Cargo Compartment Fire Verification System
- Image based fire/smoke detection (Video-detection)

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Today’s Situation

- False cargo compartment smoke warnings occur in service

- A lot of efforts have been spent by concerned parties to reduce the false alarm rate – but it’s not zero
  (it’s between 200:1 & 10:1 depending on consideration)

- False alarms may still be caused by equipment failure, too long cleaning intervals, not well packed freight e.g. vegetables, perishables, seafood etc.

As long as the crew is unable to differentiate between a true and a false warning, they have to land the aircraft as soon as possible

Diversions Caused by Cargo Compartment False Smoke Alarms

Source: FAA Report
DOT/FAA/AR-TN0029
June 2000
How to enhance flight safety

- Each emergency landing comprises additive risks etc. …..

- A cargo fire verification system can support the flight deck crew in the decision making process

- Image based information would be preferred by the pilots but must not mislead them

An image based Cargo Fire Verification System with high quality HMI in consideration of fire/smoke verification aspects would help the crew to better evaluate the true urgency of the situation
Cargo Fire Verification System (CFVS)

Airbus has conducted technological work and feasibility studies on image based fire verification systems.

Conclusion:
The Cargo Fire Verification System (CFVS) will support the crew in LAND ASAP decision making process

• CFVS will be designed to be installed in class C cargo holds
• Provides an image based information on flight deck
• It’s an additional system to the smoke detection system (LROPS)
• Based on CCD & Infra Red cameras (multi sensor units)

It’s a new detection technology and some algorithms need still to be developed / validated (Long lead-time item)
Solution 1

CFVS – Lower Hold
- Sensor Unit Locations A340-600 Example
Solution 2
Cargo Fire Verification System
– Images on EIS (study item)

(only for demonstration)
Fire & non Fire Algorithms are mandatory for image processing

- Fog / condensation should be discriminated from real smoke

Fog after opening the cargo door at Hong Kong
Cargo Fire Verification System (CFVS) - Image based fire/smoke detection

Your Turn

Questions?