



FTD Helicopter Flight Training Device

FS B Helicopter Flight Simulator Level 'B'



cueSim
cueSim combines COTS technology with innovative software and hardware design to provide truly cost effective, high fidelity simulation products and services.

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cueSim is a member of the QinetiQ Group of Companies.

The cueSim Helicopter Flight Training Device (FTD) range has been specifically designed to meet JAR-STD 2H Level 3, MCC and 1H level B or FSTD H if applicable. The FTD is a type representative training device suitable for type conversion, checking and re-validation.

cueSim's Helicopter FTD combines extensive application of Commercial-Off-The-Shelf (COTS) technology with Full Flight Simulator quality flight dynamics and systems modelling at a fraction of the cost of a Full Flight level D Simulator.

The cueSim helicopter FTD provides high fidelity helicopter flight training at an affordable price with minimum maintenance costs and maximum reliability.

Clients include:

Bond Air Services (FTD 3 for EC135)



Helicopteros del Sureste (FTD 3 for Bell 412)



CHC Helicopter Corporation (FTD 3/Dual FS B option for Super Puma)



Allgmainer Deutscher Automobil-Club (2 x FS B for EC135 & EC145)





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Introduction

Helicopter flight training schools are increasingly recognising the value of cost effective, high fidelity simulators that use the latest generation technology to help raise safety standards.

Using the latest generation of digital computers, high fidelity simulator based training is no longer exclusively in the domain of the Full Flight level D Simulator and its associated bespoke hardware. The cueSim helicopter FTD provides high fidelity, type related helicopter flight training at an affordable price.

The cueSim helicopter flight training device is suitable for systems management, recurrent training, instrument rating and revalidation and renewal, recency, CRM training, loft, multi-crew cooperative training, and type training and checking. The training device can be dual qualified to FS B to ensure that maximum credits are awarded for the device.



High fidelity type representative cockpit and enclosures



Representative class helicopters

The cueSim Helicopter FTD

The cueSim Helicopter FTD is a type-representative device designed to provide the broadest range of training capability. High gain tasks requiring close control are supported by the option of a high bandwidth level B compliant 6 DOF motion base whilst an electric active control loading system, electric seat shaker, high fidelity aircraft model and fully representative modelling of all relevant aircraft systems are standard.

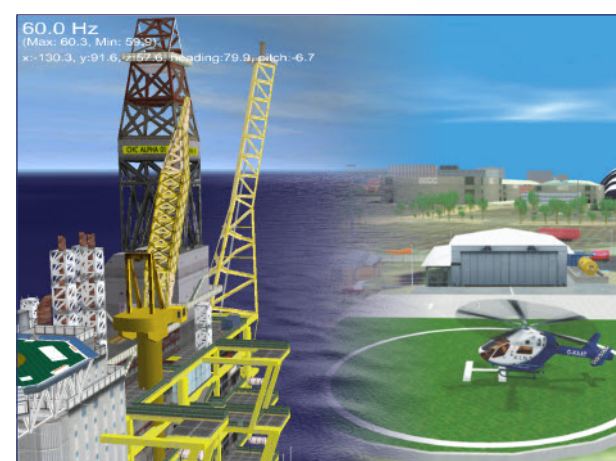
Benefits

The FTD maximizes the use of Commercial off the Shelf (COTS) technology to achieve the most cost effective solution with minimal operating support and maintenance costs. Personal Computers (PCs) are used throughout the system providing all the computing elements.

cueSim's modular approach to simulation construction and software implementation ensures that the system remains highly reconfigurable and, further, provides commonality of hardware and software between the various FTD systems.

The combination of COTS technology, modular design, high performance processors, and spare capacity on all systems and interfaces ensures that any modifications to the actual helicopter type can be incorporated in the FTD in a timely and straightforward manner.

The flight training device visual and computing environment is highly modular and allows for multiple cockpits to be used with a single display and computing system – where training schedules permit.



High fidelity visual database(s) included as standard.

Features

The flight model provides behaviour representative of the helicopter within its full flight envelope; effects modelled include: aerodynamics, landing gear, auto-stabilisation system, auto-pilot, AFCS malfunctions, engine performance and dynamics, engine malfunctions, wind-steady, sheer and gust, effect of fuel load and ground effects.

Immersion is guaranteed with the use of a multiple channel, projected, direct view visual display provided by high-resolution digital projectors and powered by powerful PC based image generation. The image is full screen sub-pixel anti-aliased to reduce distracting aliasing effects and is generated at 60 Hz for smooth visualization. The visual display has full support for collisions, ground effects and weather as well as time of day and lighting effects. These are all controllable from the Instructor Operating Station (IOS).

Night Vision Goggle support can be provided as an option for the FTD, with support for the use of actual NVGs to look at realistic stimulated scenes with device specific effects such as halos and blooming.

Cockpit superstructure is fitted to enable correct representations of visual cut off angles and to create a sense of enclosure for the pilot.

The instrument and sensor displays use standard LCD displays with bezel overlays to replicate the cockpit layout. The instrument displays are generated from configuration files that generate industry

standard open GL, ensuring that modification, maintenance and upgrades are easily catered for.

The control loading system is based on cueSim's all electric Loadcue system; providing representative control forces and travel and responds to feedback from the flight model aerodynamics.

An onboard IOS is supplied as standard, with an off-board option. The use of the Microsoft windows family of operating systems and an intuitive front end for the instructor ensures a familiar environment for the IOS that is easily learned. The graphical user interface allows the instructor easy access to the complete range of features available to him at the IOS including scripted and on the fly fault insertions.

High performance PCs and modular hardware design ensures every FTD is supplied with spare capacity for future upgrades.

Options

- 6-DoF electric motion level B compliant
- Extended fields of view
- Additional sensor displays
- Off board IOS with repeater screens
- 3D God's eye view 'Stealth view' display
- Additional cockpits of alternative aircraft types
- Dual FSB qualification
- NVG support



cueSim FTD with optional motion platform