

Preface

In recent years, a major aim of flight control systems research has been to achieve a high level of performance and safety by improving the design methods. Researchers and academia have concentrated their activities on the synthesis aspects of flight control systems, in particular by demonstrating the applicability and strengths of novel, robust, multivariable synthesis tools. Significantly less research effort has been spent on the global assessment of the achieved designs, which represents a key activity for the certification of today's aircraft, which are equipped with safety-critical, highly complex flight control systems.

Currently, the aeronautical industry is faced with the formidable task of clearance of the flight control laws. Before an aircraft can be tested in flight, it has to be proven to the authorities that the flight control system is safe and reliable, and has the desired performance under all possible operational conditions, and in the presence of failures.

This motivated the research presented in this book: an exploration of the benefits of new analysis techniques for the clearance of flight control laws. It is a first step towards a better and deeper understanding of the industrial flight clearance process, with the objective to provide recommendations on how analysis techniques should evolve in order to improve the efficiency and reliability of this process. The Group for Aeronautical Research and Technology in Europe (GARTEUR) provided an ideal framework to bring together research institutes, academia and industry and pursue such a relevant research objective.

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The Editors