

## **Technical Assessment for Halon replacement agents by the Cargo Compartment Halon Replacement Advisory Group (CCHRAG)**

Dr. André Freiling, Expert Fire Protection, Airbus, CCHRAG Chairman

Email: [andre.freiling@airbus.com](mailto:andre.freiling@airbus.com)

Telephone: +49 421 538 2762, mobile : +49 160 90 10 55 02

Airbus Commercial Aircraft, Airbus-Allee 1, 28199 Bremen

Action has been taken by the aerospace industry to introduce halon alternatives for fire protection in aircraft and to engage stakeholders in finding solutions. The manufacturing industry has consistently worked toward these objectives and has been active in researching halon alternatives. Progress has been made in all areas, i.e. engines and auxiliary power units (APUs), hand held extinguishers and cargo compartments. Significant hurdles remain. This presentation provides a status report and a summary of a recent technical assessment of potential cargo halon replacement technologies conducted by the Cargo Compartment Halon Replacement Advisory Group (CCHRAG).

With respect to the cargo compartment, the industry is committed to supporting the 2024 deadline for halon replacement in cargo compartments of new type certificated aircraft with applications submitted after November 2024. The industry has conducted a technical assessment of potential technologies in order to determine if a conceptually validated halon-free fire suppression system will be available in time to meet that deadline. The findings of the assessment indicate that there is at least one candidate system with prototype components for the cargo compartment that has been defined and laboratory validated (i.e. having reached TRL 4 or 5) at this time. Assuming further development by the participants and timely government approvals, the CCHRAG is optimistic that a solution will be available to meet the 2024 deadline and therefore, does not propose a revised date at this time.

All participants to the assessment have either documented the technology readiness level to TRL3 for their solutions or are promoting solutions that could potentially be adapted to aircraft cargo compartment fire protection. For most, much developmental work still remains and acceptance is dependent on performance and economic viability to justify a strong business case.