



Selected considerations of implementation of the GNSS

Janusz Cwiklak (1), Andrzej Fellner (2), Radoslaw Fellner (2), Henryk Jafernik (2), and Janusz Sledzinski (3)

(1) Air Navigation Department, The Polish Air Force Academy, Deblin, Poland, (2) Faculty of Transport, Silesian University of Technology, Katowice, Poland, (3) Institute of Technical Sciences, School of Higher Education in National Economy, Kutno, Poland

The article describes analysis of the safety and risk for the implementation of precise approach procedures (Localizer Performance and Vertical Guidance - LPV) with GNSS sensor at airports in Warsaw and Katowice. There were used some techniques of the identification of threats (inducing controlled flight into terrain, landing accident, mid-air collision) and evaluations methods based on Fault Tree Analysis, probability of the risk, safety risk evaluation matrix and Functional Hazard Assessment. Also safety goals were determined. Research led to determine probabilities of appearing of threats, as well as allow compare them with regard to the ILS. As a result of conducting the Preliminary System Safety Assessment (PSSA), there were defined requirements essential to reach the required level of the safety. It is worth to underline, that quantitative requirements were defined using FTA.