NAG Library Function Document

nag_drscl (f06fec)

1 Purpose

nag_drscl (f06fec) multiplies a real vector by the reciprocal of a scalar.

2 Specification

```
#include <nag.h>
#include <nagf06.h>
void nag_drscl (Integer n, double alpha, double x[], Integer incx)
```

3 Description

nag_drscl (f06fec) performs the operation

$$x \leftarrow \frac{1}{\alpha} x$$

where x is an n-element real vector scattered with stride **incx** and α is a real nonzero scalar.

4 References

None.

5 Arguments

1: **n** – Integer   *Input*

   On entry: n, the number of elements in x.

2: **alpha** – double   *Input*

   On entry: the scalar α.

   Constraint: **alpha** $\neq 0.0$.

3: **x**[*dim*] – double   *Input/Output*

   Note: the dimension, *dim*, of the array **x** must be at least $\max(1, 1 + (\mathbf{n} - 1) \times \mathbf{incx})$.

   On entry: the n-element vector x. x_i must be stored in $\mathbf{x}[1 + (i - 1) \times \mathbf{incx}]$, for $i = 1, 2, \ldots, \mathbf{n}$.

   Intermediate elements of **x** are not referenced.

   On exit: the updated vector x, stored in the same array elements used to supply the original vector.

4: **incx** – Integer   *Input*

   On entry: the increment in the subscripts of **x** between successive elements of x.

   Constraint: **incx** > 0.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Parallelism and Performance

nag_drscl (f06fec) makes calls to BLAS and/or LAPACK routines, which may be threaded within the vendor library used by this implementation. Consult the documentation for the vendor library for further information.

Please consult the x06 Chapter Introduction for information on how to control and interrogate the OpenMP environment used within this function. Please also consult the Users' Note for your implementation for any additional implementation-specific information.

9 Further Comments

None.

10 Example

None.