

# MiscIrelandOldUTMCoord

**Inherits From:** MiscUTMCoord : MiscCoord : Object  
**Declared In:** misckit/miscgiskit/MiscIrelandOldUTMCoord.h

## Class Description

A MiscIrelandOldUTMCoord object contains points in the Irish Universal Transverse Mercator Projection described in the Irish Ordinance Survey document, "Tables for the Transverse Mercator Projection of Ireland", 1953, reprinted 1971. The original values for the airy sphere are used applied. All distances are in meters.

MiscIrelandOldUTMCoords use a MiscIrelandCoordConverter object as the default converter for **convert:to:** operations (See MiscCoord). This related class is invisible to the user and handles conversion between the basic types discussed above. It is used because the Irish Grid uses slightly different equations to convert between UTM and world coordinates than the UK and UTM Zone equations.

The first time a MiscIrelandOldUTMCoord is created, a single instance of a MiscUTMConstants object is created with values particular to this grid.

World coordinate of True Origin:	Latitude 53.5 N, Longitude 8.0 W
True origin offset from grid origin:	200000.0 meters East , 250000.0 meters North
Airy sphere:	a=6377340.189 meters, b=6356034.446 meters
Scaling at Central Meridian:	1.000035

There are also some errors in their calculations of derived constants, so the normal calculation is overridden and their book values are used instead of the calculated ones. Note that the book value of n is truncated rather than rounded,

and the book value of  $e^2$  is incorrect starting at the 10th decimal place:

	$e^2$	n
calculated	0.006670540605897831814	0.001673220462817007959
book	0.00667054015	0.001673220462

There are other difficulties in comparing values with those done with old references such as this. All the examples are calculated from tabular values and interpolations. The examples in this particular reference use only first differences and are thus inherently accurate only to about .1 meter, whereas values translated from World to this type are exact calculation from the equations, and should thus be accurate to the 1mm limit of the equations.

The invisible constants object is shared by all future instances of MiscIrelandOldUTMCoord that are created and is protected against deletion.

## Method Types

Initialization

- `initWithDescription:`
- `awake`

## Instance Methods

**`awake`**

- `awake`

Connect to the private local constants object to the unarchived object and free the unarchived constants. You should never invoke this method directly. Returns **`self`**.

**`initWithDescription:`**

- **`initWithDescription:(char*)textString`**

Designated initializer for the `MiscIrelandOldUTMCoord` class. *textString* is copied and may be used in describing the set of points. The new object will initially have space for one point. The default conversion contractor for conversion between coordinate systems is set to be the instance of `MiscIrelandCoordConverter`.