Guide for Solving Optimization Problems Now Available from NAG

July 2010 - Worldwide researchers, engineers, financial engineers and scientists working in many fields seeking the most appropriate way to solve difficult optimization problems can get easy to follow step-by-step instructions on how to select the best-suited local or global optimization routines for their purposes by making use of the Numerical Algorithms Group's (NAG) Decision Trees for optimization.

NAG, a not-for-profit numerical software development organization, devotes significant R&D resources to continually advance methods for solving optimization problems and similar computational challenges. The NAG Decision Trees are part of the documentation for one of the most rigorously tested and documented sets of optimization routines and other mathematical and statistical algorithms in the world, collected into the Numerical Algorithms Group Library. The NAG Library of routines, including the optimization chapters, can be called from diverse environments such as C++, Fortran, MATLAB and R.

Many of those who use NAG's routines, as the building blocks of their applications, rely on the knowledge base in NAG's exhaustive documentation as a part of the "future-proofing" of their application development investments. The Decision Trees, which are a feature of this documentation, are especially useful in helping both new and experienced users to select the appropriate routine for the problem at hand in a matter of minutes.

Dr. David Sayers, a Principal Technical Consultant at NAG commenting on the complexities of selecting optimization algorithms says, *"For maximum efficiency, different algorithms should be used for a different problem types. Often these types are characterized by the type of objective function – that is to be minimized or maximized – and by the types of constraints that are to be applied. Objective functions might be linear, quadratic (positive-definite or indefinite) or nonlinear. They may have a special form, like a sum of squares. They may be sparse or dense and they may be smooth or discontinuous. Combine these with the options for constraints: none, simple bound, linear or genuine nonlinear and we can see that a comprehensive chapter of optimization routines can be very large. To help the user to choose the right routine decision trees are invaluable."*

About NAG

With origins in several UK universities, the Numerical Algorithms Group (NAG, www.nag.com), has its headquarters in Oxford, and is a not-for-profit organization that collaborates with world-leading researchers and practitioners in academia and industry. NAG serves its customers from offices in Oxford, Manchester, Chicago, Tokyo and Taipei,

through field sales staff in France and Germany, as well as via a global network of distributors.

For editorial inquiries, please contact:

Amy Munice, ALM Communications, nag@almcommunications.com, +1-773-862-6800, (skype) ALMCommunications.

Or

Katie O'Hare, NAG Marketing Communications Manager, Katie.OHare@nag.co.uk, +44 (0)1865 511245.

Or

Hiro Chiba, Chief Operating Officer – Nihon NAG, sales@nag-j.co.jp, +81 3 5542 6311.

Or

Edward Chou, NAG Greater China General Manager, Edward@nag-gc.com, Tel: +886-2-25093288,