

# At a glance

## Tuesday 24.05.2022

Room A			
09:00 - 09:30	Welcome		
09:30 - 10:30	Keynote I		
10:30 - 11:00	Coffee break		
Room B	Room C	Room D	
11:00 - 12:30	S1: Predictive aircraft maintenance integrating RUL prognostics-I	S2: Advanced Maintenance Strategies I	S3: Operational Monitoring using Airframe Digital Twins in Aerospace-I
12:30 - 13:30	Lunch		
13:30 - 15:00	S4: Predictive aircraft maintenance integrating RUL prognostics-II	S5: Advanced Maintenance Strategies II	S6: Operational Monitoring using Airframe Digital Twins in Aerospace-II
15:00 - 15:30	Coffee break		
15:30 - 17:00	S7: PHM Solutions	S8: Application of innovative health monitoring techniques I	S9: Establishing CBM
19:00 - 23:00	Dinner		

## Wednesday 25.05.2022

Room B	Room C	Room D	
09:00 - 10:30	S10: Prognostics Models	S11: Application of innovative health monitoring techniques II	S12: Health Monitoring on Helicopters and UAVs
10:30 - 11:00	Coffee break		
11:00 - 12:30	S13: Data limitations and IT enablers	S14: Application of innovative health monitoring techniques III	S15: SHM Solutions
12:30 - 13:30	Lunch		
Room A			
13:00 - 14:00	Keynote II		
14:00 - 14:30	Coffee break		
14:30 - 15:30	European Academy on Condition-Based Maintenance		
15:30 - 16:00	Closure		

# Detailed sessions

	Session 1	Session 2	Session 3
Tuesday	<b>Predictive aircraft maintenance integrating RUL prognostics-I</b>	<b>Advanced Maintenance Strategies I</b>	<b>Operational Monitoring using Airframe Digital Twins in Aerospace-I</b>
11:00 - 11:20	Integrating Remaining-Useful-Life prognostics into opportunistic maintenance of aircraft landing gear brakes, Ingeborg de Pater and Mihaela Mitici	A Comparative Study of Optimization Models for Condition-Based Maintenance Scheduling, Iordanis Tseremoglou, Paul J. van Kessel, Bruno F. Santos and Floris Freeman	Digital Twins for military assets, V.S.Viswanath Dhanisetty and Marcel Bos
11:20 - 11:40	A novel approach for prediction of civil aircraft braking control performance based on probabilistic bayesian LSTM and DTW Algorithm, Tian Qiao, Xiao Wang, Weining Zheng and Chi Ma	A Framework for Post-Prognosis Decision Making Utilizing Deep Reinforcement Learning Considering Imperfect Maintenance Decisions, Panagiotis Komninos, Dimitrios Zarouchas and René Alderliesten	Digital Twin based damage diagnostics of composite structures, Dimitrios Milanoski, Georgios Galanopoulos, Dimitrios Zarouchas and Theodoros Loutas
11:40 - 12:00	Smart Predictive Monitoring for regional Aircraft Pack system, Weining Zheng, Chi Ma and Tian Qiao	Condition-Based Maintenance Planning of an Aircraft Fleet Under Partial Observability: a Reinforcement Learning Approach, Iordanis Tseremoglou and Bruno F. Santos	A Health Index Framework for Condition Monitoring and Health Prediction, Alexander Kamtsiuris and Florian Raddatz
12:00 - 12:20	Physics-based Induction on Deep Learning for Prognostics and Health Management of Complex Systems in Aerospace, Manuel Arias Chao	Designing aircraft condition-based maintenance considering reliability and cost-efficiency objectives, Juseong Lee and Mihaela Mitici	Operational Monitoring using Airframe Digital Twins, Derk Daverschot and John Van Doeselaar
	Session 4	Session 5	Session 6
Tuesday	<b>Predictive aircraft maintenance integrating RUL prognostics-II</b>	<b>Advanced Maintenance Strategies II</b>	<b>Operational Monitoring using Airframe Digital Twins in Aerospace-II</b>
13:30- 13:50	Federated Models for CBM via Adaptive Learning, Miguel Fernandes, Alberto Cardoso, Joel P. Arrais, Catarina Silva and Bernardete Ribeiro	Impact of improved maintenance in the CleanSky II projects AIRMES and DEMETER, Hendrik Meyer, Christop Mostert, Christian Willberg, Joel Ferreira and Franz Zafra-Evers	Structural Health Monitoring (SHM) for in-service life extensions support, Pablo Caffyn, Alejandro Lopez Garcelan and Daniel Inesta
13:50 - 14:10	Practical requirements for integrating Remaining Useful Life prognostics into predictive aircraft maintenance planning, Ingeborg de Pater and Mihaela Mitici	Playful Probing Design Insights into Human-ML Collaborations for CBM, Jorge Ribeiro and Licinio Roque	Transfer Learning to close the gap between experimental and numerical data, Hadrien Postorino, Eric Monteiro, Marc Rebillat and Nazih Mechbal
14:10 - 14:30	A Health Index Framework for Condition Monitoring and Health Prediction, Alexander Kamtsiuris and Florian Raddatz	Reinforcement Learning for Adaptive Fleet Maintenance Scheduling, Pedro Andrade, Catarina Silva, Bernardete Ribeiro and Bruno Santos	IVHM FOR UAVs FOR FUTURE MRO – OPERATIONAL FRAMEWORK, REQUIREMENTS, AND GAP ANALYSIS, Ann-Kathrin Koschlik, Hendrik Meyer, Jan Torben Dohmen and Florian Raddatz
14:30 - 14:50	Design of a Reinforcement Learning Enabled Tool for Aircraft Condition Based Maintenance Planning and Visualisation, Jorge Ribeiro, Pedro Andrade, Manuel Carvalho, Catarina Silva, Bernardete Ribeiro and Licinio Roque	Airmedt – Aircraft maintenance and evaluation decision tool, V.S.Viswanath Dhanisetty	A conceptual approach and roadmap to HUMS for EVTOL, Christian Janke and Eric Bechhofer

# Detailed sessions

	Session 7	Session 8	Session 9
Tuesday	<b>PHM Solutions</b>	<b>Application of innovative health monitoring techniques I</b>	<b>Establishing CBM</b>
15:30 - 15:50	A Prognostic Framework to Detect and Predict Failures on Satellite Systems, Marie Bieber, Bruno F. Santos and Wim J.C. Verhagen	Engine Condition Trend Monitoring for condition based maintenance, Jan Willem Wiegman, Pauline Vos and Anne Oldersma	Navigating Civil Aviation Regulations for Health Monitoring, David Piotrowski
15:50 - 16:10	Probabilistic HUMS condition indicators thresholding using Gaussian process regression on conditioned quantiles estimated from gamma mixture model, Maxime Meuterlos, Valerio Camerini, Jérôme Antoni, Lucas Macchi and Gianni Naccarato	Evolutionary Algorithm for Enhanced Gas Path Analysis in Turbofan Engines using On-Wing Data, Tim Rootliep, Wilfried Visser and Michiel Otten	Adapting Commercial Best Practices to U.S. Air Force Maintenance Scheduling, Eric Klein, Kyle Blond, Anne Clark, Austin Himschoot and Steve Conley
16:10 - 16:30	Hybrid (physics and data-based) approach to assess health diagnostic and prognostic of E190 Bleed System, Rúben Menezes, Leonardo Paula and Roberto Hirschmann	Condition-based Maintenance Considerations for Safety-critical Decision Support in Aircraft Engines, Asteris Apostolidis and Konstantinos Stamoulis	Value of information analysis to reduce CBM investment risk – use case for retrofitting sensors on aircraft systems, Floris Freeman
16:30 - 16:50	Application of PHM in a real-time and system of systems environment, Lorenz Dingeldein	Application of PHM in a real-time and system of systems environment, Lorenz Dingeldein	Roadmap for regulatory path and industry best practices to CBM implementation in civil aviation, Dragos Budeanu
	Session 10	Session 11	Session 12
Wednesday	<b>Prognostics Models</b>	<b>Application of innovative health monitoring techniques II</b>	<b>Health Monitoring on Helicopters and UAVs</b>
09:00-09:20	Time-frequency Health Conditions for Remaining Useful Life estimation, Raúl Llasag Rosero, Catarina Silva and Bernardete Ribeiro	Packaging of optical fiber sensors for CBM of composite aerospace structures, Daniele Inaudi	CBM benefit assessment on fatigue computation for rotor parts with in-service usage data, Emmanuel Laillet, Pierre-Loic Maisonneuve and Roméo Byzery
09:20-09:40	Remaining Useful Life prognosis of representative aeronautical structures using novel strain based Health Indicators, Georgios Galanopoulos, Dimitrios Milanoski, Agnes Broer, Dimitrios Zarouchas and Theodoros Loutas	Remaining Useful Life prognosis of representative aeronautical structures using novel strain based Health Indicators, Georgios Galanopoulos, Dimitrios Milanoski, Agnes Broer, Dimitrios Zarouchas and Theodoros Loutas	Usage Monitoring of Helicopter Gearboxes with ADS-B Flight Data, David Hünemohr, Jörg Litzba and Farid Rahimi
09:40-10:00	Data-Driven Prognostics of Delamination Growth under Fatigue Loading with Emphasis on Aeronautical Composite Structures, Ferda Gul, Rinze Benedictus, Rafik Hadrja, Yevgeniya Lugovtsova and Dimitrios Zarouchas	On the challenges of upscaling damage monitoring methodologies for stiffened composite aircraft panels, Agnes Broer, Nan Yue, Georgios Galanopoulos, Rinze Benedictus, Theodoros Loutas and Dimitrios Zarouchas	Monitoring Oscillating Ball Bearings Degradation for electromechanical Flight Control Actuators of Unmanned Aerial Vehicles, Mohamed A.A. Ismail, Robert Kowalski and Jens Windelberg
10:00-10:20	Explainable Artificial Intelligence for Prognostics and Health Management of Aerospace Systems, Marcia Baptista	Fusion of SHM techniques for synergetic degradation monitoring of composite aircraft wing structure under compression fatigue, Nan Yue, Agnes Broer, Georgios Galanopoulos, William Briand, Marc Rébillat, Theodoros Loutas and Dimitrios Zarouchas	An Intelligent Fault Diagnosis Method for UAVs based on Few-shot Learning, Chuanjiang Li, Shaobo Li, Ansi Zhang, Zhiyuan He and Konstantinos Gryllias

# Detailed sessions

	Session 13	Session 14	Session 15
Wednesday	<b>Data limitations and IT enablers</b>	<b>Application of innovative health monitoring techniques III</b>	<b>SHM Solutions</b>
11:00 - 11:20	Federated quantum machine learning: overcoming data-sharing limitations, Niels Neumann, Bart Kamphorst and Frank Phillipson	Health Monitoring in Civil Aviation, David Piotrowski	Numerical Simulations in Ultrasonic Guided Waves Analysis for the Design of SHM Systems – Benchmark Study based on the Open Guided Waves Online Platform Dataset, Jean Lefèvre, Christian Willberg, Enes Savli and Kilian Tschöke
11:20 - 11:40	Numerical Simulations in Ultrasonic Guided Waves Analysis for the Design of SHM Systems – Benchmark Study based on the Open Guided Waves Online Platform Dataset, Jean Lefèvre, Christian Willberg, Enes Savli and Kilian Tschöke	Health monitoring of aircraft systems: challenges and perspectives based on a real-life study case (SCU system), Luis Basora and Xavier Olive	Smart Sensor System based Damage Identification in Composite Structures, Richard Loendersloot
11:40 - 12:00	Maintenance of capital goods under incomplete information and constrained maintenance resources, Ragnar Eggertsson, Rob Basten and Geert-Jan van Houtum	Health monitoring for a helicopter Environmental Control System, Pauline Vos, Tiedo Tinga and Frank Hartvelt	Structural Health Monitoring of Aerospace structures using built-in sensor networks, Amrita Kumar, Susheel Yadav, Subir Patra, Serena Wang, Grant Chang, Douglas Furstinger, Cody Gray and Franklin Li
12:00 - 12:20	ReMAP IT Platform in support for automated aircraft condition-based maintenance, Iván Carillo and Miguel Angel Esbri	Improving aircraft maintenance performance through prescriptive maintenance strategies, Robert Meissner and Kai Wicke	Improving aircraft maintenance performance through prescriptive maintenance strategies, Robert Meissner and Kai Wicke
12:20 - 12:40			Advanced landing gear fibre optic sensing and monitoring system, Frank Grooteman, Raphaël Goutagny, Chris Davies, Thijs van Leest, Ian Platt and Jerry Symons