The GENOA/Progressive Failure Analysis Software System can be used to simulate and predict aging and failure in all sorts of structural materials, including high-tech alloys and ceramics used in airplanes, cars, engines and bridges. Artwork courtesy of Glenn Research Center.

(AGATE) for integrated flight tests with all-digital cockpit technology components. ✲

For more information, contact Tom Clancy at Aurora Flight Sciences, ✆ 703/369-3633, ✉ *tom_clancy@hiflight.com*. Please mention you read about it in *Innovation*.

Software Evaluates Structural Integrity

GENOA/PROGRESSIVE FAILURE ANALYSIS Software System, a failure-analysis software with unique predictive capabilities, tells designers not only how, where and why a part failed, but can assist the engineer in redesigning the part to make it defect free.

The software, developed by Alpha Star Corporation of Long Beach, California, via a 1995 Phase II SBIR award, in collaboration with Glenn Research Center of Cleveland, Ohio and Clarkson University of Potsdam, New York, is used for damage tolerance evaluation of elements made from all types of composites and metals, and impact-resistance evaluations of composite engine structures. Other accomplishments include durability evaluations of metal joints and prototype structures, and verified excellence in analysis of composite materials.

GENOA can be used to simulate and predict aging and failure in all sorts of structural materials, including high-tech alloys and ceramics used in airplanes, cars, engines and bridges.

The development of GENOA began at Glenn in the 1970s and was commercialized in 1998. The software can predict progressive aging and failure of materials as diverse as metals, ceramics, concrete and all types of composites. The ability to predict material and structural failure helps manufacturers build stronger aircraft fuselages, engines, car bodies and bridges. This is especially important today as commercial aircraft fleets age and many elements of road and bridge infrastructure near the end of their useful lives.

GENOA, a 1995 Phase II SBIR Award to Alpha Star Corporation, was a NASA Software of the Year Award winner in 1999. The software has also earned an R&D 100 Award winner in 2000, a Turning Goals into Reality Award in 2000 and the prestigious Tibbetts Award in 2001. ✲

For more information, visit *http://www.alphastarcorp.com*. Please mention you read about it in *Innovation*.

SBIR PROJECTS SELECTED FOR PHASE II AWARDS

Nine research proposals have been selected for negotiation of Phase II contract awards for the 2000 SBIR Program.

Phase II continues development of the most promising previously selected Phase I projects. Selection criteria include scientific and tec