

## AgustaWestland selects nCode GlyphWorks for Super Lynx 300

The use of military helicopters in active war-zones often requires the rapid deployment of new capabilities and configurations. But this cannot be achieved at the expense of safety. Each new development must be appropriately certified to ensure reliability in the tough vibrating environment of a rotorcraft and this certification process is generally time-consuming and costly.

AgustaWestland, the helicopter division of Finmeccanica, is successfully using nCode GlyphWorks® analysis software to assess these new designs through more efficient and representative testing. The nCode GlyphWorks software from HBM uses a 'test tailoring' approach that ensures their helicopters meet the stringent durability targets demanded by themselves but also the aviation authorities.

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-Trevor Walton, Principle Dynamicist, AgustaWestland

AgustaWestland recognized the need for a more efficient testing methodology. By moving to GlyphWorks software, they can now readily accelerate deployment time and get equipment to the front line faster without taking unnecessary safety risks. In particular, the Accelerated Testing module of GlyphWorks enables them to compare certification test specifications with real flight data and have found that it offers much more control over the necessary safety margin.

The objective for selecting GlyphWorks was to utilize read-across evidence, de-lifing/relifing analysis and test tailoring. The comparative (read-across) evidence determines whether equipment certified for helicopter A can be used on helicopter B. Previously, this assessment would have relied on engineering judgment or a time-consuming re-test. nCode's test solutions have reduced the cost of repetitive or needless testing and the risk associated with more qualitative judgments. The new approach uses Accelerated Testing to compare severity of tests, with a pass, fail or de-lifing option now available.

For example, the test tailoring on the Super Lynx 300 enables analysis of the shock response and fatigue damage



spectrum in a far more efficient way with the test duration now at 48 hours as opposed to the original 140 hours.

Trevor Walton, AgustaWestland's Principle Dynamicist said: "Before we had Accelerated Testing we'd spend £100k's a year on needless retesting equipment. We can now directly compare the severity of one test spec with another. I thought there would be reservations about test tailoring but after 3 months all my internal customers are adopting it. The tests are faster, cheaper and the safety margin is increased".

Dr. Andrew Halfpenny, nCode's Chief Technologist said "Accelerated Testing is the most successful application we have ever launched. Virtually every aircraft or land vehicle vibrates and all components are designed to withstand these vibration levels over their entire service life without failure. The Accelerated Testing application allows us to quantify the vibration environment on an aircraft and then derive tailored vibration tests to qualify that component. The ability to compare the damage content of different tests also enables us to use test evidence obtained on other aircraft platforms to qualify components on a new platform. This read-across evidence can be used in place of additional testing in many cases. Helicopters offer a particular challenge with regards to vibration and we have applied considerable effort in developing specific capabilities to model the damage of these aircraft. I have thoroughly enjoyed working with AgustaWestland and seeing these techniques applied to real aircraft and making such a significant benefit to their flight certification program."

## About HBM nCode products

nCode products are provided by HBM, a world-wide technology and market leader, offering products and services across the entire measurement spectrum, from virtual to physical. For over 25 years, nCode has been the leading brand for durability and data analysis solutions. Its technologies aid customers understand product performance, accelerate product development and improve design. The company's Product Lifecycle Performance portfolio comprises tools which enable data acquisition in the harshest environments, analysis of the most complex test data sets, and optimization of product durability. The power and ease of use of HBM technologies is a direct result of its world-class development process, expertise and in-depth experience of a broad range of industries. nCode product development is ISO9001 certified. Product support is available through nCode offices in Europe, North America and Asia. For more information, please visit [www.hbm.com/ncode](http://www.hbm.com/ncode).

## About AgustaWestland

AgustaWestland, the Anglo-Italian helicopter company owned by Italy's Finmeccanica, is a total capability provider in the vertical lift market.

Through its rotorcraft systems design, development, production and integration capabilities, its experience in the training business and its customer focused Integrated Operational Support solutions, the Company delivers unrivalled mission capability to military and commercial operators around the world.

This expertise, backed by technological excellence and innovation, makes the Company a leader in a number of the world's most important helicopter markets offering the widest range of advanced rotorcraft available for both commercial and military applications.

AgustaWestland operates globally in the vertical lift market through a number of joint ventures and collaborative programmes with major European and American helicopter primes where the company has leading or primary roles. There are also partnerships with a number of other leading aerospace and defence companies to deliver mutually beneficial programmes. This network of alliances strengthens the Company's product range, increases its global reach, and enhances business opportunities.

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