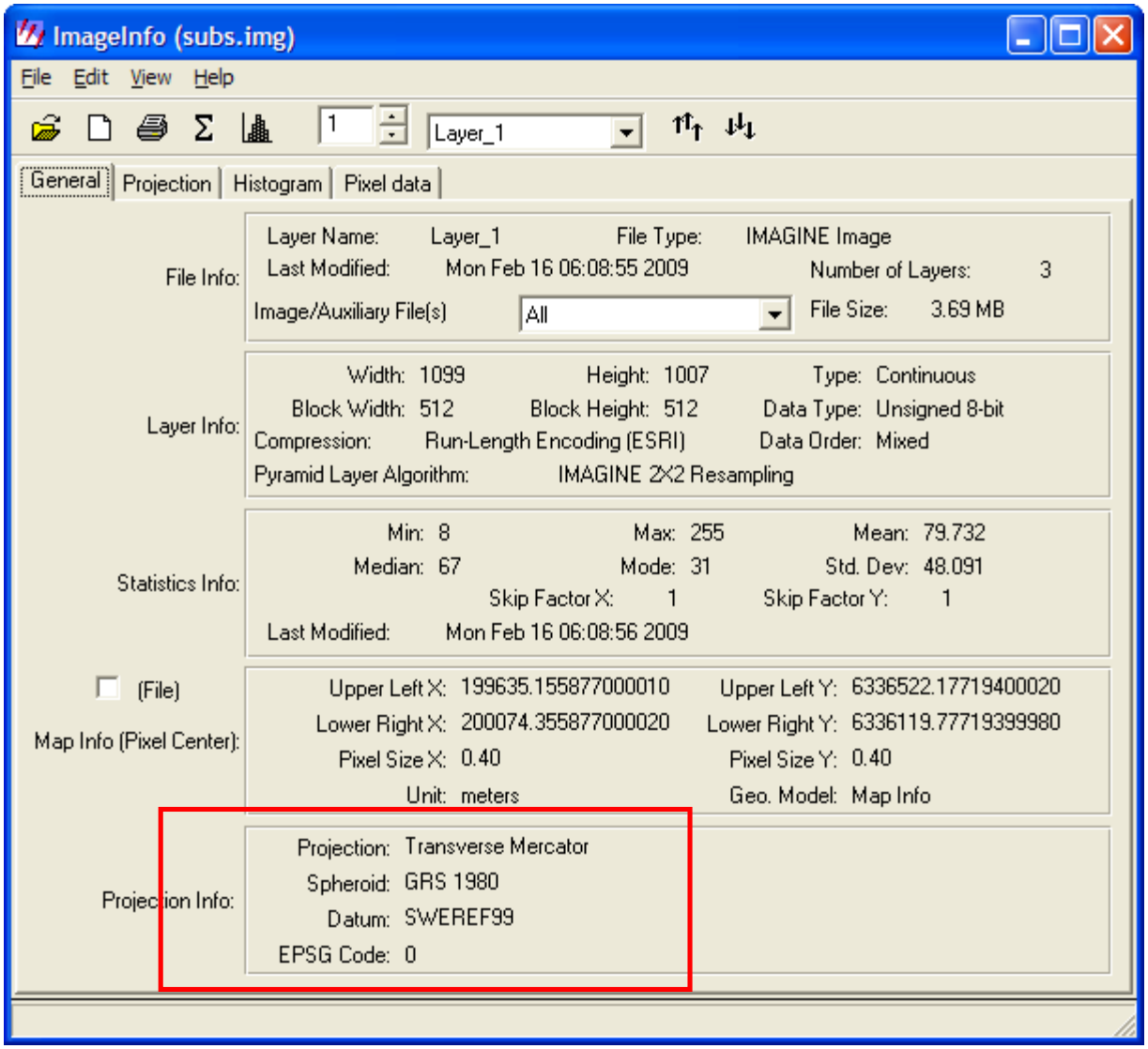
How to add a new entry to the ERDAS IMAGINE EPSG database

Why is my EPSG Code 0?



The image has the valid projection (projection=Transverse Mercator, Spheroid=GRS 1980, Datum=SWEREF99), but this particular combination doesn't have a valid EPSG code in IMAGINE.

Why IMAGINE returns the EPSG Code 0

[1] Basically, ERDAS IMAGINE use ESRI's library (based on ArcGIS 9.2) to convert EPSG to ERDAS IMAGINE's internal EPRJ system. ERDAS IMAGINE recognizes the EPSG codes that ESRI recognizes. Beginning with ERDAS IMAGINE 2010, it has an automatic EPSG update engine, so that the IMAGINE EPSG database will be synchronized with EPSG database at www.**epsg**.org.

[2] How does IMAGINE find the EPSG Code?
IMAGINE simply matches the combination of ñProjectionò, ñSpheroidò, and ñDatumòof your image to IMAGINE's internal projection database. ERDAS IMAGINE use the following files to setup its projection ñdatabaseò(these files have a unique key to link to each other, so they behave just like a database):
mapprojections.dat
spheroid.tab
epsg.plb
Here is the workflow:

IMAGINE will try to match this combination: [Projection=Transverse Mercator, Spheroid=GRS 1980, Datum=SWEREF99] in the epsg.plb file, but unfortunately there is no such combination. The closet combination is:

```
"ETRS89 / ETRS-TM35FIN (3067)" {
 INTERNAL 1 "GRS 1980" "GRS 1980" 35
  3: 1.0000000000000000E+00
}
```

But the projection (Transverse Mercator) and datum (GRS 1980:SWEREF99) don't match the EPSG definition. That's why IMAGINE return EPSG code 0.

Example of epsg.plb

EPSG Code	Definition in epsg.plb	Note

EPSG 2397	For EPSG: 2397
	"Pulkovo 1942(83) / 3-degree Gauss-Kruger zone 3 (2397)" {
	INTERNAL 9 "**Krasovsky**" "**DE_42/83 to ETRS89**" 0
	2: 1.0000000000000000E+00 4: 1.5707963267948966E-001
	5: 0.0000000000000000E+00 6: 3.5000000000000000E+06
	7: 0.0000000000000000E+00 "meters"
	}
		Projection = Internal 9 = Transverse Mercator
		Spheroid = Krasovsky
		Datum = DE_42/83 to ETRS89

EPSG 3067	"ETRS89 / ETRS-TM35FIN (3067)" {
	INTERNAL 1 "GRS 1980" "GRS 1980" 35
	3: 1.0000000000000000E+00
	}
		Projection = Internal 1 = UTM (zone 35)
		Spheroid = GRS 1980
		Datum = GRS 1980

EPSG 3021	Not Supported by IMAGINE	

How to manually add a new entry to the IMAGINE EPSG database

We need to permit IMAGINE to recognize the EPSG for this image, so that we can create a new EPSG code for it. In this example, letôs use EPSG=3007.

[1] Find the parameters for the projection ñTransverse Mercatoròin the ñ**mapprojections.dat**òfile (<IMAGINE_HOME>\etc\mapprojections.dat).

```
"Transverse Mercator" {
        Internal 9
```

```
"Spheroid" <spheroid>
"Scale factor at central meridian" <2:number>
"Longitude of central meridian" <4:angle ew:dd>
"Latitude of origin of projection" <5:angle ns:dd>
"False easting" <6:distance ew:meters>
"False northing" <7:distance ns:meters>
```

[2] Find the parameters for the spheroid ñGRS 1980ò in the ñ**spheroid.tab**ò file (<IMAGINE_HOME>\etc\spheroid.tab).

```
"GRS 1980" {
        9 6378137.0   6356752.31414
        "GRS 1980" 0 0 0 0 0 0 0
        "ETRS 1989" 0 0 0 0 0 0 0
        "SWEREF99" 0 0 0 0 0 0 0
```

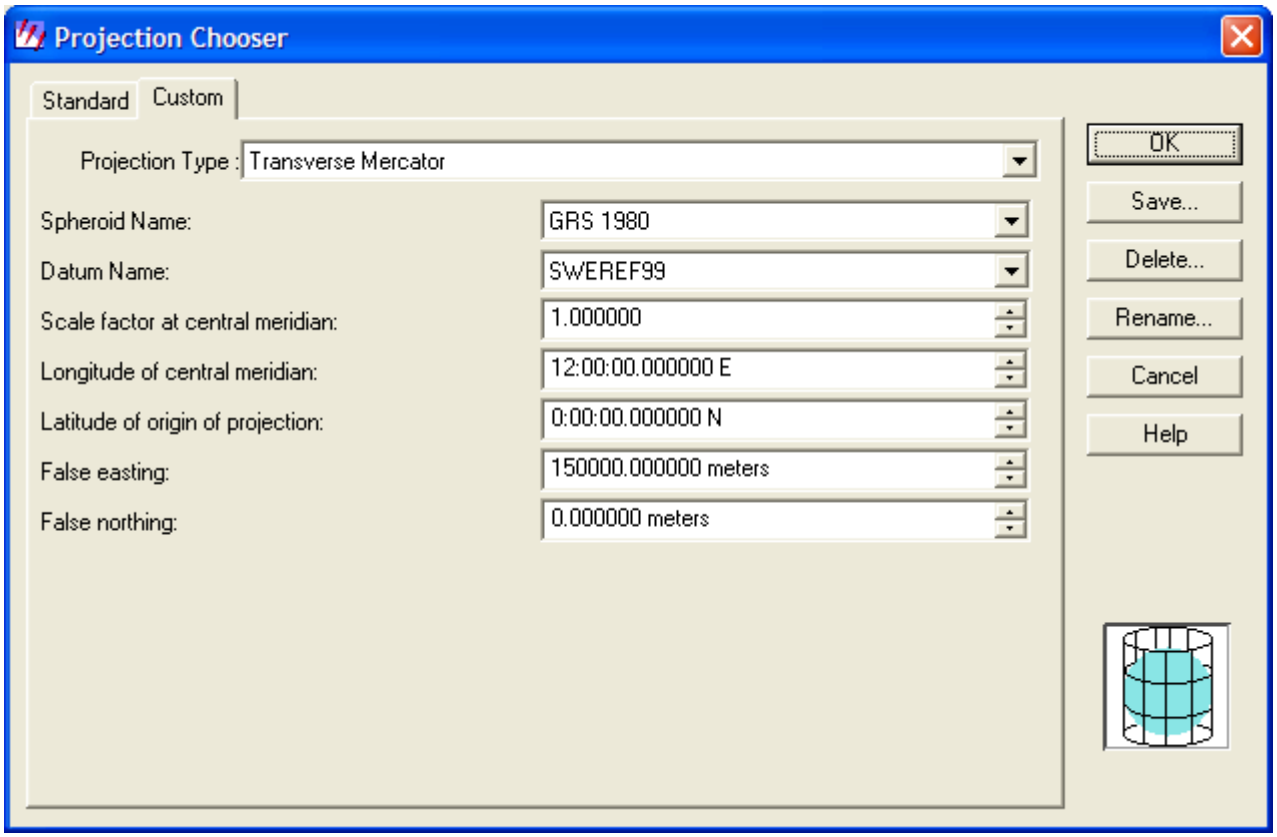
[3] Find the parameters for the datum ñSWEREF99ò for spheroid ñGRS 1980ò in the ñ**spheroid.tab**ò file(<IMAGINE_HOME>\etc\spheroid.tab).

```
"GRS 1980" {
        9 6378137.0   6356752.31414
        "GRS 1980" 0 0 0 0 0 0 0
        "ETRS 1989" 0 0 0 0 0 0 0
        "SWEREF99" 0 0 0 0 0 0 0
```

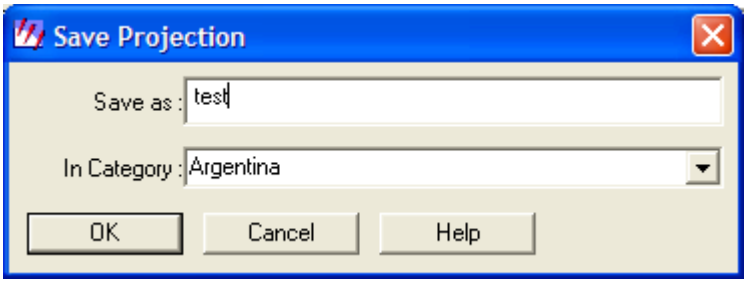
[4] Create the new EPSG 3007 code for this combination:

a. Open the image in an IMAGINE viewer, select ñImage Infoò, then go to ñEdit->Add/change projection.

b. Select ñCustomò, and you will see the Projection Chooser:



c. Select ñSaveò and save it to your desired category. In this example, we will use ñArgentina.ò Select OK.



d. Open C:\Document and Settings\<UesrName>\.imagine930\projections\argentina.plb
You will see this at the end of the document:

```
"test" {
 INTERNAL 9 "GRS 1980" "SWEREF99" 0
  2:1.0000000000000000E+000  4:2.0943951023931959E-001
  5:0.0000000000000000E+000  6:1.5000000000000000E+005
  7:0.0000000000000000E+000
}
```

This projection is EPSG 3007, which you can verify at http://www.epsg-registry.org/

e. You can modify it so that it looks like this: "Sweden projection / Sweden projection for special user (3007)," which will be the name for the new EPSG code.

```
"Sweden projection / Sweden projection for special user (3007)" {
 INTERNAL 9 "GRS 1980" "SWEREF99" 0
  2:1.0000000000000000E+000  4:2.0943951023931959E-001
  5:0.0000000000000000E+000  6:1.5000000000000000E+005
  7:0.0000000000000000E+000
}
```

Parameter Explanation	
INTERNAL 9	Projection name
"GRS 1980"	Spheroid name
"SWEREF99"	Datum name
0	Zone number
2:1.0000000000000000E+000	Scale factor at central meridian
4:2.0943951023931959E-001	Longitude of central meridian 12 (degree) * pi / 180 = 0.2094395... (radian)
5:0.0000000000000000E+000	Latitude of orig projection 0 (degree) * pi / 180 = 0 (radian)
6:1.5000000000000000E+005	FALSE easting = 150000 (meters)

Parameter Explanation	
7:0.0000000000000000E+000	FALSE northing = 0 (meters)

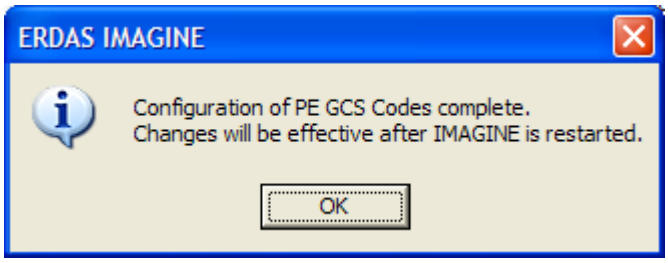
f. Now append this new entry to the end of your <IMAGINE_HOME>\etc\projections\epsg.plb file, like this. Make sure you add unit ñmetersò at the end:

```
....
"(Deprecated) NTF (Paris) / Centre France (27593)" {
 INTERNAL 67 "Clarke 1880 IGN" "NTF" 0
  2:8.5521133347722149E-001  3:0.0000000000000000E+000
  4:9.9987749900000000E-001  5:6.0000000000000000E+005
  6:2.0000000000000000E+005  "meters"
}
"(Deprecated) NTF (Paris) / Centre France (27594)" {
 INTERNAL 67 "Clarke 1880 IGN" "NTF" 0
  2:8.1768675455934341E-001  3:0.0000000000000000E+000
  4:9.9994471000000000E-001  5:2.3435800000000000E+002
  6:1.8586136900000000E+005  "meters"
}
"Sweden projection / Sweden projection for special user (3007)" {
 INTERNAL 9 "GRS 1980" "SWEREF99" 0
  2:1.0000000000000000E+000  4:2.0943951023931959E-001
  5:0.0000000000000000E+000  6:1.5000000000000000E+005
  7:0.0000000000000000E+000  "meters"
}
```

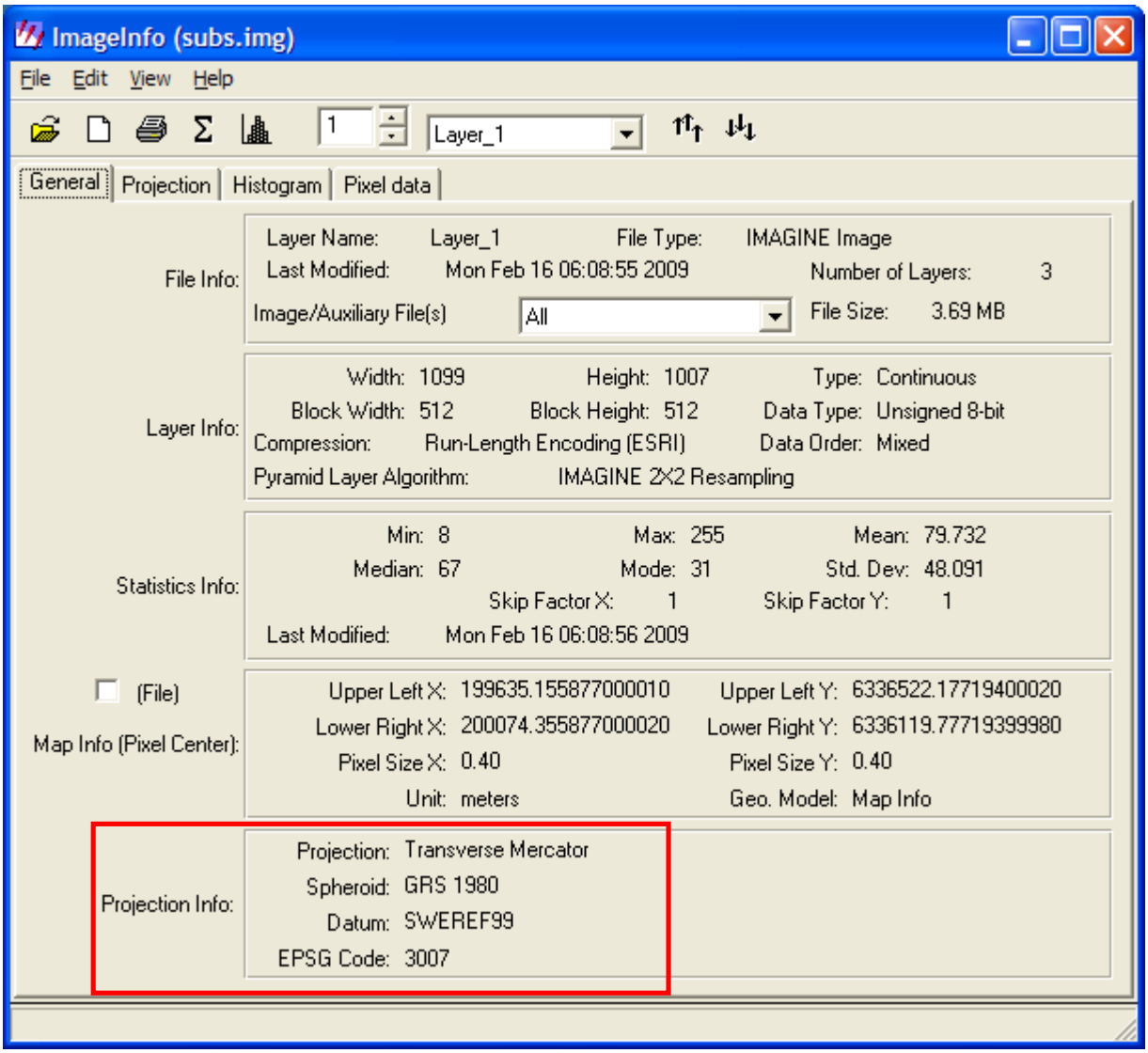
[5] Now restart ERDAS IMAGINE, reconfigure PE/GCE codes, and restart IMAGINE again.

a. ERDAS IMAGINE classic interface: Utilities > Reconfigure PE GCS Codes.

b. ERDAS IMAGINE ribbon interface: ERDAS Menu button > Configuration menu > Reconfigure PE GCS Codes.



[6] Open the image in the IMAGINE viewer and launch Image Info. ERDAS IMAGINE will now recognize your image with your customized EPSG code.


ImageInfo (subs.img)
File Edit View Help
1
Layer_1
General
Projection
Histogram
Pixel data
File Info:
Layer Name: Layer_1
File Type: IMAGINE Image
Last Modified: Mon Feb 16 06:08:55 2009
Number of Layers: 3
Image/Auxiliary File(s)
All
File Size: 3.69 MB
Layer Info:
Width: 1099
Height: 1007
Type: Continuous
Block Width: 512
Block Height: 512
Data Type: Unsigned 8-bit
Compression: Run-Length Encoding (ESRI)
Data Order: Mixed
Pyramid Layer Algorithm: IMAGINE 2X2 Resampling
Statistics Info:
Min: 8
Max: 255
Mean: 79.732
Median: 67
Mode: 31
Std. Dev: 48.091
Skip Factor X: 1
Skip Factor Y: 1
Last Modified: Mon Feb 16 06:08:56 2009
(File)
Map Info (Pixel Center):
Upper Left X: 199635.155877000010
Upper Left Y: 6336522.17719400020
Lower Right X: 200074.355877000020
Lower Right Y: 6336119.77719399980
Pixel Size X: 0.40
Pixel Size Y: 0.40
Unit: meters
Geo. Model: Map Info
Projection Info:
Projection: Transverse Mercator
Spheroid: GRS 1980
Datum: SWEREF99
EPSG Code: 3007