

**NASGRO<sup>®</sup>**  
**Fracture Mechanics and Fatigue Crack Growth Analysis Software**  
**Terms and License Agreement**

**Southwest Research Institute<sup>®</sup>**  
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## **Code Capabilities**

NASGRO<sup>®</sup> is a suite of computer programs comprised of analysis modules linked together by graphical user interfaces (GUIs). NASGRO can be used to compute crack growth under a variety of fatigue load spectrum formats, to compute critical crack sizes, to calculate stress intensity factors, and to conduct sustained load crack growth analyses for glass-like materials. These analyses may be done in a fully interactive mode using the GUIs for each module. Material properties for crack growth can be chosen from a large database by selection from a menu. The material property module can also be used to enter, edit and curve fit crack growth data. Analysis of complex two-dimensional geometries with or without cracks to obtain stress intensity factors and stresses can be performed using NASGRO's boundary element module. Additional information on the capabilities of NASGRO can be found at [www.nasgro.swri.org](http://www.nasgro.swri.org).

## **NASGRO Availability & Licensing Philosophy**

The suite of fracture mechanics and fatigue crack growth analysis programs known as NASGRO is made available to the general public by Southwest Research Institute with the goal of transferring NASA-developed technology to industry. NASGRO has been developed and is distributed under the terms of a Space Act Agreement (a joint development agreement) between NASA Johnson Space Center and Southwest Research Institute, with additional support from the European Space Agency, the Federal Aviation Administration, and the NASGRO Industrial Consortium. United States export control laws and regulations govern the transfer/export of NASGRO software. NASGRO has been classified by the US Department of Commerce under ECCN EAR99 and no export license is required.

## **Pricing and Technical Support\***

The standard cost of a perpetual, single-seat license (one user) for NASGRO is \$4,400 (USD) for customers in the United States and many overseas countries. However, special pricing arrangements may apply for non-US customers depending on country; please contact SwRI for a specific quote. Technical support is available at no cost for a period of one (1) year from the date on the signed license agreement and includes bug fixes for the licensed version of NASGRO. NASGRO users are encouraged to use the feedback and bug report utilities on the NASGRO website to request technical support. Additional

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\* Prices or terms may change without notice.

technical support can readily be acquired through a simple time-and-materials (T&M) support contract with Southwest Research Institute. New versions of NASGRO will require purchasing a new license for that version, and a “prior customer” discount may apply.

## **Supported Systems**

NASGRO is operable on personal computers running Windows operating systems. Contact SwRI for additional information on system availability.

## **Multiple Installations & Site License**

The perpetual, single-seat license allows NASGRO to be installed and executed on one computer from one site. Installations to execute NASGRO on additional computers or from additional sites require the purchase of additional licenses and will be charged the same price as the first installation. A site license for an unlimited number of users at a single geographic site is also available. The standard cost of a perpetual, site license (multiple users) for NASGRO is \$31,000 (USD) for customers in the United States and many overseas countries. However, special pricing arrangements may apply for non-US customers depending on country; please contact SwRI for a specific quote.

## **Payment Terms, Delivery and Installation**

*Payment in full and a signed license agreement are required in advance of delivery of the NASGRO software.* Upon receipt of the signed license agreement and the license fee at Southwest Research Institute, the user will receive instructions to download and install the software. The NASGRO documentation (User’s Manual) will be available to the user from within the software after installation.

## **SwRI Contact Information:**

Joseph W. Cardinal  
Program Director  
Mechanical Engineering Division  
Southwest Research Institute  
6220 Culebra Road  
San Antonio, Texas 78238-5166

e-mail: [jcardinal@swri.org](mailto:jcardinal@swri.org)  
phone: (210) 522-3323

