

FEA GOVERNANCE IN THE CONTEXT OF AIRFRAME STRUCTURAL ANALYSIS AND CERTIFICATION

Jack Castro

The Boeing Company

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ABSTRACT

Judicious application of Finite Element Analysis (FEA) that enables an organization to meet and exceed engineering and business goals requires much more than engineers having appropriate tool training. With today's modern attractive interfaces, engineers are compelled to build complex, but often ill-conceived models that generate massive amounts of questionable data.

In the context of airframe structural analysis, judicious application of FEA requires organizational governance that ensures:

1. Agreement and understanding of how FEA is utilized to support organizational analysis methods and certification requirements.
2. Clear analysis plans that detail the role of FEA in supporting the analysis.
3. Standard and consistent modeling practices and analysis approaches.
4. Appropriate model verification practices that ensure a model is setup as intended as well as a thorough validation plan to ensure that the key results from the model are correct within the level of accuracy required by the analysis plan.

The items listed above are outside the scope of typical FEA tool training, so these items must be addressed by an organization in order for FEA to most effectively support the airframe structural analysis and certification.