

Simulation of new Display Concepts for Air/Space Traffic Control Systems

- Area of interest: Displays for Future Air/Space Traffic Control Systems-

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A long track record on research on display concepts is available in the domain to assist the Air Traffic Controller in his situation awareness. Most of the concepts were designed to reduce Air Traffic Management (ATM) complexity with respect to traffic density, identification and resolution of conflict situations as well as to enhance the efficiency of the air transport system. The existing concepts mostly do not take into consideration air traffic and space traffic above flight level 500. Further on, higher speed and higher rates of descent of space vehicles are not fully considered. Also the operation of space vehicles at spaceports - which could be also passenger airports - has to be considered. Landing and ground operations can make use of modern remote tower installations (RTO), which will especially facilitate landing on remote sites or sites located away from operation centers and the related customers. For the implementation of future display concepts, a validation process is required. We discuss the assets of the DLR Air Transport Validation Center for life virtual constructive simulations and the methodology of the European Operation Concept Validation Methodology (EOCVM) of Eurocontrol. Results include the validation of 3D-Displays for enhanced situation awareness for new types of airspace users and a successful validation for RTO systems.