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A FRAMEWORK FOR THE ASSESSMENT OF CONTROLLER COORDINATION IN THE AIR TRAFFIC CONTROL TOWER ENVIRONMENT

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The air traffic control tower (ATCT) environment requires coordination between various controller positions for safe and efficient operations. With the development of new collaborative decision support tools in the tower (e.g. SMS, NASA 2004), efficient human interface design will require the consideration of the coordination routines that controller use. Whereas inter-position coordination is generally prescribed by the FAA (FAAO 7110.65) as well as by specific ATCT standard operating procedures, little is known about face-to-face coordination that is not captured by other recording media such as flight strip marking or radio communication.

To meet the demand for more information about air traffic control tower coordination, a

framework for ATCT coordination was developed in cooperation with operational experts. Using a card sorting technique, ATCT controllers ranked various ATCT coordination events that had been identified by Alley et al. (1987), commented on their experience with each coordination event, and added additional coordination events. From these comments, relevant coordination dimensions were extracted that included coordination frequency, mental workload, coordination time criticality, as well as environmental factors that influenced the coordination. Controllers then quantified their experience using these dimensions to confirm and modify the framework. The proposed coordination framework is intended for the assessment and quantification of coordination in specific ATCT environments.

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