

New Fire/Smoke Detection and Fire Extinguishing Systems for Aircraft Applications

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Abstract

The on hand paper gives an overview on the European Community-funded research work on environmentally friendly aircraft fire extinguishing systems. The presented work overview is part of the FIREDETEX project, which's consortium consists in a partnership of 13 companies and universities from 5 European countries.

The nowadays in every modern aircraft used halons destroy the atmospheric ozone layer and are therefore banned by the Montreal Protocol. In the future, fire suppression agents must not contribute neither to ozone depletion nor to global warming. But they must possess at least the same good extinguishing qualities as the halons. The FIREDETEX project will face this challenge by developing a combined watermist/nitrogen extinguishing technology which fulfils the strong environmental and human-toxic requirements. Earlier studies [1] have already shown, that a technology based on watermist is in principle able to cope with the requirements [2] of a future fire suppression system. Further investigation is necessary to solve challenges like agent freezing, drainage, maintenance or system complexity. A prerequisite for utilising such techniques is the harmonisation of design and compatibility between the advanced fire suppression and detection systems.

A zonal fire suppression system based on watermist requires a detection system, which is able to locate a fire and thus to allow the suppression of the related zone. Besides the development of an improved early and reliable basic fire detection system, this special watermist-related detection device will as well be regarded within the FIREDETEX work.

The FIREDETEX Project has started in February 2000 and is currently in the full-scale test work phase.

References

- [1] FIREDETEX (Fire Detection and Suppression Simulation)
BriteEuram Project, Framework 4, Project No. BE95-1977
- [2] Minimum Performance Standards for Aircraft Cargo Compartment Built-In Fire Suppression Systems, FAA Fire Safety Section, International Aircraft Systems Fire Protection Working Group