

Environmentally qualified COTS recorder improves Nimrod's operational capability at reduced cost

The Nimrod aircraft has been a mainstay of the RAF since 1968. In order to maintain its position as the world's leading reconnaissance aircraft, the Nimrod team are upgrading their digital voice recorder from AudioSoft.

Background

Following a successful deployment in 1998, the Nimrod IPT has experienced eight years of successful operation of their AudioSoft recording and analysis equipment. The system features two recorders, one replay server, a ground analysis system and a 'fly-away pack'. The Nimrod Integrated Projects Team has now been tasked with upgrading the system.

Environmental qualification is a key issue for the Nimrod team and the Ministry of Defence. In flight, the equipment on the Nimrod aircraft may be subjected to vibration, extreme temperatures and high G-forces, which could damage hardware not designed for this environment.

The environmental testing performed on the digital recorder simulates a 40 year life on board the Nimrod aircraft through a wide range of rigorous tests.

In 1998 the Nimrod IPT's task was to procure ruggedised recording equipment for the Nimrod aircraft at a Commercial-Off-The-Shelf (COTS) price. The IPT sought a company with a proven service

record of delivering cost effective robust and reliable recording solutions to the defence market.

As well as requiring an environmentally qualified recorder, the Nimrod IPT also needed a trusted relationship with a recording supplier that would be flexible in their approach to allow full integration with other operational systems as well as a rapid deployment solution.

The Nimrod (ES) IPT required "a fully operational Fly Away Pack... within 10 weeks of the original request", Alan Sadler

Squadron Leader Alan Sadler was clear about the IPT's need, "We had an urgent requirement for a deployable recording system"

Cost Effective Integration

In 2004, with obsolescence issues threatening the system capability, AudioSoft was chosen as the preferred supplier for the Mid Life Upgrade project, having satisfied all the technical requirements at a competitive price. The remit was to use the same tried and trusted architecture that had been in service with the squadron for the last seven years whilst making the recording and analysis solution supportable until 2013.

Further reassurance was provided through AudioSoft's ISO9001:2000 and TickIT accreditation and their proven track record of success in executing complex projects Defence projects. This is part of AudioSoft's heritage of supplying to many of the world's leading defence forces.



Case Study Solution

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► Improved Compliance

The COTS 19" rack mount PC was specifically modified to withstand severe vibration, temperature and shock. Specific features include improved rigidity, improved shock mounting of hard disks, and redesigned restraining bars as well as many other minor but vitally important modifications. The solution was also re-engineered during vibration testing to meet specific resonant vibration issues.

The ten weeks of environmental tests verified the recorders resistance to vibration, humidity, temperature extremes, dop and topple tests and EMC tests and culminated in the award of the flight airworthiness certificate, F100A..

► Improved Reliability

In operation, AudioSoft's heartbeat monitoring software continually monitors the health of the recorders and provides notification of errors and failures to the operators workstations. A dedicated alarm card operates four tri-colour LED light indicators, providing operators with clear visual indication of the recorder's status without the need for built in LCD panels, saving cost and improving reliability.

► Improved Capability

A mission-critical feature of the recorder is the kill switch. In an emergency in which the possession of the recorder is threatened, both the data and the operating system are systematically erased in a process that cannot be halted, thereby ensuring the security of the data.

"This equipment has continued to provide an extremely effective operational capability", Sqdn Ldr Alan Sadler

To maximise the opportunity for subsequent automated analysis the recorded process is continually optimised

using AudioSoft's patented data interrogation and optimisation technology.

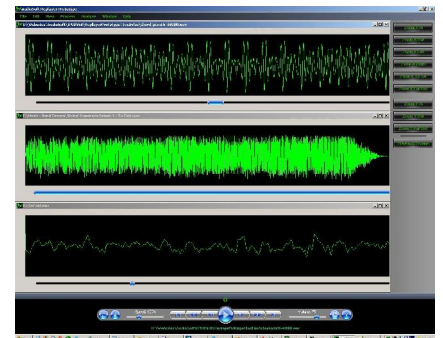
► Reduced Costs

Environmentally qualified COTS components meant that the solution was approximately one third the price of conventional equipment. Low cost of ownership is combined with ease of maintenance and a secure upgrade path.

► Improved Integration

AudioSoft also provides the analysis solution at both the Nimrod's main and alternative base of operation. In the future the MOD could benefit from new AudioSoft analysis software such as speaker or language identification and key word spotting. This, along with Automatic Target Recognition, is all part of AudioSoft's end-to-end solutions approach.

AudioSoft now also offer a range of graphical aids and visual display options that allow users to quickly understand the subtle relationships that exist between the recorded data.



Recommendation

"We have been a user of AudioSoft equipment for a number of years", added Sqdn Leader Alan Sadler.

"As a result of the excellent service provided... we would be pleased to recommend AudioSoft as a company and AudioPC as a product for digital data recording solutions within the Defence Sector".