

Workshop on future Cabin Air Quality Research

Cologne, 30 - 31 January 2020

The workshop aims to investigate the main areas for new research projects addressing Cabin Air Quality with a focus on contamination events and health risk assessments:

- Measurements of contamination events
- Characterisation of low dose / chronic release of pollutants
- Toxicological assessments (dose-response) and investigations of health effects
- Epidemiological studies on the exposure to pollutants
- Bio-monitoring, medical surveys of aviation professionals
- Psychological study
- Risk mitigations

The workshop will gather representatives from the Scientific Community and Aviation Stakeholders such as: Aircraft Manufacturers – Engine Manufacturers – Airline Worker Associations – Research Institutions – Airline Associations – Aeromedical Associations – Regulatory Authorities – Industry Association – Occupational Health Agencies.

Agenda

DAY 1

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|   | <p>09:15 – 10:00 CHECK-IN AND WELCOME COFFEE</p> |
| <p>10:00 – 10:30</p> | <p>EASA / DG-Move Opening of the Workshop and Welcoming Remarks Luc Tytgat - Strategy & Safety Management Director EASA Torsten Klimke - Deputy Head of Innovation & Research DG-Move</p> <p>Aim of the Workshop, Practical Arrangements Emmanuel Isambert EASA Thorwald Buck EASA</p> |
| <p>10:30 – 12:00</p> | <p>SESSION #1</p> <p>Cabin Air Quality : State-of-the-art of research and Perspectives</p> <p>Presentations: ECA, BDL, Scientific Expert, Fraunhofer</p> <p>Discussions</p> |



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| 12:00 – 13:00  | LUNCH BREAK |
| 13:00 – 14:30 | <p>SESSION #2</p> <p>Diagnosis, Toxicological Assessment, Health Risk Assessment</p> <p>Presentations: Air France, ESAM, IfADo, DLR, University of Stirling</p> <p>Discussions</p> |
| 14:30 – 14:45  | COFFEE BREAK |
| 14:45 – 16:15 | <p>SESSION #3</p> <p>Sampling & Measurement of Cabin Air Quality, Bio-monitoring</p> <p>Presentations: NLR, BG Verkehr, VITO</p> <p>Discussions</p> |
| 16:15 – 16:45 | Wrap up of Day 1 |
| 18:00  | NETWORKING RECEPTION |

DAY 2

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| 08:30 – 09:00  | WELCOME COFFEE |
| 09:00 – 11:00 | <p>SESSION #4</p> <p>Fume Event Reporting & Investigation</p> <p>Presentations: EASA, BEA, GCAQE, KLM</p> <p>Discussions</p> |
| 11:00 - 11:30  | <p>COFFEE BREAK</p> <p>MICROBIAL AIR SAMPLER DEMONSTRATED BY DLR</p> |

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| <p>11:30 – 12:45</p> | <p>SESSION #5</p> <p>Risk Mitigation</p> <p>Presentations: ADSE, University of Brussels, Pall Aerospace, Honeywell</p> <p>Discussions</p> |
| <p>12:45 – 13:30</p>  | <p>LUNCH BREAK</p> |
| <p>13:30 – 14:30</p> | <p>Views on Research priorities</p> <p>Break-up in 5 groups</p> <ul style="list-style-type: none"> • Research / Academia • Safety regulators • Manufacturing & Service (aircraft, engine, systems) • Airlines – Operators • Unions / Airline Worker Associations - Occupational Health Associations |
| <p>14:30 – 14:45</p> | <p>COFFEE BREAK</p> |
| <p>14:45 – 16:00</p>  | <p>Summary of Working Group results</p> <p>Wrap up and Way-forward</p> <p>Future networking opportunities</p> |

Organisator:

Thorwald Buck - Environmental Control Systems Expert

Emmanuel Isambert – Senior Research Officer

LIST OF PRESENTATIONS

| Organisation | Presenters | Title | Domain | Session |
|--|---|--|--|---------|
| ECA (Eurocockpit Association) | Paulina Marcickiewicz | Views on future research for cabin air quality | | 1 |
| BDL – German Aviation Association | Marian Kortas | CAQ - Perspective of Airline Operations and derived Research Needs | | 1 |
| Scientific Expert | Dr. Francesca Costabile | State-of-the-art of CAQ related research | | 1 |
| Fraunhofer Institute | Dr. Sven Schuchardt | Recommendation for a large scale research project plan | | 1 |
| Air France | Dr. Vincent Feuillie | Onboard fume events: short term health consequences for aircrew | Health risk assessment | 2 |
| ESAM (European Society of Aerospace Medicine) | Ries Simons | Establishing the diagnosis of an alleged neuropathic syndrome | Health risk assessment | 2 |
| DLR | Dr. Christine Hellweg Dr. Ralf Moeller Dr. Daniel Schmeling | Research on biodiagnostic, microbiological and ventilation approaches ² | Toxicological assessment | 2 |
| IfaDO – Leibniz Center Working Environment | Christoph van Thriel | Odor-related health effects and neurotoxic risk assessment | Toxicological assessment | 2 |
| Univ. of Sterling | Dr. Susan Michaelis | Cabin Air Quality Research Proposals | Health risk assessment | 2 |
| VITO | Marianne Stranger Gudrun Koppen | Human bio-monitoring and comparison to the exposures in other indoor/ outdoor environments | Bio-monitoring | 3 |
| NLR | Johan Kos | Time-resolved Cabin Air Quality measurements | Cabin air measurements | 3 |
| IPA - BG Verkehr (German Social Accident Insurance Institution) | Dr. Tobias Weiss | Biological Monitoring in Air Crews after Fume and/or Smell Events | Bio-monitoring | 3 |
| EASA | Alessandro Cometa | Reported events involving cabin air contamination and investigations performed | Fume event reporting and investigation | 4 |
| BEA – FR Accident Investigation Bureau | Dr. Didier Delaitre | Medical aspects of a fume event investigation conducted - case of crew incapacitation | Fume event investigation | 4 |
| GCAQE | Capt. Tristan Loraine | Development of an Event Reporting System Global Cabin Air Reporting System (GCARS) | Fume event investigation | 4 |
| KLM | Huub Agterberg | Report & analyses of fume events at KLM | Fume event investigation | 4 |

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| ADSE | Ferdinand Spek Ellen Norde | Risk mitigation strategy and proposed research | Risk mitigations | 5 |
| University of Brussels ULB | Mariano Di Matteo | Enhanced aero-engine oil system components for an improved cabin air quality | Risk mitigations | 5 |
| Pall Aerospace | Chris Savage | Measurement of contamination events | Risk mitigations | 5 |
| Honeywell | Ralf von Frieling | Risk mitigation | Risk mitigations | 5 |

