Validation Management in an ATM Research Project

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This paper describes the validation process used in the Mediterranean Free Flight (MFF) project. MFF was a large, six-year ATM research project, sponsored by the European Commission, that studied Operational Concepts and procedures for more efficient use of airspace through the delegation of tasks related to separation assurance. The validation approaches proposed in recent validation research initiatives, and in particular in the project Master ATM European Validation Plan (MAEVA), have been modified, integrated and applied in MFF. The paper illustrates how the project adopted these approaches in a practical project environment, in particular how Validation Objectives to assess the suitability, effectiveness and feasibility of the MFF Operational Concepts were identified and investigated, and their relation to overall ATM objectives. Then, it describes in detail the Validation Process as applied, giving examples of the practical methods used in the different phases, and describing the use of the Validation Data Repository to support the collection, comparison and integration of Validation results. The paper provides a complete example describing the Safety Objective in detail, together with the different Validation Exercises that were run to evaluate the achievement of this objective. The paper concludes by reporting the main feedback from the application of the Validation Process, and the use of the Validation Data Repository, and discusses the related advantages and disadvantages.

Summary of the Results of the Mediterranean Free Flight (MFF) Programme

Andy Barff

(No Abstract)

Critical Incident Stress Management in Air Traffic Control and its Benefits

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In 2004, we reported about a pilot study [Vogt et al., 2004] investigating the implementation of the Critical Incident Stress Management (CISM) Program with the German Air Traffic Control Services (Deutsche Flugsicherung, DFS) under cost-benefit-considerations. The current paper describes how CISM is used in ATC and what the specific requirements in this application area are. The main DFS CISM evaluation study is then reported based upon 309 questionnaires from air traffic controllers (ATCOs), 39 interviews with operations room supervisors, and 11 interviews with top managers. The collected data confirm the results of the pilot study in that the program’s estimated fiscal benefits had exceeded the program costs several times. Moreover, the study gave information about the causal chains of critical incidents (CI) impairing certain important ATCO abilities, on-the-job behaviors, and work outputs, which in turn reduce the capacity of the individual ATCO and the whole system. The immediate application of CISM in combination with time off for the rest of the work day resulted in the lowest after-effects of the CI at work.
Recovery from Equipment Failures in Air Traffic Control (ATC): The Findings from an International Survey of Controllers

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This paper presents the findings from an international survey conducted to overcome the absence of knowledge related to equipment failures in Air Traffic Control (ATC) and subsequent controller recovery. The literature review highlights the highly regulated ATC environment; while the survey findings identify the frequency of equipment failures, their influences on controllers’ recovery, and several important issues regarding the status and quality of recovery procedures and training. The survey concluded that air traffic controllers comprehensively have experienced equipment failures and that past experience has the biggest impact on their recovery performance. Recovery procedures do exist at most facilities though little organised exchange of information among facilities exists. Although this study provides initial insights from the perspective of air traffic controllers on the topic of recovery from ATC equipment failures, its findings may be used to overcome the identified shortcomings and thus to enhance the overall recovery context in which equipment failure unfolds to air traffic controllers. More detailed studies should follow to further investigate the controller recovery in an operational environment.