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Program

Additive Manufacturing in Aviation

Clean Aviation Workshop
January 17th – 18th, 2024
Aachen, Germany

CLEAN AVIATION

Introduction

In the Clean Aviation Joint Undertaking the aviation industry is applying additive manufacturing (AM) in several projects. Material suppliers, manufacturers, research institutions and the aviation industry are collaborating to increase the maturity of AM and to decrease the buy-to-fly ratio for metals.

Additive manufacturing offers great potential for improving materials efficiency, reducing life-cycle impacts, and enabling greater engineering functionality compared to conventional manufacturing. AM has been increasingly adopted by aircraft component manufacturers for lightweight designs.

Workshop topics

- Legislation and regulation for AM in aviation
- Characterization and certification of AM parts
- Powder production and powder treatment
- Treatment of production waste
- Powder recycling
- Manufacturing efficiency
- Life cycle assessment of AM in aviation

Agenda

17th January 2024

- **Additive manufacturing workshop**
  Fraunhofer Institute for Laser Technology ILT
  15.00 – 17.00

- **Technical tour**
  Fraunhofer Institute for Laser Technology ILT
  17.00 – 18.30

- **Networking dinner, 20.00**
  Restaurant Am Knipp
  Bergdriesch 3
  DE-52062 Aachen
  www.amknipp.de

18th January 2024

- **Additive manufacturing workshop**
  Fraunhofer Institute for Laser Technology ILT
  09.00 – 13.00

General information

Venue

The workshop will be held in the conference room at:

Fraunhofer Institute for
Laser Technology ILT
Steinbachstrasse 15,
52074 Aachen (Germany)

Registration:

Please send an e-mail with your complete address to
gabriela.gromer@ict.fraunhofer.de.
Please specify if you will participate f2f or online.

Participation fee

Presenters will be free of charge
Regular participation fee (f2f): 200 €
Online participation fee: 100 €

Chairman

Rainer Schweppe
Fraunhofer Institute for Chemical Technology ICT
Environmental Engineering
Joseph-von-Fraunhofer-Str. 7, 76327 Pfinztal, Germany
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Organizing committee

- Thomas Reichert, Gabriela Gromer; Fraunhofer ICT
- Sabine Aref; GUS e.V.
- Simon Vervoorth; Fraunhofer ILT
- Christian Weiß; Fraunhofer ILT

Hotel recommendation:

Hampton by Hilton - Aachen Tivoli***
Merowinger Str. 2, 52070 Aachen
info@hamptonaachen.de
Phone +49 241 955 9300
Booking link: group.hamptoninn.com/a2y3kg

Aquis Grana Cityhotel ****
Büchel 32, 52062 Aachen
reservations@hotel-aquisgrana.com
Phone +49 241 443-0

Please book and pay directly in the hotel, citing the keyword "Clean Aviation 2024".

Workshop program

17th January 2024

14:30 **Registration for day 1**

15:00 **Welcome & introduction**
Simon Vervoortt, Fraunhofer ILT, Germany
Rainer Schweppe (workshop chairman), Fraunhofer ICT, Germany

15:10 **P 1** **RACER rotorless tail – disruptive design and advanced manufacturing**
Juan Manuel Jimenez Garcia[1],
Dr. Fernando Lasagni[2]
[1]Head of Research and Innovation, Airbus Helicopters Spain, Madrid, Spain
[2]CTO Materials & Processes, CATEC Advanced Center for Aerospace Technologies, Seville, Spain

15:40 **P 2** **Titanium connection brackets using laser wire DED**
Marko Bosman
GKN Aerospace, Fokker Aerostructures B.V., Papendrecht, The Netherlands

16:10 **P 3** **Manufacturing an aircraft lining panel using hybrid technologies**
Xavier Tuto Cabedo
LEITAT Managing Technologies, Barcelona, Spain

17:00 – 18:30 **Technical tour**
Fraunhofer Institute for Laser Technology ILT

20:00 **Networking dinner**

Workshop program

18th January 2024

08:50 **Registration and welcome, day 2**

09:00 **P 4** **Hybrid additive manufacturing with preforms for repair application**
Christian Weiß, Simon Vervoort, Tim Lantzsch
Fraunhofer ILT, Aachen, Germany

09:25 **P 5** **Powder production for AM**
Daniel Beckers
Rosswag Engineering, Pfinztal, Germany

09:50 **P 6** **Overcoming metal AM powder production challenges for aerospace applications**
Francois Bonjour
6K Additive, USA/France (European Director)

10:15 **Coffee break**

10:40 **P 7** **Methodology for life-cycle inventory and assessment for FRC NGCTR gear box housing**
Giada Luppino, Sergio Sartori,
Dario Bonanno, Martina Morsilli
Leonardo Company S.p.A., Cascina Costa, Italy

11:05 **P 8** **Life-cycle assessment of helicopters AM parts: a necessary lever to support industrial deployment and certification**
Tom Delage, Johannes Siegert
AIRBUS HELICOPTERS S.A.S.,
Marignane, France

11:30 **P 9** **LCA for AM for engine stators**
Killian Fricke[1], Gilles Bessenay[2]
[1]Fraunhofer IPT,
Aachen, Germany
[2]Safran Aircraft Engines,
Courcouronnes, France

11:55 **Open panel discussion**

12:50 **Closing remarks**

13:00 **End**