NAG Library Routine Document

E05JAF

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

E05JAF is used to initialize communication data for the suite of multi-level coordinate search routines: E05JBF, E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

2 Specification

```
SUBROUTINE E05JAF (N_R, COMM, LCOMM, IFAIL)

INTEGER            N_R, LCOMM, IFAIL
REAL (KIND=nag_wp) COMM(LCOMM)
```

3 Description

E05JAF initializes the communication array COMM for the solver E05JBF and the optional-parameter handlers E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

4 References

None.

5 Parameters

1: N_R – INTEGER *Dummy*

This parameter is no longer accessed by E05JAF.

2: COMM(LCOMM) – REAL (KIND=nag_wp) array *Communication Array*

On exit: COMM **must not** be altered between calls to any of the routines E05JBF, E05JCF, E05JDF, E05JEF, E05JFF, E05JGF, E05JHF, E05JJF, E05JKF and E05JLF.

3: LCOMM – INTEGER *Input*

On entry: the dimension of the array COMM as declared in the (sub)program from which E05JAF is called.

Constraint: LCOMM ≥ 100.

4: IFAIL – INTEGER *Input/Output*

On entry: IFAIL must be set to 0, -1 or 1. If you are unfamiliar with this parameter you should refer to Section 3.3 in the Essential Introduction for details.

For environments where it might be inappropriate to halt program execution when an error is detected, the value -1 or 1 is recommended. If the output of error messages is undesirable, then the value 1 is recommended. Otherwise, if you are not familiar with this parameter, the recommended value is 0. **When the value -1 or 1 is used it is essential to test the value of IFAIL on exit.**

On exit: IFAIL $= 0$ unless the routine detects an error or a warning has been flagged (see Section 6).

6 Error Indicators and Warnings

If on entry IFAIL $= 0$ or -1, explanatory error messages are output on the current error message unit (as defined by X04AAF).

Errors or warnings detected by the routine:

IFAIL $= 1$

An input parameter is invalid. The output message provides more details of the invalid argument.

7 Accuracy

Not applicable.

8 Further Comments

The time taken by E05JAF is negligible.

9 Example

See Section 9 in E05JBF and E05JCF.