

ASICBA: A WAY TO ADD VALUE TO AERONAUTICAL SAFETY

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ASICBA (www.asicba.org), is a two-year EU-funded research project under FP6, started on 15th January 2005 and the partners in the consortium are: Airclaims (Ascend), D'Appolonia (Project Leader), ECORYS, Gearar, LOT, Meridiana, NLR and Politecnico di Milano

Abstract

The main concept in ASICBA approach is to express safety effects in monetary terms and then to compare them with associated costs and benefits. The model developed consists of a scenario based risk-model to assess potential risk reduction, a cost model translating risk reduction in monetary terms and a cost-benefit trade off by a CBA computation. The Decision Support System tool is an electronic handbook, incorporating a data pool to assist in estimating costs, benefits and risk reduction, and provides the user with a report showing the CBA result together with all data and formulas used.

Introduction

Cost-benefit analysis of safety measures is a relatively new concept in the aviation community. Decisions on safety related matters, for instance, are often taken without knowing precisely how safety benefits relate to the costs they induce.

In order to analyze in a deeper way the relationship between these two different aspects, a specific project called ASICBA has been realised. In this project, a methodology has been developed to assess the effects of safety improvement measures offering the opportunity to make a balanced trade-off between safety and investment costs. The main concept in the approach is to express the safety effects in monetary terms and then to compare those with the associated costs of the safety measures.

The aim of this paper is to present a general overview of the methodology adopted by the ASICBA consortium and to offer to the reader some information about the results achieved.

The methodology in brief

The model developed in ASICBA has been set-up as an integrated model and consists of three main building blocks:

1. scenario-based risk model;
2. cost model;
3. cost-benefit trade-off.

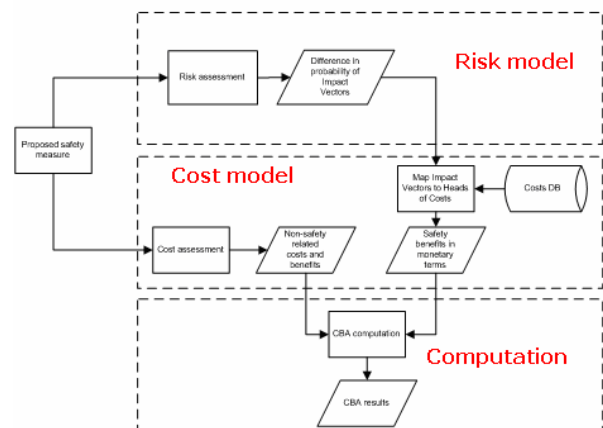


Figure 1: General outline of the approach

In the first phase, the user has to define the safety measures to be assessed with the model as starting point for both the risk and cost model.

The risk model has been created in order to assess the potential risk reduction of the safety measure; its output feeds into a cost module that contains a database of accident costs translating the risk reduction in monetary terms. Therefore a safety improvement is represented by a reduction of probability that the event could happen; the cost reduction instead can be considered the safety value of the introduction of the safety measure. Other impacts of the safety measures as investment costs, operational costs, certification costs, and other benefits, maintenance optimization and fuel

