baseline system. The use of a speech recognition interface is a feasible option and allowance has been made for the installation of such equipment.

The MMI research covers a range of aspects including basic data measurement and advanced display technology. Of particular relevance is the use of flat panel displays e.g LCDs and the intention is to evaluate such technology as it becomes available.

5.6 Systems integration

The aircraft is already fitted with a standard radar homing and warning receiver (RHWR) system and has provision for the installation of a Joint Tactical Information Distribution System (JTIDS). The intention is to integrate these with the radar and other onboard sensors as part of a collaborative programme with Industry to confirm the expected operational benefits. The resulting combination should significantly assist in the rapid generation of an accurate tactical air picture for the pilot, including prioritised threats.

6 CONCLUSIONS

This paper has briefly described the proposed rôle, major features and flight trials programme of DERA's Tornado ZD902, designated TIARA (Tornado Integrated Avionics Research Aircraft). The aircraft is a multi-sensor, multi-rôle trials facility intended to demonstrate a "total systems integration" concept. It will directly support a number of Applied Research Programmes, Technology Demonstrators and Projects.

Following a major conversion programme, ZD902 is now undertaking experimental trials flying. The procurement and integration of the experimental equipment necessary to attain the TIARA concept is virtually complete, apart from the AI radar which will be delivered in 1997.

Among TIARA's prime features are a modern avionics architecture, a multi-sensor capability and the creation of a modern single-seat fighter environment in the front cockpit.

The first major flight trials are concerned with infra-red sensors and helmet mounted displays. Following installation of the Blue Vixen radar, the prime objective will be to evaluate and demonstrate the application of multi-sensor data fusion in a multiple threat environment.

TIARA (Fig. 8) will provide a unique fast-jet trials facility for the Defence Evaluation and Research Agency during the next decade. It will also have sufficient capacity to support a number of collaborative programmes with Industry.

Figure 8 TIARA on trials