Effective test and calibration of a trailing cone system on the atmospheric research aircraft HALO

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We present the implementation and use of a trailing cone system on a special mission Gulfstream G550 aircraft. The system was used to calibrate an innovative nose boom mounted flow sensor package designed for atmospheric research. The presentation will address the implementation and validation of the trailing cone system as well as the calibration of the nose boom. By using a precise position and attitude reference system and new measurement and data treatment techniques it was possible to significantly improve the accuracy of the trailing cone validation and air data system calibration while simultaneously decreasing the necessary flight test time. Only 4 Flights were required to implement the system and perform a complete and precise calibration of the air data system.