice Protection Systems: Test Results on NACA Profiles	Younes Rafik	INSA Toulouse
O11	Innovative Electro thermal Wing Ice Protection System: key enabler towards 'More Electrical Aircraft'	Guillaume Fievez Olivier Prin	SONACA LTS
O12	Preparing Electric Actuation Technology for Upcoming Applications	Nilolaus Dreyer	Liebherr Aerospace

### Session S3a : Power generation - 17:30 - Amphi 1

O13	Reliability-Oriented Optimization of High Performance SiC-Based Power Drive Systems for Aircraft Applications	Bernardo Cougo	IRT Saint-Exupery
O14	Contribution of machine learning techniques for the recognition of arc faults in aviation: Case of DC serial arcs	Raul Carreira Rufato	LPEM, ESPCI Paris - PSL, CNRS, Sorbonne Université

### Session S3b : Certification - 17:30 - Amphi 2

O15	Hydrogen Aircraft Certification: Determination of Regulatory Gaps	Joël Jézégou, Robert André	ISAE-SUPAERO, Airbus
O16	Electrical Propulsion & Certification Challenges	Alexis Renotte	Safran

P1-1	Multi-Fidelity Approach for Aerodynamic Optimization of Propeller Blades in VTOL UAVs	Nina Moëlle	ISAE-Supaero
P1-2	Soft defects detection and localization on aeronautic wire harness by MCTDR reflectometry	Marc Olivas	WiN MS
P1-3	eVTOL electrical architecture wide band frequency modeling for network quality specification	Mariem Jday	Capgemini Engineering
P1-4	Sizing of a Spherical Hydrogen Tank for an eVTOL electrical power supply	Anis Idir	Capgemini Engineering Toulouse
P1-5	Methodology of robust analysis using small gain theorem applied to aeronautical HVDC networks	Ugo Ginestet	Safran Tech
P1-6	Analytical Models for Magneto-Mechanical Sizing of a High-Speed Induction Machine for Aircraft Electric Generation	Larbi Dahnoun	Safran Tech
P1-7	TSAR – numerical LH2 tank simulation tool	Eszter Dudás	CT Ingénierie
P1-8	Dual Active Bridge converter Transformer flux balancing	Michel Jamot	Airbus Helicopters
P1-9	Sensitivity Analysis and Optimization of a Liquid Cooling Thermal Management System for Hybrid Fuel Cell Aircraft	Valentine Habrard	ISAE-Supaero
P1-10	Avionic Piezoelectric Deicing System: Numerical and Experimental Investigation of the Use of Extension Modes for Deicing	Modar Jomaa	ENS Paris-Saclay
P1-11	Control design and flight simulation for a DEP aircraft using differential thrust allocation	Rodrigo Casajus	ISAE-Supaero
P1-12	Lattice Boltzmann Method for Under Hood Hydrogen Leakage Numerical Simulation	Thomas Lafarge	CS group
P1-13	Thrusting MEA by Trusting SiC based power electronics	Olivier Perrotin	Alter Technology France
P1-14	Full instantaneous electromechanical de-icing using extensional modes	Giulia Gastaldo	ISAE-Supaero
P1-15	Mobile charging system for flexible and convenient charging of electric aircraft	Daniel Buvarp	Uppsala University
P1-16	An insight on the DC-side differential mode power quality requirement in a battery driven motor drive systems for an aerospace application assisting the component sizing.	Subhadra Tiwari	Rolls-Royce Electrical Norway

## Keynotes - 9:00 - Amphi 1 & Amphi 2 (video)

KN5	FILAE: R&T emblematic project on electrical aircraft carried by French Institutes of Technology	Denis Descheemaeker	IRT St Exupery
KN6	Perspectives of hybridization for commercial aircraft: the lessons learned from the IMOTHEP project	Philippe Novelli	ONERA

## Session S4a : Architecture - part 2 - 11:15 - Amphi 1

O17	Testbed for evaluation of Electric propulsion Architectures	Samuel Bonnard	ONERA
O18	Review and comparative analysis of various hybridization strategies for energy management in eVTOL aircraft	Afef Najjar	Capgemini Engineering
O19	Climate and energy impact analysis of electric, hybrid-electric and hydrogen aircraft in prospective scenarios for air transport	Scott Delbecq	ISAE-Supaero
O20	Powering Airbus Future Ambitions	Gabriel Beulaguet	Airbus

## Session S4b : Power conversion - part 1 - 11:15 - Amphi 2

O21	A new SSPC family: an example with the HVDC SSPC	Rodolphe De Maglie	Liebherr-Electronics and Drives GmbH
O22	Fault-tolerant magnetic coupling topology for network parallel multilevel inverters	Rita Mattar	Safran Tech
O23	Arc tracking power balance: Method for determining fusion and vaporization power	Flavien Valensi	LAPLACE - Université Paul Sabatier
O24	High Frequency modelling to predict inter-turn voltage distribution in electrical machines for aeronautical application	Helena Gressinger	Safran Tech

## Session S5a : Hydrogen on board - 14:00 - Amphi 1

O25	Digital Twin of complete Fuel cell demonstrator	Matthieu Ponchant Jan Belak	Siemens Industry Software Honeywell International
O26	Hydrogen on board – Lessons learned from Space Launchers – Challenges and Opportunities	Simon Menager	ArianeGroup
O27	HOPE Project: Hydrogen Fuel Cell System Technologies for zero Emission Aircraft Propulsion	Guillaume Hubert Christophe Maury	Safran Power Units Safran Tech
O28	Thermal stratification for various design of the LH2 tank	Thibaut Dochy	CT Ingénierie

## Session S5b : Power conversion - part 2 - 14:00 - Amphi 2

O29	Superconducting flux modulation machine for aircraft applications	Rémi Dorget	Safran
O30	Design guidelines of a battery-to-HVDC power converter for hybrid electric regional aircraft	Alejandro Llop	Tecnalia, Basque Research and Technology Alliance
O31	Parallel multilevel inverter for a departed electrical motor drive: Studies & Developments	Rita Mattar	Safran Tech
O32	Interactions between a fuel cell and its associated power converter : recommendations for the design with regard to the state of the art	Christophe Turpin	LAPLACE - Université Paul Sabatier

## Session S6a : Electromagnetic compatibility and energy storage - 16:00 - Amphi 1

O33	New EMC shielding harness characterization up to 9GHz	Charles Jullien	Safran Electrical and Power
O34	Enhancing Power Density in Medium Power Inverters for Electric and Hybrid Aircraft Propulsion: Addressing Thermal and EMC	Victor Dos Santos	Safran Tech
O35	Crash testing lithium-ion battery for helicopters	Séverin Halbout	Airbus



## MEA'24 Thursday, Feb. 8, 10:00-11:15 - Poster session 2

P2-1	Concept and Control of a Resonant Power Processor for a Permanent Magnet Synchronous Motor	Jean-François Bisson	École de technologie supérieure
P2-2	Low frequency design criteria for carbon fibre composite casings for aircraft power electronic converters	Mark Higgins	University of Strathclyde
P2-3	Aircraft passenger door optimized by electrifying its energy system	Gregoire Le Goff	LAAS, Université de Toulouse, CNRS
P2-4	Electrical Power Transportation for Electrical propulsion Systems	Charles Jullien	Safran Electrical and Power
P2-5	Techno-economic analysis of green hydrogen production for Toulouse-Blagnac airport	Badr Eddine Lebrouhi	Capgemini Engineering
P2-6	A Comparative Study for AC Losses of PM Electrical Machines between Submerged Slots and Hollow Conductors	Sullivan Kuttler	Safran
P2-7	Experimental and numerical investigation of direct two phase cooling for semiconductors	Antoine Loehrmann	Airbus SAS
P2-8	Pressure's Impact on Load Current Decrease in Series Arc Faults	Yousra Aichoun	Université Paris-Saclay, Laboratoire de Génie Electrique et Electronique de Paris
P2-9	Direct Coupling of Parallel Hybrid Propulsive System and Vehicle-Level Integrated Mission Performance Aircraft Sizing Models	Aleksandar Joksimović	ISAE-Supaero
P2-10	Supporting Aircraft Electrification Technology Development with Modelling and Simulation	Maria Fernandez Jimenez	MathWorks
P2-11	Modeling and simulation of PEM fuel cell behavior for aircraft propulsion under steady-state and dynamic conditions	Marco Avila Lopez	Capgemini Engineering
P2-12	Analysis of the effects of partial discharges in a power cable for aeronautical applications	Vladimir Ricardo Pineda Bonilla	Airbus Helicopters ; Laboratoire de Génie Électrique et Électronique de Paris (GeePs)
P2-13	Design and simulation of a power module for helicopter Electro-Hydrostatic Actuator	Mingwei Sun	Beihang University
P2-14	Aeroelastic Behaviour of Urban Air Mobility Aircraft with Distributed Electric Propulsion	Antoine Boissinot	Concordia University
P2-15	From towing to take-off assistance, the U-shaped linear induction motors to reduce consumption and emissions of aircraft	Gerard Coquery	TACV Lab
P2-16	An ultra long-range electric drone powered with liquid hydrogen	Sofia Mertika	ISAE-Supaero