

GEOREF

10xxxxxx.1

LEGAL RESTRICTIONS:

This Reusable Software Component (RSC) contains data with Unlimited Government Rights.

DESCRIPTION:

GEOREF is a C language code component that provides conversions between Geodetic coordinates (latitude and longitude) and World Geographic Reference System (GEOREF) coordinates.

CERTIFICATION LEVEL:

This RSC has been certified at level 4. A level 4 component satisfies the criteria for reliability, testing, and documentation for the Army Reuse Center (ARC). The component comes with test materials and a Reuse Manual that aids in integrating the component into a software system.

LEVEL OF TESTING/ACCEPTANCE:

Unit and integration testing have been performed for the functions contained in this component.

PURPOSE/INTENDED USE:

The purpose of GEOREF is to provide a reusable component which supports the following coordinate conversions:

- Geodetic coordinates (latitude and longitude in radians) to a GEOREF coordinate string.
- GEOREF coordinate string to Geodetic coordinates (latitude and longitude in radians).

HARDWARE/ENVIRONMENT CONSTRAINTS:

There are no hardware or environment constraints. There are no limitations.

FUNCTIONS:

Convert_Geodetic_To_GEOREF – This function converts the specified geodetic coordinates (latitude and longitude in radians) to the corresponding GEOREF coordinate string with the specified level of precision.

Convert_GEOREF_To_Geodetic – This function converts the specified GEOREF coordinate string to geodetic coordinates (latitude and longitude in radians).

EXAMPLE APPLICATIONS:

The following example illustrates how GEOREF can be used to convert Geodetic coordinates to GEOREF coordinates and back again:

Function Call:

```
status = Convert_Geodetic_To_GEOREF (Latitude, Longitude, Precision, GEOREF)
```

Inputs:

Latitude:	35.5
Longitude:	-75.25
Precision	5

Outputs:

GEOREF:	GJQF4500030000
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Function Call:

```
status = Convert_GEOREF_To_Geodetic (GEOREF, Latitude, Longitude)
```

Inputs:

GEOREF:	GJQF4530
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Outputs:

Latitude: 35.5

Longitude: -75.25