

> Engineering

Spearhead of the French air and naval forces, the Rafale has benefited from joint developments for the operational training of pilots. The first Rafale Simulation Centre (Centre de Simulation Rafale – CSR) is being installed on the Saint-Dizier airbase.

RAFALE SIMULATION BECOMES REALITY



EXCEPTIONAL RECONFIGURATION CAPABILITY AND GREAT OPERATIONAL FLEXIBILITY

- 1 Pseudo-spherical, high resolution/large field display formed by eight back-screen projected facets. Cabin including real, reconfigurable forward/rear positioned items of equipment to simulate a two-seater aircraft by coupling two single-seater cabins comprising a Sogitec G-seat inclined at 30°.
- 2 Simulation computer retrieving the aircraft and its on-board equipment items (countermeasures, radar, optronics, etc) and coupled with the real aircraft computer.
- 3 Three instructor stations, allowing the simultaneous management of 3 three different sessions or one complex multi-cabin session.
- 4 Four tactical servers, that can be used for training and debriefing, enabling to manage virtual air, land and sea participants in a dense geographical, meteorological and tactical environment.
- 5 Two briefing/debriefing stations, which can be used in parallel with the sessions in progress and enabling to replay missile firings.
- 6 Coupling capability with other centres (High Level Architecture/HLA technology).

Whereas an acknowledged expert in simulation technology, Sogitec, prime contractor appointed for producing infrastructures, is concurrently developing less spectacular know-how but also appreciated by users. It is the case for the Saint-Dizier airbase (Haute-Marne), which will receive the first of the two planned CSRs (see Interactions No. 21, June 2003); the second one, designed for Naval Air use, should be delivered to the Landvisiau base in 2007. MOD Procurement being the prime contractor and Dassault-Aviation the industrial subcontractor, Sogitec is in charge of building and installing the facility for the Rafale pilots to have a collective training in a complex tactical context integrating a complete air system. This facility perfectly meets the operational requirement improved during the design phases since 2003, distributed between specialized work groups with the industrials, state contractors and users (air and naval). They will enter the qualification procedures starting in 2005 (see box).

Ambitious productivity

Each of the two CSRs, over an area of 1,500 sqm approximately will contain

about 70 people. The technical support staff and that for maintaining the simulators in operational condition will be present at the same time as the instructors and the operators. The architecture of the networked centres, wished by Sogitec, is a decisive key factor in the ambitious productivity desired for the two CSRs. The capability of parallel operation of the briefing/debriefing stations, the instructor stations and the student stations, will allow continuous training of 12 students! Moreover, in addition to a large number of network-operating computers, including the real aircraft computer (see box), the CSR will implement the first image generation system of the new Apogée 6 machine developed by Sogitec. Provision has been made so that the two CSRs, distant by more than 500 kilometres, can operate in coupled mode, thus forming an exceptional virtual training area, which could be subsequently extended to other centres in France and abroad.

Finally, the good working relationship between the industrials, the prime contractor and the local infrastructure department of the Base, enable the project to comply with the planned deadlines. ■

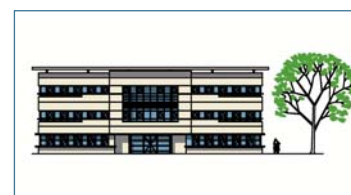
A FOUR-STAGE QUALIFICATION PROCEDURE

End of 2005: qualification of the simulation of the aircraft model together with its equipment.

Beginning of 2006: qualification of the two simulators in the environment centre at Bruz (a Sogitec establishment).

End of 2006: on-site industrial qualification of the "complete" centre.

Beginning of 2007: verification of the Operational Use Aptitude by the users through the execution of typical missions.



The futur Rafale Simulation Center at Saint-Dizier Air Base.

