

## Helmet Mounted Display Integration Flight Testing On AleniaAermacchi M-346



by

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This paper deals with the flight test activities performed to integrate an Helmet Mounted Display (HMD) on the AleniaAermacchi M-346 Advanced Trainer aircraft.

An extensive HMD rig and aircraft on-ground integration testing has been carried out before the test flights, ensuring a full integration of the equipment with the aircraft avionics suite since the very first flights.

The HMD presents attitude, navigation, tactical and mission information directly on the pilot helmet visor, in his field-of-view, regardless of the direction he's looking (boresight). The M-346 tested HMD capabilities and symbology fully replicate the characteristics of the systems available on the front line operational fighters (Eurofighter, F-35, Rafale, F-16, JSF).

The HMD is fully integrated with the Embedded Tactical Training Simulation (ETTS) system, permitting to the student pilot on the M-346 to learn how to use and exploit all the HMD capabilities in a real or simulated scenario within a cost efficient environment.

The performed flight tests resulted in full satisfactory results in terms of ergonomics and performance (HMD were tested both in the forward and rear seat), also under demanding high dynamic manoeuvres, ensuring an high accuracy in all conditions.