NAG Toolbox for MATLAB

g05kc

1 Purpose

g05kc sets the seeds to a non-repeatable initial value for the selected generator as used by and passed to the group of pseudo-random number functions G05K–G05Q .

2 Syntax

```
[igen, iseed] = g05kc(igen)
```

3 Description

g05kc sets the seeds used by the selected generator mechanism (see the G05 Chapter Introduction) to values calculated from the setting of the real-time clock. The pseudo-random number generator is selected by the input value of the parameter **igen**.

This function will yield different subsequent sequences of random numbers in different runs of the calling program. It should be noted that there is no guarantee of statistical properties between sequences, only within sequences.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

1: **igen – int32 scalar**

Must contain the identification number for the generator to be used to return a pseudo-random number and should remain unchanged until a re-initialization by a call to one of the functions g05kb or g05kc. The values that may be chosen are:

igen $= 0$, the basic generator;

$1 \leq$ **igen** ≤ 273, a Wichman–Hill generator.

See the G05 Chapter Introduction for details.

5.2 Optional Input Parameters

None.

5.3 Input Parameters Omitted from the MATLAB Interface

None.

5.4 Output Parameters

1: **igen – int32 scalar**

If **igen** < 0 on input then **igen** is set to 0, if **igen** > 273 on input then **igen** is set to $\mathrm{mod}(\textbf{igen} - 1, 273) + 1$.

2: **iseed**(4) – **int32 array**

Contains values which define an initial state for the generator selected by the parameter **igen**. The values returned will differ for each run of the calling program.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

```
igen = int32(1);
[igenOut, iseed] = g05kc(igen)
```

```
igenOut =
           1
iseed =
     1064263
    15068581
     9904070
    14915043
```