European Research on Aircraft Fire Detection

The Third Triennial International Aircraft Fire and Cabin Safety Research Conference
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Motivation for R&D

False Fire Alarm Rate!!!

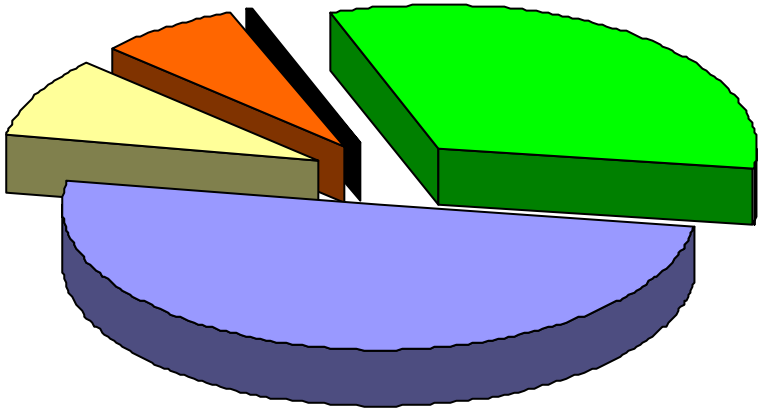
Approach for improvement

- Launch of European Research Programme FireDetEx
- Start was 02/00 => Project is at mid term

- Goal of the project:
- Selection of new technologies for aircraft fire detection
- Analysis if ground based fire detection technologies can be transferred to aircraft application.

- Fire Detection correlated partners:
- AOA Gauting (D), Siemens Cerberus (F), Latecoere (F)

Fire case / non-fire case Analysis

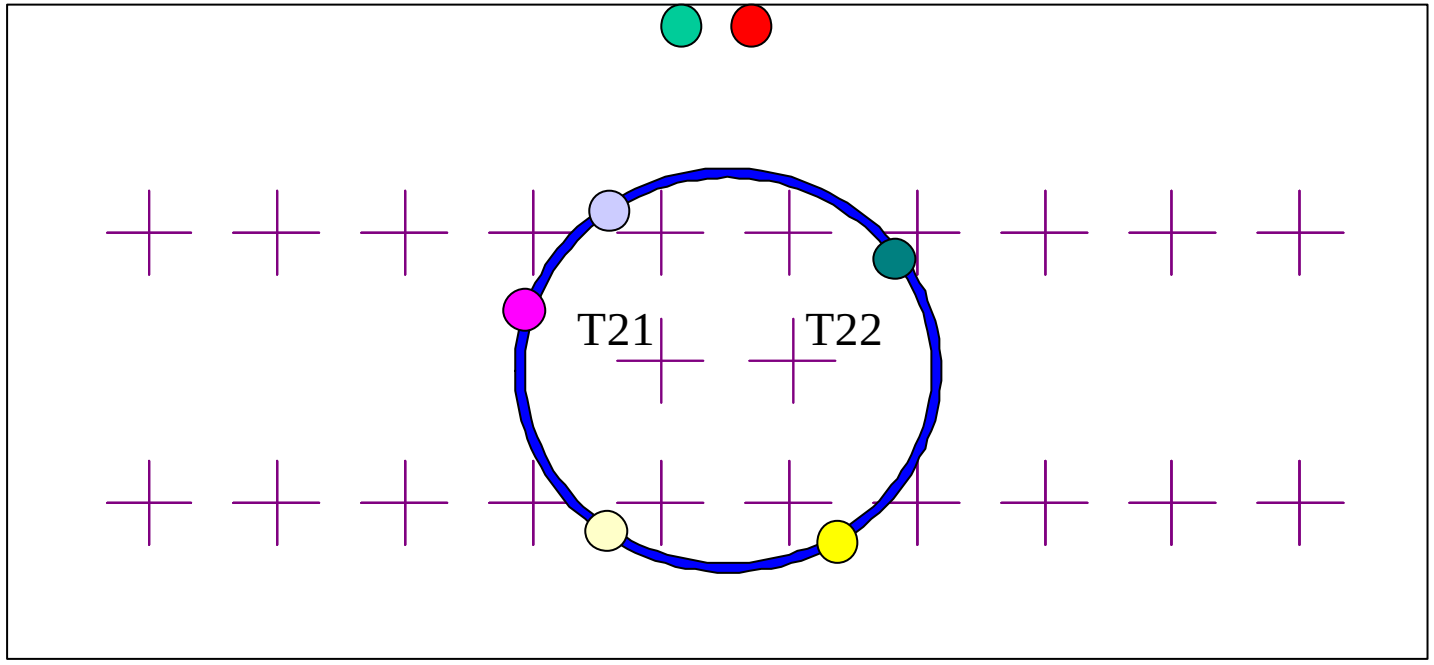


Optical detectors

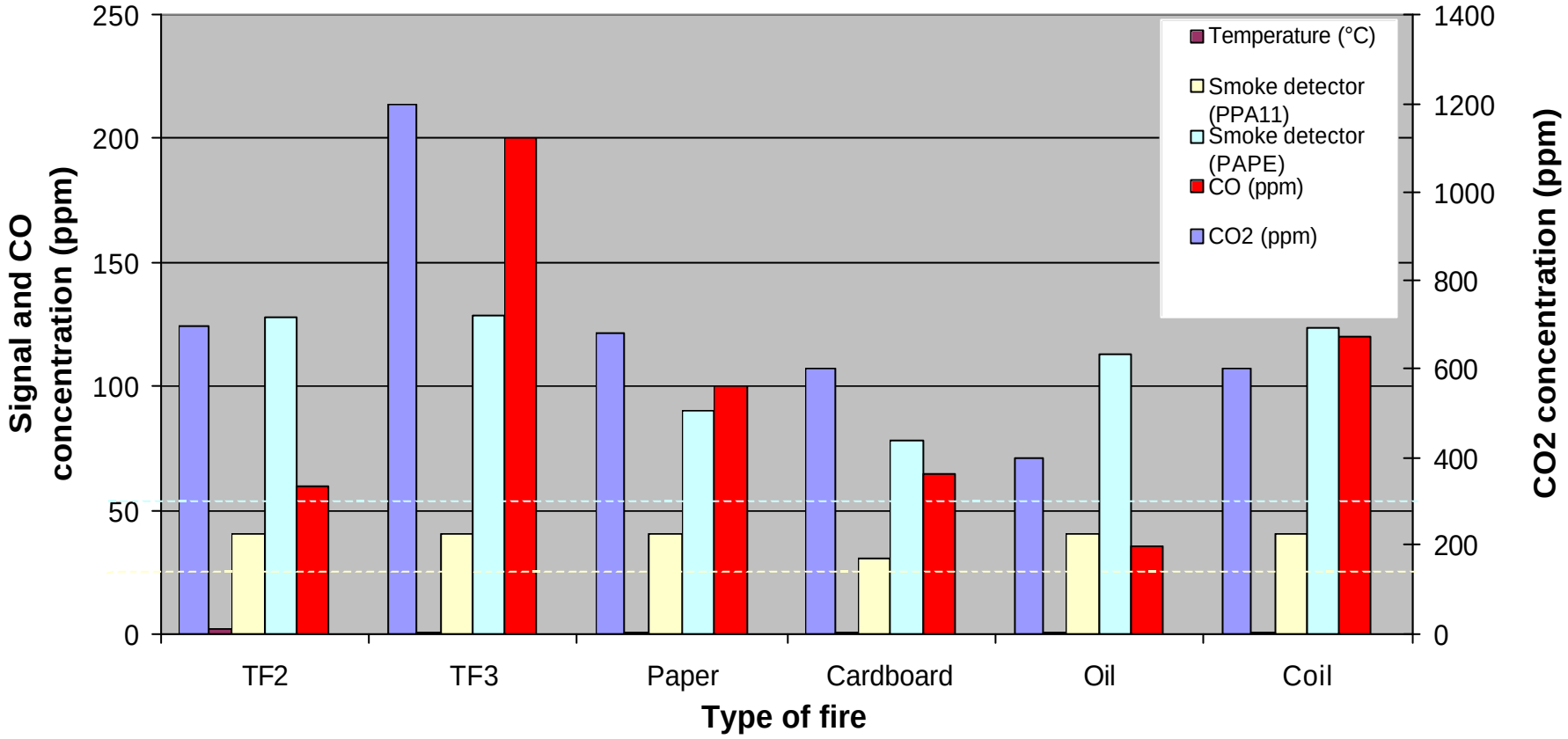
Gas analyzer

SAW sensors and IR CO2 sensor

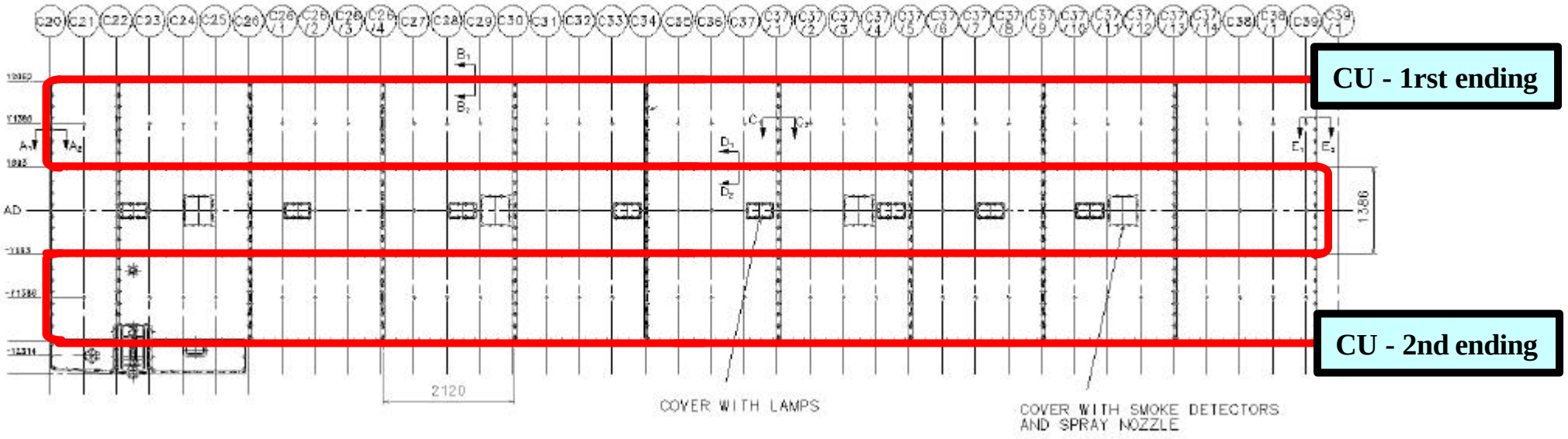
Position of the detectors on a circle of 3 m in diameter at the ceiling



Summary of the variation of the sensor response and gas concentration during smouldering fires

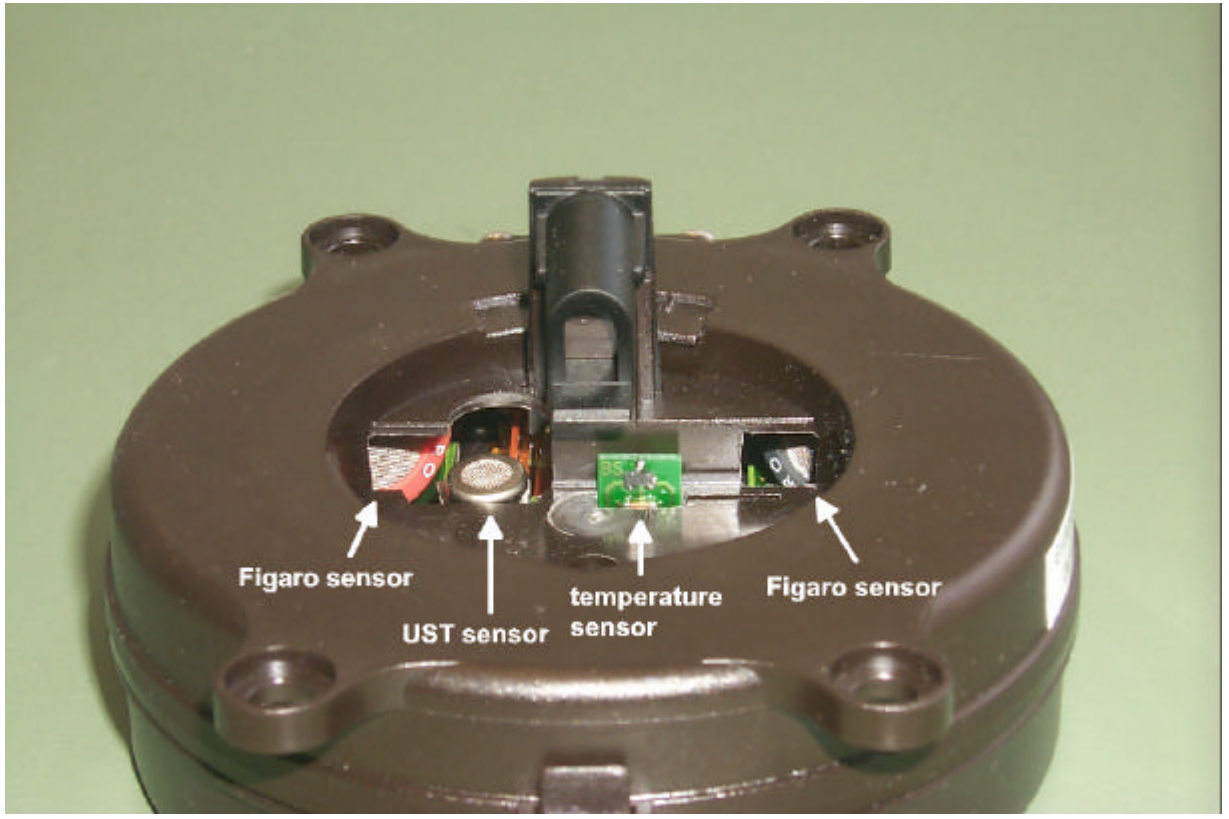


Ref.: Siemens Cerberus SA



Ref.: Siemens Cerberus SA

Sensor Prototype

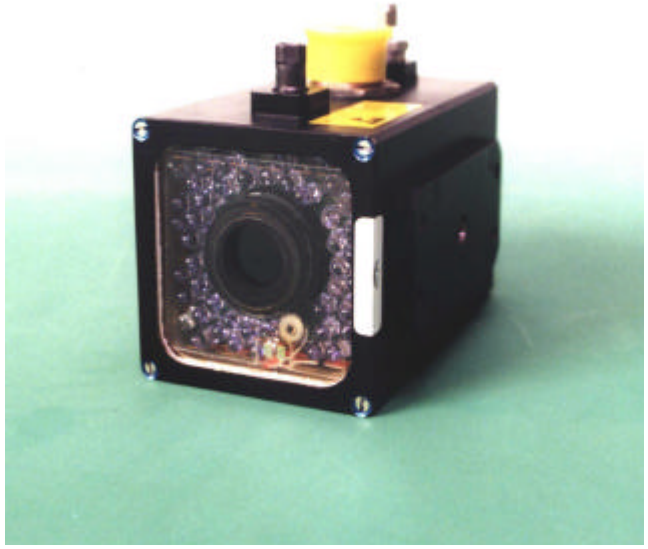


Ref.: aoa Apparatebau Gauting

Fire Detection in equipment bays

- **Positioning of sensors**
  - **Objective**
    - Optimised detection methods and new positioning of sensor systems in the various bays
  - **Steps to achieve the defined Objective**
    - Definition of relevant equipment bays with description of air flow conditions
    - Analysis of the best detection methods for the relevant bays and/or a single equipment in the bays
    - Definition of power consumption of the relevant equipment
    - Definition of ”hot spots”
    - Estimation of type and volume of a fire case

Video Technology



Summary

Different directions of R&D:

Gas Sensors for fire detection equipment bays, prototypes established

Analysis of fire/non-fire cases

Improvement of smoke detectors (cargo compartments)

Promising: Video based fire detection as an additional means