DECISION FUSION USING FUZZY LOGIC TYPE 1 FOR TWO AVIATION SCENARIOS

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Abstract

In this paper we discuss some aspects of decision fusion using fuzzy logic of type 1 for two aviation scenarios. We study the fuzzy inference system/engine and briefly discuss the MAT-LAB-GUI based tool developed by the authors to evaluate any existing or new fuzzy implication functions. Two examples: i) formation flight, and ii) flying along an air lane are numerically evaluated and the performance of decision fusion systems incorporating fuzzy logic is illustrated. The results indicate that some existing as well as new implication functions, devised by the authors, work very well for the examples considered. This opens up new possibilities of applications of fuzzy logic based decision fusion to varieties of aerospace/aviation problems in data fusion, decision making, and decision fusion.