NAG Fortran Library Routine Document

G05YCF

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

G05YCF initializes the Faure generator. It must be called before using G05YDF and is required if a Faure sequence is wanted from G05YJF or G05YKF.

2 Specification

```
SUBROUTINE G05YCF (IDIM, IREF, IFAIL)
INTEGER          IDIM, IREF(406), IFAIL
```

3 Description

G05YCF places vital initialization information into the array IREF for subsequent use by the generator routines.

4 References

None.

5 Parameters

1: IDIM – INTEGER   *Input*

On entry: the number of dimensions required.

Constraint: $1 \leq \text{IDIM} \leq 40$.

2: IREF(406) – INTEGER array   *Output*

On exit: contains initialization information for use with the generator routines. IREF should not be altered in any way between initialization and calls of the generator routines.

3: IFAIL – INTEGER   *Input/Output*

On entry: IFAIL must be set to 0, -1 or 1. Users who are unfamiliar with this parameter should refer to Chapter P01 for details.

On exit: IFAIL $= 0$ unless the routine detects an error (see Section 6).

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, for users 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.**

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

On entry, IDIM < 1 or IDIM > 40.

IFAIL = 2

There has been a serious malfunction of the initialization routine. Please contact NAG.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

See Section 9 of the document for G05YDF.