Prospective Job Analysis for the Next Pilot Generation

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Abstract:

To accomodate the expected growth of air traffic over the next two decades new operational concepts are currently under development, which will affect to some extent the job tasks and responsibilities of pilots and air traffic controllers. How will the operators perform in their potential new roles? Can we presume that they will easily be re-trainable? Or will the job profile change to such an extent that it has to be considered already during the selection of the most suitable candidates? Especially for ab-initio pilot and controller candidates selection decisions imply predictions of human performance for a long-term future. Therefore, a prospective analysis of job requirements is necessary to make sure that the selection battery is aligned with future roles and tasks. DLR has developed a simulation platform called AviaSim, which allows for low-fidelity human-in-the-loop simulations of potential future job tasks for pilots and controllers. Future scenarios are based on reviews of NextGen and SESAR concept papers and as well on "future workshops" with present job holders. In AviaSim we can examine the behavior of air traffic controllers working together in one scenario with up to eight pilots and additional experimental traffic. With eye-gaze measurement, questionnaires and cognitive task interviews performance was analyzed in one en-route and an arrival scenario. According to preliminarily findings future operators will need a higher degree of competence for operational monitoring, distributed teamwork, and time-based operations. The simulation platform and the experimental setups are discussed in the paper.