PROBLEMS FACED DURING INTEGRATED TESTING OF FLUSH AIR DATA SYSTEM (FADS) AND ITS SOLUTIONS

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Abstract

FADS provides air data parameters of an aerospace vehicle such as angle of attack, angle of sideslip, Mach number, etc for use by the flight control and guidance system. It essentially makes use of surface pressure measurements, from mostly the nose cap of the vehicle for deriving these air data parameters. Flush Air Data System (FADS) was indigenously developed and flown successfully in the RLV-TD HEX-01 mission. Before carrying out flight testing of FADS, testing with a full scale model was carried out initially at national wind tunnel facility, Indian Institute of Technology, Kanpur. This paper highlights some of the problems encountered during the integration and testing of FADS at IIT, Kanpur. The corrective steps taken for overcoming these problems encountered is discussed. With the corrections implemented the full scale wind tunnel test was repeated and it was observed that the design objectives of FADS are met by the system.

Keywords: FADS, Subsonic, Angle of Attack, Wind Tunnel, MEMS