

# Workshop on future Cabin Air Quality Research

30<sup>th</sup> – 31<sup>st</sup> January 2020

Workshop results &  
Stakeholder recommendation

Thorwald Buck  
Emmanuel Isambert

**Your safety is our mission.**

# Stakeholder prioritisation / recommendation

- The following recommendations have been recommended to EASA by the 5 Group of external Stakeholders to EASA

# Group: Worker Unions / Occupational Health bodies

#	Research topics – Top 3	
1	<b>EU Standardised Medical Protocol</b> incl. small fibre neuropathy, long capacity diffusion test, health effects of UFP, neurocognitive testing, bio-monitoring...	
2	<b>Practical preventive measures</b> (integration/implementation/evaluation) Detection, filtration, new protective equipment...	
3	<b>Comparative Epidemiological Research</b> (symptomatic and not) e.g. Respiratory, neuropathic syndrome, Parkinson, dementia, cancer	

# Group: Academia / Universities

#	Research topics – Top 3	
1	<b>How effective are mitigation strategies such as air filtration and sensors to improve cabin air quality and health?</b> <ul style="list-style-type: none"><li>- Intervention (filters in passenger aircraft)</li><li>- Inflight air quality characterisation (UFP, VOCs, CO ...)</li><li>- Health follow-up (questionnaire)</li><li>- Bleed air and ventilation simulation</li><li>- In vitro toxicology</li></ul>	
2	<b>Expand the above study to a larger epidemiology study with an intervention group with defined medical protocol and FSE reporting</b>	
3	<b>Expand toxicological analysis (in vitro lung toxicity, neurotoxicity) and human exposure study</b>	

# Group: Airlines and Airline Associations

#	Research topic – Top 5	
1	Technical - Maintenance Assess ... investigation TS procedure; looking at ducting, air filter and air flows	Session 1 Item 4
2	Technical - Reporting ... improve existing good reporting for analysing data, better kind of characterization, definition CAQ event, fume, smell	Session 4 Item 2
3	Technical - Sensor Technology to better identify causes	Session 1 Item 6
1	Medical - Epidemiology studies	
2,3	Medical - Standardised protocol with acute and chronic health issues Psych-social factors	

# Group: Manufacturers

#	Research topics – Top 3	
1	<b>Prevention - Both Ground and Flight</b> <ul style="list-style-type: none"><li>a. Standardization of markers</li><li>b. Purification Technology Evaluation</li><li>c. Standardized Test Mixtures or parameters such as vibration, for Sensors and Purification Devices- with relevant levels of markers</li><li>d. Performance Based Standard recommendation for levels of significance for markers</li></ul>	
2	<b>Predictive Monitoring to Drive Aircraft Maintenance Planning to minimize downtime and aircraft pushback/in-flight turnback</b> <ul style="list-style-type: none"><li>a. Include additional factors that cause odour, including fans and electrical equipment</li><li>b. Characterize equipment failure physics and chemistry</li><li>c. Define desired chemistry for current and future aircraft hardware to reduce events</li><li>d. Definition of market that would promote adoption by operators.</li></ul>	
3	<b>Characterization of Sources</b> <ul style="list-style-type: none"><li>a. Identify contaminant patterns</li><li>b. Recommend System locations for monitoring</li><li>c. Identify system parameters at recommended monitoring locations, including temperature &amp; pressure</li><li>d. Recommend methods to characterize markers of sources</li><li>e. Recommend the least number of markers or tracers</li><li>f. Expand markers beyond bleed air, such as methods to predict fan bearing and electrical failures</li><li>g. Collaborate with FAA/ACER</li></ul>	

# Group: Regulators / Standardisation

#	Research topics / recommendations	
1	The results of present and future studies/research should be accepted all stakeholders	
2	Regulators could address CAQ issues to occupational medical services on the basis of the state of the art	
3	Review of methods for reporting to safety authorities	
4	Evaluate certification standards for cabin air	

[easa.europa.eu/connect](https://easa.europa.eu/connect)



**Your safety is our mission.**

An Agency of the European Union 