

## **Proposed Special Condition on Missile Protection System installation**

### **Applicable to Large Aeroplane category**

#### **Introductory note:**

The following Special Condition has been classified as an important Special Condition and as such shall be subject to public consultation, in accordance with EASA Management Board decision 02/04 dated 30 March 2004, Article 3 (2.) of which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

#### **Statement of Issue**

A Supplement Type Certification (STC) applicant has applied for the installation of Missile Protection System, designed with the ability to detect a possible Man Portable Air Defence Systems (MANPAD) approaching and deploy a decoy.

As the proposed installation is a novel and unusual design feature, the applicable airworthiness / operational codes (JAR/CS 25, EU-OPS, ...) do not provide standards or specific guidance material for this type of installation, EASA will therefore review the installation as with other such systems to determine that it will not introduce a Hazard to either the aircraft on which it is installed, aircraft in its proximity in flight or people/property below the intended flight path.

This is the so-called "No Hazard" approach.

### **Large Aeroplane category - Special Condition F-01**

#### **- Missile Protection System installation-**

The applicant shall show that during normal operation or as a result of system or aircraft failures, that the risk to aircraft, passengers or people and property on the ground have been minimised. The following should be considered:

1. Design protection
  - Protection against HIRF (JAA INT/POL 25/2) and Lightning (JAA INT/POL 25/3 and JAA INT/PLO 25/4).
  - Appropriate Hardware and software qualification (DO-178B/DO-254/DO-160E).
  - Wire routing protection and segregation
  - Flight envelope inhibition (speed, altitude etc)

- Prevention of inadvertent dispensing on or near the ground
  - Protection of other aircraft.
  - Minimisation of third party perception of system operation.
2. Fire Protection
- Protection of aircraft from un-dispensed decoy ignition.
  - Protection of system and decoys from onboard aircraft heat sources and fires.
  - Protection of occupants in event of emergency evacuation.
  - Protection of rescue personnel.
  - Minimise the fire risk to people and property on the ground
3. Operating Limitations
- Minimise flight crew interface and potential distraction, preferably just on/off operation.
  - Appropriate Flight Manual Limitations and Procedures
4. Maintenance and Servicing Instructions
- Provide appropriate safety information to ground/maintenance personnel.
  - Provide appropriate Maintenance and ICA information
5. Placards and Warnings.
- Decoys should be appropriately marked with hazard and disposal information
  - Parts of the installation that could potentially injure passengers, crew or ground personnel should be appropriately marked or placarded.

As EASA has not published performance standards for this type of system, it will therefore not review or make any evaluation of the system's effectiveness to identify and counter MANPAD threats, and EASA will need to put a limitation in the STC approval stating that:

*"The STC grants no operational approval, the aircraft operator will need to obtain operational approval from the Agency or Authority responsible from the State of registry and the State in who's airspace it is to be operated."*