Proposed Equivalent Safety Finding on CS 25.969 : Fuel tank expansion space Applicable to Dassault Aviation (DA) Falcon 5X

Introductory Note:

The hereby presented Equivalent Safety Finding has been classified as an important Equivalent Safety Finding and as such shall be subject to public consultation, in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, 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:

The EASA requirement CS 25.969, applicable to the DA Falcon 5X states the following:

*"**CS 25.969 Fuel tank expansion space***
Each fuel tank must have an expansion space of not less than 2% of the tank capacity. It must be impossible to fill the expansion space inadvertently with the aeroplane in the normal ground attitude. For pressure fuelling systems, compliance with this paragraph may be shown with the means provided to comply with CS 25.979(b)."

In the Falcon 5X airplane, the wing and main fuel tanks are individual tanks that, according to 25.969, should each one have an expansion space of at least 2 %. As fuel tank expansion space is provisioned per group of tanks and not per tank, the design is therefore not strictly compliant with 25.969 since some of the individual tanks may not have an expansion space of not less than 2% of the tank capacity.

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Applicant Proposal:

Through the current DA Falcon 5X architecture, it is proposed to comply with the requirement 25.969 by considering that individual fuel tanks are grouped and that each group of fuel tanks functions as an individual fuel tank.

Safety Equivalency Demonstration:

From the hypothesis established through the Applicant proposal, the fuel tank expansion space of not less than 2 % requirement will be applied to each group of fuel tanks capacity in order to substantiate the prevention of fuel tanks overpressure and fuel spillage on ground.