



COUGAR / SUPER PUMA AIRCREW TRAINING SYSTEM

NEW TRAINING OPPORTUNITIES

The Swiss Air Force has chosen COUGAR and SUPER PUMA as their transport helicopters. They required a training systems that allowed their pilots to take conversion training as well as refresher training, without the need of instructors or access to full flight simulators.

To solve this training needs, Telespazio Germany GmbH developed the COUGAR/ SUPER PUMA Aircrew Training System, also called CATS, which covers both helicopter variants and combines courseware and simulator in a consistent user interface. The work was carried out under a contract awarded by armasuisse, the Swiss Federal Office for Defence Procurement. CATS has been successfully supporting flight crew training since March 2005.

MAXIMISED TRAINING RESULTS

CATS is an integrated training system consisting of 24 hours of courseware and a simulator within a single application. It therefore combines learning with practising to maximise the training results. It is designed for laptop use but is also compatible with desktop PCs with up to three screens, allowing for parallel use of courseware and simulator.



Self-paced training with unrestricted access to the simulator and courseware.



Quick access to information through clearly structured courseware lessons with expandable lexicon.



Intuitive user interface for easy retrieval of specific courseware pages.



Context-sensitive help function gives direct access to the respective courseware page while training in the simulator.



Great flexibility to access either initial training material, conversion training or refresher training.



Mixture of learning and practising thanks to pre-configured situations in the simulator along all or pre-selected courseware lessons.



A typical courseware page explaining the main components of the rotor head assembly.



The simulator is about to capture a route controlled by the Automatic Flight Control System and the Flight Management System.



CATS running on a touchscreen setup including a separate instructor station.

COURSEWARE

CATS contains courseware lessons about all essential helicopter systems. They teach system overview, basic technical knowledge and operation in normal and abnormal conditions. Each lesson concludes with a self-test.

The courseware pages are “explored” in an interactive manner rather than mundanely presenting one fact after another. Media such as 3D animation sequences and 3D views of components provide an engaging way of presenting highly technical information.

The courseware also allows the student to switch to the pre-configured simulator, in order to practise what was just learnt.

SIMULATOR

Training in the simulator, the student can practise operational procedures in “free-play” mode. This allows them to learn about the helicopter systems and how they interact with each other. All essential systems have been modelled, including the flight management system, electronic flight instrument system, digital map system, automatic flight control system and self-protection system.

A number of faults can be injected into each system. This facilitates procedural training in normal and abnormal conditions.

The simulated helicopter “flies” within a realistic terrain model, based on original elevation data that contains all airfields and radio navigation aids. The student can place different types of threats into a scenario to support realistic training of the self-protection system’s functionality. Thus, the student is able to fly a complete mission in the simulator from “pre-flight” to “engine shutdown”.





Should a student need assistance during a simulated operation, the context-sensitive help function can be used. It gives direct access to relevant courseware pages for further explanations.

The system is designed to work with AICC or SCORM-based learning management systems. CATS can easily be modified or extended. The modular design enables changes or additions to whole systems or single functionalities, such as fault states, with only little effort.

CATS can be connected to additional hardware such as touchscreens to create a physical “cockpit” mock-up. This can be done without any modifications to the software.

TRAINING BENEFITS

With CATS, the Swiss Air Force is benefiting from a highly effective training system that provides performance improvement and a substantial return on investment. The key benefits of the system include:

-  Training at anytime, anywhere.
-  Independence from instructor availability.
-  An engaging, interactive learning environment.
-  Reduction of training time in a full flight simulator or the actual helicopter.

The Swiss Federal Office for Defence Procurement, armasuisse, valued Telespazio Germany’s directness, high level of transparency and flexibility during the project. The concept, design and functionality for the COUGAR Aircrew Training System “TH98 CBT Cockpit” have become the benchmark standard by which all future procurements of equivalent computer-based training systems are measured.