

AIRCRAFT COMPONENTS IMPACT ANALYSIS: STATE OF THE ART

Executive Summary

The primary objective of the Components Impact Analysis (CIA) task is to define a solution that will predict the impacts of any changes to the product under development. In order to define an innovative and efficient solution, a review of existing contributions on this subject has been carried out. This is the aim of the "State of the Art in Systems Engineering" sub-task. The major findings and results are provided in this deliverable.

In the first part of this document, an overview of the change propagation phenomenon is given to build a common and shared understanding among the tasks partners.

The second part of this document provides the reader with an overview of current CIA investigations and achievements. Consequently, the major outputs of research projects carried out both in industry and academic research laboratories plus the main standards recommendations and computer applications capabilities have been analysed. All these contributions are grouped in different chapters corresponding to the different kinds of CIA analysis:

- Qualitative impact analysis
- Quantitative impact analysis
- Impact analysis: other models and methods
- Impact analysis in engineering applications
- Influences of design process models on change propagation and impact analysis
- Influences of product models on impact analysis

Finally, a set of recommendations is presented and discussed.