



**“Gheorghe Asachi” Technical University of Iasi, Romania**



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## **EXTREME RISK ASSESSMENT METHODOLOGY (ERAM) IN AVIATION SYSTEMS**

**Catalin Cioaca<sup>1\*</sup>, Cristian-George Constantinescu<sup>2</sup>, Mircea Boscoianu<sup>1</sup>, Ramona Lile<sup>3</sup>**

<sup>1</sup>*Transilvania University, Faculty of Technological Engineering and Industrial Management,  
Department of Engineering and Industrial Management, 29 Eroilor, 500036 Brasov, Romania*

<sup>2</sup>*“Henri Coanda” Air Force Academy, Faculty of Aeronautical Management,  
Department of Air Defence, 160 M. Viteazul, 500372 Brasov, Romania*

<sup>3</sup>*“Aurel Vlaicu” University, Faculty of Economics Science,  
Department of Economics Disciplines, 14 Fabius, 310270 Arad, Romania*

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### **Abstract**

The research is focused on the relationship between aviation systems and extreme terrorist events, the impacts of such events, and the solutions to manage the associated risks on medium and long term. The development of predictive models for extreme-asymmetric events in aviation (EAEA) still represents an emerging direction of interdisciplinary research because not all mechanisms and interactions are understood. The testing of models is difficult due to lack of data and interpretation frameworks and includes a major human component specific to social sciences. The proposed risk assessment model is based on a simulation algorithm, and relies on a spreadsheet program that models the risk in conjunction with input data: threat, vulnerability and consequences. The main advantage of the model is that it provides a fast and intuitive image of the phenomenon, using unsophisticated databases. In addition, the case study developed by the authors of the article and focused on modeling and simulating terrorist risk in a Romanian international airport answers decision makers' current requirement to operate a flexible, adaptable and scalable platform efficiently and rapidly.

*Key words:* aviation, extreme event, modeling, risk assessment, terrorism

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\* Author to whom all correspondence should be addressed: e-mail: [catalin.cioaca@afahc.ro](mailto:catalin.cioaca@afahc.ro); Phone: +40723172164