

# NAG Fortran Library Routine Document

## F06GTF (ZAXPYI)

**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

F06GTF (ZAXPYI) performs the operation

$$y \leftarrow \alpha x + y$$

where  $x$  is a sparse complex vector stored in compressed form, and  $y$  is a complex vector in full storage form.

### 2 Specification

```
SUBROUTINE F06GTF (NZ, A, X, INDX, Y)
  INTEGER          NZ, INDX(*)
  complex*16     A, X(*), Y(*)
```

The routine may be called by its BLAS name *zaxpyi*.

### 3 Description

None.

### 4 References

None.

### 5 Parameters

- |    |  |                     |
|----|--|---------------------|
| 1: | NZ – INTEGER   | <i>Input</i>        |
|    | <i>On entry:</i> the number of elements in the compressed vector $x$ .                         |                     |
| 2: | A – <b>complex*16</b>  | <i>Input</i>        |
|    | <i>On entry:</i> the scalar $\alpha$ .   |                     |
| 3: | X(*) – <b>complex*16</b> array   | <i>Input</i>        |
|    | <i>On entry:</i> the compressed vector $x$ .   |                     |
| 4: | INDX(*) – INTEGER array  | <i>Input</i>        |
|    | <i>On entry:</i> the indices of the elements in the compressed vector $x$ .                    |                     |
|    | <i>Constraint:</i> The indices must be distinct.   |                     |
| 5: | Y(*) – <b>complex*16</b> array   | <i>Input/Output</i> |
|    | <i>On entry:</i> the vector $y$ . Only elements corresponding to indices in INDX are accessed. |                     |
|    | <i>On exit:</i> the updated vector $y$ .   |                     |

## **6 Error Indicators and Warnings**

None.

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