

Monitoring behaviour of tower controllers

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I. ABSTRACT

This paper provides insights on the tower controllers' information acquisition while working in a high-fidelity tower simulator. Within the DLR (German Aerospace Center) project RAiCE (Remote airport traffic control center) a high-fidelity human-in-the-loop study was conducted to validate a concept for remote control of regional airports. The eye tracking data of 12 controllers were recorded to gather objective indicators of their information acquisition, during controller operations. In contrast to common studies in the domain of air traffic control, reporting dwell times and number of fixations aggregated time, a more detailed data analysis approach for information acquisition is suggested. Moving average time windows (maw) are used to analyse the monitoring behaviour of a controller team in respect to landing and starting aircraft. The data confirm that both controllers' visual attention on the runway (RWY) is related to the events "touchdown" and "enter RWY". The data reveal that it is the coordinator, spending more time on the RWY than the tower controller. The peak values of the maw are used to decide if an event was monitored or not. The monitoring behaviour of the controller team is discussed in respect to safety issues. The described methodological approach seems promising for a better understanding of monitoring behaviour of tower controllers.