NAG Library Routine Document

E04NEF/E04NEA

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of **bold italicised** terms and other implementation-dependent details.

1 Purpose

To supply individual optional parameters to E04NCF/E04NCA. More precisely, E04NEF must be used to supply optional parameters to E04NCF and E04NEA must be used to supply optional parameters to E04NCA.

E04NEA is a version of E04NEF that has additional parameters in order to make it safe for use in multithreaded applications (see Section 5). The initialization routine E04WBF **must** have been called before calling E04NEA.

2 Specification

2.1 Specification for E04NEF

```
SUBROUTINE E04NEF (STR)

CHARACTER(*) STR
```

2.2 Specification for E04NEA

```
SUBROUTINE E04NEA (STR, LWSAV, IWSAV, RWSAV, INFORM)

INTEGER            IWSAV(610), INFORM
REAL (KIND=nag_wp) RWSAV(475)
LOGICAL            LWSAV(120)
CHARACTER(*)       STR
```

3 Description

E04NEF/E04NEA may be used to supply values for optional parameters to E04NCF/E04NCA. It is only necessary to call E04NEF/E04NEA for those parameters whose values are to be different from their default values. One call to E04NEF/E04NEA sets one parameter value.

Each optional parameter is defined by a single character string, of up to 72 characters, consisting of one or more items. The items associated with a given option must be separated by spaces, or equals signs [=]. Alphabetic characters may be upper or lower case. The string

```
    Print Level = 1
```

is an example of a string used to set an optional parameter. For each option the string contains one or more of the following items:

– a mandatory keyword;

– a phrase that qualifies the keyword;

– a number that specifies an integer or real value. Such numbers may be up to 16 contiguous characters in Fortran's I, F, E or D formats, terminated by a space if this is not the last item on the line.

Blank strings and comments are ignored. A comment begins with an asterisk (*) and all subsequent characters in the string are regarded as part of the comment.

For E04NEF, each user-specified option is normally printed as it is defined, on the current advisory message unit (see X04ABF), but this printing may be suppressed using the keyword **Nolist**. Thus the statement

```
    CALL E04NEF ('Nolist')
```

suppresses printing of this and subsequent options. Printing will automatically be turned on again after a call to E04NCF and may be turned on again at any time using the keyword **List**.

For E04NEA printing is turned off by default, but may be turned on at any time using the keyword **List**.

Optional parameter settings are preserved following a call to E04NCF/E04NCA and so the keyword **Defaults** is provided to allow you to reset all the optional parameters to their default values before a subsequent call to E04NCF/E04NCA.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 in E04NCF/E04NCA.

4   References

None.

5   Parameters

1:    STR – CHARACTER(*)   *Input*

   On entry: a single valid option string (as described in Section 3 and in Section 11 in E04NCF/ E04NCA).

Note: *the following are additional parameters for specific use with E04NEA. Users of E04NEF therefore need not read the remainder of this description.*

2:    LWSAV(120) – LOGICAL array   *Communication Array*
3:    IWSAV(610) – INTEGER array   *Communication Array*
4:    RWSAV(475) – REAL (KIND=nag_wp) array   *Communication Array*

   The arrays LWSAV, IWSAV and RWSAV **must not** be altered between calls to any of the routines E04NEA, E04NCA, E04NDA or E04WBF.

5:    INFORM – INTEGER   *Output*

   On exit: contains zero if a valid option string has been supplied and a value > 0 otherwise (see Section 6).

6   Error Indicators and Warnings

Errors or warnings detected by the routine:

INFORM = 5

   The supplied option is invalid. Check that the keywords are neither ambiguous nor misspelt.

7   Accuracy

Not applicable.

8   Further Comments

E04NDF/E04NDA may also be used to supply optional parameters to E04NCF/E04NCA.

9 Example

See Section 9 in E04NDF/E04NDA.