

FORMAT SPECIFICATION

RMMCHART 1.1

RMM Marine GeoTiff 1.0 Based Digital Marine Charts

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RMM Marine and PEERLESS Management Systems

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Overview

RMMCHART defines the first open specification for Digital Marine Charts.

At the time of this publication, in February 1998, many different formats are in use by Digital Marine Map publishers, and some of the most widely used are proprietary in nature. Marine charts, like aeronautical charts, are items of safety equipment. Lack of current information is a safety hazard, so **RMM Marine** proposes that a commonly available public domain format be adopted as the basis for all future publications. The TIFF and GeoTiff standards are well tested, and only minimal extensions are necessary to publish complete and accurate Digital Marine Charts in that format.

This document defines the necessary extensions to the TIFF/GeoTiff standard to implement a safe and useful new standard, which we call **RMMCHART**. As soon as a majority of the active Digital Marine Chart publishers agree to the new format, **RMM Marine** will vacate its copyright to the public domain.

This specification is in regular use by RMM Marine, but has not yet been fully tested against Marine Charts from all sources. All major publishers are invited to assist in guaranteeing exhaustive test procedures.

RMMCHART has been designed to be fully compliant with both the TIFF 6.0 and GeoTiff 1.0 working standards. The **RMMCHART** user defined extensions to GeoTiff 1.0 include data definitions which meet both the letter and the intent of the GeoTiff standard. It is important to note that **RMMCHART** files can be directly read by TIFF readers which lack GeoTiff capability. The result appears as a standard TIFF 6.0 file with the GeoTiff data transparent to the reader. By the same token, TIFF/GeoTiff readers which lack **RMMCHART** extensions can read **RMMCHART** files and use all of the standard TIFF and GeoTiff tags and data in a normal manner.

Other useful features of the **RMMCHART** format are:

1. The complete description of each nautical chart is contained entirely WITHIN the single delivered file. There are no separate data files to store and track .
2. Inset charts are both georeferenced and contain an index pointer back into the main chart raster.

RMMCHART format definition

File Names:

All file names are based on International Chart Numbers such as:

18461.RMM for a Base Chart, and

18461_1.RMM for the first Inset in that chart.

The format definitions in an RMMCHART are derived from four sources:

1. Based on Tiff 6.0 and GeoTiff 1.0

GeoTiff 1.0 implies use of EPSG Geodesy Parameters, version 2.1

TIFF 6.0 Tags

TAG	NAME	TYPE	USAGE
33432	Copyright	ASCII	Define Ownership
269	Document Name	ASCII	Chart Name and Number
270	Image Description	ASCII	List of Insets Comma Delimited
306	Date/Time	ASCII	Image Creation Time Stamp
256	Image Width	LONG	Width in Pixels
257	Image Length	LONG	Height in Pixels
258	Bits per sample	SHORT	4 or 8 bit color indices
259	Compression	SHORT	32773 (Packbits) only
262	Photogrammetric	SHORT	3 Only
273	Strip Offsets	LONG	Auto Generated
278	Rows per Strip	SHORT	1 Only
279	Strip Byte Counts	LONG	Auto Generated
282	X Resolution	SHORT	DPI count
283	Y Resolution	SHORT	DPI count
296	Resolution Unit	SHORT	2 for inches
320	Color Palette	SHORT	Auto Generated

2. GeoTiff 1.0 GeoTags and GeoKeys

TAGS:

33922	ModelTiepointTag	DOUBLE	IJK,XYZ pixel/Coord sets FIRST 4, SW,NW,NE,SE DEFINE the NEATLINE No maximum number of points
33550	ModelPixelScaleTag	DOUBLE	X pixel scale Y pixel scale Z pixel scale in Map Linear Units per pixel

GeoKeys:

List Locations refer to GeoTiff 1.0 Appendices, Section 6.

1024	GTModelTypeGeoKey	SHORT	Coordinate System From list: Sect 6.3.1.1
1025	RasterTypeGeoKey	SHORT	1=RasterPixellsArea
3072	ProjectedCSTypeGeoKey	SHORT	Projection Definition from list: Sect 6.3.3.1

3. GeoKeys from not yet implemented portion of GeoTiff 1.0

4096	VerticalCSTypeGeoKey	SHORT	Vertical Coordinate System From list: Sect 6.3.4.1
4098	VerticalDatumGeoKey	SHORT	Vertical Datum From list: Sect 6.3.4.2
4099	VerticalUnitsGeoKey	SHORT	Vertical Units From list: Sect 6.3.1.3

4. The following KEYS are herewith defined within the USER DEFINED portion of the GeoKey allocation space. This document is version 1.1 of that space allocation definition. They will initially only be valid in RMMChart implementations, but might later be registered.

47001	ChartFormat	SHORT	ChartFormat From List: RMMData 1.1
47002	ChartSource	ASCII	Text NOAA, etc.
47003	ChartSourceEdition	ASCII	Text
47004	ChartSourceDate	ASCII	mm/dd/yyyy
47005	ChartCorrDate	ASCII	mm/dd/yyyy
47006	ChartCountryOrigin	ASCII	Text
47007	ChartRasterEdition	ASCII	Text
47008	ChartSoundingDatum	SHORT	Sounding Datum From list: RmmData 1.2
47009	ChartDepthUnits	SHORT	Depth Units From list: Sect 6.3.1.3

47010	ChartMagVar	SHORT	Minutes (-W, +E) Magnetic Variation on Chart Definition Date
47011	ChartMagVarYear	SHORT	1990, etc Year of Chart Definition
47012	ChartMagVarAnnChange	SHORT	Seconds (-W, +E) Published Annual Change in Magnetic Variation
47013	ChartWGSNSShift	SHORT	Value North/South(+/-)Shift from Chart Datum to WGS84
47014	ChartWGSEWShift	SHORT	Value East/West (+/-) Shift from Chart Datum to WGS84
47015	InsetNWPixelX	LONG	Value Location of NW Pixel X on Main Chart Sheet INSET MAPS ONLY Default = 0
47016	InsetNWPixelY	LONG	Value Location of NW Pixel Y on Main Chart Sheet INSET MAPS ONLY Default = 0

RMM Marine Data Lists

1.1

Chart Formats:

General	= 47500
Coastal	= 47501
Harbor	= 47502
SailingInternational	= 47503
SmallCraft Route	= 47504
SmallCraftArea	= 47505
SmallCraftFolio	= 47506
Topographic	= 47507
Recreation	= 47508
Index	= 47509
Inset	= 47510

1.2

Sounding Datum:

EqSLW	= 47600	/*Equatorial Spring Low Water	*/
ISLW	= 47601	/*Indian Spring Low Water	*/
LAT	= 47602	/*Lowest Astronomical Tide	*/
LLW	= 47603	/*Lowest Low Water	*/
LNLW	= 47604	/*Lowest Normal Low Water	
*/			
MHHW	= 47605	/*Mean Higher High Water	*/
MHW	= 47606	/*Mean High Water	*/
MHWS	= 47607	/*Mean High Water Springs	*/
MLLW	= 47608	/*Mean Lower Low Water	*/
MLLWS	= 47609	/*Mean Lower Low Water Springs	*/
MLW	= 47610	/*Mean Low Water	*/
MSL	= 47611	/*Mean Sea Level	*/
TcHHW	= 47612	/* Tropic Higher High Water	
*/			
TcLLW	= 47613	/*Tropic Lower Low Water	*/

EXCERPTS From GeoTiff 1.0 Appendices

6.2 Key ID Summary

6.2.1 GeoTIFF Configuration Keys

GTModelTypeGeoKey	= 1024 /* Section 6.3.1.1 Codes	*/
GTRasterTypeGeoKey	= 1025 /* Section 6.3.1.2 Codes	*/
GTCitationGeoKey	= 1026 /* documentation	*/

6.2.2 Geographic CS Parameter Keys

GeographicTypeGeoKey	= 2048 /* Section 6.3.2.1 Codes	*/
GeogCitationGeoKey	= 2049 /* documentation	*/
GeogGeodeticDatumGeoKey	= 2050 /* Section 6.3.2.2 Codes	*/
GeogPrimeMeridianGeoKey	= 2051 /* Section 6.3.2.4 codes	*/
GeogLinearUnitsGeoKey	= 2052 /* Section 6.3.1.3 Codes	*/
GeogLinearUnitSizeGeoKey	= 2053 /* meters	*/
GeogAngularUnitsGeoKey	= 2054 /* Section 6.3.1.4 Codes	*/
GeogAngularUnitSizeGeoKey	= 2055 /* radians	*/
GeogEllipsoidGeoKey	= 2056 /* Section 6.3.2.3 Codes	*/
GeogSemiMajorAxisGeoKey	= 2057 /* GeogLinearUnits	*/
GeogSemiMinorAxisGeoKey	= 2058 /* GeogLinearUnits	*/
GeogInvFlatteningGeoKey	= 2059 /* ratio	*/
GeogAzimuthUnitsGeoKey	= 2060 /* Section 6.3.1.4 Codes	*/
GeogPrimeMeridianLongGeoKey	= 2061 /* GeogAngularUnit	*/

6.2.3 Projected CS Parameter Keys

ProjectedCSTypeGeoKey	= 3072 /* Section 6.3.3.1 codes	*/
PCSCitationGeoKey	= 3073 /* documentation	*/
ProjectionGeoKey	= 3074 /* Section 6.3.3.2 codes	*/
ProjCoordTransGeoKey	= 3075 /* Section 6.3.3.3 codes	*/
ProjLinearUnitsGeoKey	= 3076 /* Section 6.3.1.3 codes	*/
ProjLinearUnitSizeGeoKey	= 3077 /* meters	*/
ProjStdParallel1GeoKey	= 3078 /* GeogAngularUnit	*/
ProjStdParallel2GeoKey	= 3079 /* GeogAngularUnit	*/
ProjNatOriginLongGeoKey	= 3080 /* GeogAngularUnit	*/
ProjNatOriginLatGeoKey	= 3081 /* GeogAngularUnit	*/
ProjFalseEastingGeoKey	= 3082 /* ProjLinearUnits	*/

ProjFalseNorthingGeoKey	= 3083	/* ProjLinearUnits	*/
ProjFalseOriginLongGeoKey	= 3084	/* GeogAngularUnit	*/
ProjFalseOriginLatGeoKey	= 3085	/* GeogAngularUnit	*/
ProjFalseOriginEastingGeoKey	= 3086	/* ProjLinearUnits	*/
ProjFalseOriginNorthingGeoKey	= 3087	/* ProjLinearUnits	*/
ProjCenterLongGeoKey	= 3088	/* GeogAngularUnit	*/
ProjCenterLatGeoKey	= 3089	/* GeogAngularUnit	*/
ProjCenterEastingGeoKey	= 3090	/* ProjLinearUnits	*/
ProjCenterNorthingGeoKey	= 3091	/* ProjLinearUnits	*/
ProjScaleAtNatOriginGeoKey	= 3092	/* ratio	*/
ProjScaleAtCenterGeoKey	= 3093	/* ratio	*/
ProjAzimuthAngleGeoKey	= 3094	/* GeogAzimuthUnit	*/
ProjStraightVertPoleLongGeoKey	= 3095	/* GeogAngularUnit	*/

Aliases:

ProjStdParallelGeoKey	= ProjStdParallel1GeoKey
ProjOriginLongGeoKey	= ProjNatOriginLongGeoKey
ProjOriginLatGeoKey	= ProjNatOriginLatGeoKey
ProjScaleAtOriginGeoKey	= ProjScaleAtNatOriginGeoKey

6.2.4 Vertical CS Keys

VerticalCSTypeGeoKey	= 4096	/* Section 6.3.4.1 codes	*/
VerticalCitationGeoKey	= 4097	/* documentation	*/
VerticalDatumGeoKey	= 4098	/* Section 6.3.4.2 codes	*/
VerticalUnitsGeoKey	= 4099	/* Section 6.3.1.3 codes	*/

6.3 Key Code Summary

6.3.1 GeoTIFF General Codes

This section includes the general "Configuration" key codes, as well as general codes which are used by more than one key (e.g. units codes).

6.3.1.1 Model Type Codes

Ranges:

0	= undefined
[1, 32766]	= GeoTIFF Reserved Codes
32767	= user-defined
[32768, 65535]	= Private User Implementations

GeoTIFF defined CS Model Type Codes:

ModelTypeProjected	= 1	/* Projection Coordinate System	*/
ModelTypeGeographic	= 2	/* Geographic latitude-longitude System	*/
ModelTypeGeocentric	= 3	/* Geocentric (X,Y,Z) Coordinate System	*/

Notes:

1. ModelTypeGeographic and ModelTypeProjected correspond to the FGDC metadata Geographic and Planar-Projected coordinate system types.

6.3.1.2 Raster Type Codes

Ranges:

0	= undefined
[1, 1023]	= Raster Type Codes (GeoTIFF Defined)
[1024, 32766]	= Reserved
32767	= user-defined
[32768, 65535]	= Private User Implementations

Values:

RasterPixellsArea	= 1
RasterPixellsPoint	= 2

Note: Use of "user-defined" or "undefined" raster codes is not recommended.

6.3.1.3 Linear Units Codes

There are several different kinds of units that may be used in geographically related raster data: linear units, angular units, units of time (e.g. for radar-return), CCD-voltages, etc. For this reason there will be a single, unique range for each kind of unit, broken down into the following currently defined ranges:

Ranges:

0	= undefined
[1, 2000]	= Obsolete GeoTIFF codes
[2001, 8999]	= Reserved by GeoTIFF
[9000, 9099]	= EPSG Linear Units.
[9100, 9199]	= EPSG Angular Units.
32767	= user-defined unit
[32768, 65535]	= Private User Implementations

Linear Unit Values (See the ESPG/POSC tables for definition):

Linear_Meter =	9001
Linear_Foot =	9002
Linear_Foot_US_Survey =	9003
Linear_Foot_Modified_American =	9004
Linear_Foot_Clarke =	9005
Linear_Foot_Indian =	9006
Linear_Link =	9007
Linear_Link_Benoit =	9008
Linear_Link_Sears =	9009
Linear_Chain_Benoit =	9010
Linear_Chain_Sears =	9011
Linear_Yard_Sears =	9012
Linear_Yard_Indian =	9013
Linear_Fathom =	9014
Linear_Mile_International_Nautical=	9015

6.3.1.4 Angular Units Codes

These codes shall be used for any key that requires specification of an angular unit of measurement.

Angular Units

Angular_Radian =	9101
Angular_Degree =	9102
Angular_Arc_Minute =	9103
Angular_Arc_Second =	9104
Angular_Grad =	9105
Angular_Gon =	9106
Angular_DMS =	9107
Angular_DMS_Hemisphere =	9108

6.3.2 Geographic CS Codes

6.3.2.1 Geographic CS Type Codes

Note: A Geographic coordinate system consists of both a datum and a Prime Meridian. Some of the names are very similar, and differ only in the Prime Meridian, so be sure to use the correct one. The codes beginning with GCSE_xxx are unspecified GCS which use ellipsoid (xxx); it is recommended that only the codes beginning with GCS_ be used if possible.

Ranges:

0	= undefined
[1, 1000]	= Obsolete EPSG/POSC Geographic Codes
[1001, 3999]	= Reserved by GeoTIFF
[4000, 4199]	= EPSG GCS Based on Ellipsoid only
[4200, 4999]	= EPSG GCS Based on EPSG Datum
[5000, 32766]	= Reserved by GeoTIFF
32767	= user-defined GCS
[32768, 65535]	= Private User Implementations

Values:

Note: Geodetic datum using Greenwich PM have codes equal to the corresponding Datum code - 2000.

GCS_Adindan =	4201
GCS_AGD66 =	4202
GCS_AGD84 =	4203
GCS_Ain_el_Abd =	4204
GCS_Afgooye =	4205
GCS_Agadez =	4206
GCS_Lisbon =	4207
GCS_Aratu =	4208
GCS_Arc_1950 =	4209
GCS_Arc_1960 =	4210
GCS_Batavia =	4211
GCS_Barbados =	4212
GCS_Beduaram =	4213
GCS_Beijing_1954 =	4214
GCS_Belge_1950 =	4215
GCS_Bermuda_1957 =	4216
GCS_Bern_1898 =	4217
GCS_Bogota =	4218
GCS_Bukit_Rimpah =	4219
GCS_Camacupa =	4220
GCS_Campo_Inchauspe =	4221
GCS_Cape =	4222
GCS_Carthage =	4223
GCS_Chua =	4224
GCS_Corrego_Alegre =	4225
GCS_Cote_d_Ivoire =	4226
GCS_Deir_ez_Zor =	4227
GCS_Douala =	4228
GCS_Egypt_1907 =	4229
GCS_ED50 =	4230
GCS_ED87 =	4231
GCS_Fahud =	4232
GCS_Gandajika_1970 =	4233
GCS_Garoua =	4234
GCS_Guyane_Francaise =	4235
GCS_Hu_Tzu_Shan =	4236
GCS_HD72 =	4237
GCS_ID74 =	4238
GCS_Indian_1954 =	4239
GCS_Indian_1975 =	4240
GCS_Jamaica_1875 =	4241
GCS_JAD69 =	4242
GCS_Kalianpur =	4243
GCS_Kandawala =	4244
GCS_Kertau =	4245
GCS_KOC =	4246

GCS_La_Canoa =	4247
GCS_PSAD56 =	4248
GCS_Lake =	4249
GCS_Leigon =	4250
GCS_Liberia_1964 =	4251
GCS_Lome =	4252
GCS_Luzon_1911 =	4253
GCS_Hito_XVIII_1963 =	4254
GCS_Herat_North =	4255
GCS_Mahe_1971 =	4256
GCS_Makassar =	4257
GCS_EUREF89 =	4258
GCS_Malongo_1987 =	4259
GCS_Manoca =	4260
GCS_Merchich =	4261
GCS_Massawa =	4262
GCS_Minna =	4263
GCS_Mhast =	4264
GCS_Monte_Mario =	4265
GCS_M_poraloko =	4266
GCS_NAD27 =	4267
GCS_NAD_Michigan =	4268
GCS_NAD83 =	4269
GCS_Nahrwan_1967 =	4270
GCS_Naparima_1972 =	4271
GCS_GD49 =	4272
GCS_NGO_1948 =	4273
GCS_Datum_73 =	4274
GCS_NTF =	4275
GCS_NSWC_9Z_2 =	4276
GCS_OSGB_1936 =	4277
GCS_OSGB70 =	4278
GCS_OS_SN80 =	4279
GCS_Padang =	4280
GCS_Palestine_1923 =	4281
GCS_Pointe_Noire =	4282
GCS_GDA94 =	4283
GCS_Pulkovo_1942 =	4284
GCS_Qatar =	4285
GCS_Qatar_1948 =	4286
GCS_Qornoq =	4287
GCS_Loma_Quintana =	4288
GCS_Amersfoort =	4289
GCS_RT38 =	4290
GCS_SAD69 =	4291
GCS_Sapper_Hill_1943 =	4292
GCS_Schwarzeck =	4293
GCS_Segora =	4294
GCS_Serindung =	4295
GCS_Sudan =	4296
GCS_Tananarive =	4297

GCS_Timbalai_1948 =	4298
GCS_TM65 =	4299
GCS_TM75 =	4300
GCS_Tokyo =	4301
GCS_Trinidad_1903 =	4302
GCS_TC_1948 =	4303
GCS_Voirol_1875 =	4304
GCS_Voirol_Unifie =	4305
GCS_Bern_1938 =	4306
GCS_Nord_Sahara_1959 =	4307
GCS_Stockholm_1938 =	4308
GCS_Yacare =	4309
GCS_Yoff =	4310
GCS_Zanderij =	4311
GCS_MGI =	4312
GCS_Belge_1972 =	4313
GCS_DHDN =	4314
GCS_Conakry_1905 =	4315
GCS_WGS_72 =	4322
GCS_WGS_72BE =	4324
GCS_WGS_84 =	4326
GCS_Bern_1898_Bern =	4801
GCS_Bogota_Bogota =	4802
GCS_Lisbon_Lisbon =	4803
GCS_Makassar_Jakarta =	4804
GCS_MGI_Ferro =	4805
GCS_Monte_Mario_Rome =	4806
GCS_NTF_Paris =	4807
GCS_Padang_Jakarta =	4808
GCS_Belge_1950_Brussels =	4809
GCS_Tananarive_Paris =	4810
GCS_Voirol_1875_Paris =	4811
GCS_Voirol_Unifie_Paris =	4812
GCS_Batavia_Jakarta =	4813
GCS_ATF_Paris =	4901
GCS_NDG_Paris =	4902

Ellipsoid-Only GCS:

Note: the numeric code is equal to the code of the corresponding EPSG ellipsoid, minus 3000.

GCSE_Airy1830 =	4001
GCSE_AiryModified1849 =	4002
GCSE_AustralianNationalSpheroid =	4003
GCSE_Bessel1841 =	4004
GCSE_BesselModified =	4005
GCSE_BesselNamibia =	4006
GCSE_Clarke1858 =	4007
GCSE_Clarke1866 =	4008
GCSE_Clarke1866Michigan =	4009

GCSE_Clarke1880_Benoit =	4010
GCSE_Clarke1880_IGN =	4011
GCSE_Clarke1880_RGS =	4012
GCSE_Clarke1880_Arc =	4013
GCSE_Clarke1880_SGA1922 =	4014
GCSE_Everest1830_1937Adjustment =	4015
GCSE_Everest1830_1967Definition =	4016
GCSE_Everest1830_1975Definition =	4017
GCSE_Everest1830Modified =	4018
GCSE_GRS1980 =	4019
GCSE_Helmert1906 =	4020
GCSE_IndonesianNationalSpheroid =	4021
GCSE_International1924 =	4022
GCSE_International1967 =	4023
GCSE_Krassowsky1940 =	4024
GCSE_NWL9D =	4025
GCSE_NWL10D =	4026
GCSE_Plessis1817 =	4027
GCSE_Struve1860 =	4028
GCSE_WarOffice =	4029
GCSE_WGS84 =	4030
GCSE_GEM10C =	4031
GCSE_OSU86F =	4032
GCSE_OSU91A =	4033
GCSE_Clarke1880 =	4034
GCSE_Sphere =	4035

6.3.2.2 Geodetic Datum Codes

Note: these codes do not include the Prime Meridian; if possible use the GCS codes above if the datum and Prime Meridian are on the list. Also, as with the GCS codes, the codes beginning with DatumE_xxx refer only to the specified ellipsoid (xxx); if possible use instead the named datums beginning with Datum_xxx

Ranges:

0 =	undefined
[1, 1000] =	Obsolete EPSG/POSC Datum Codes
[1001, 5999] =	Reserved by GeoTIFF
[6000, 6199] =	EPSG Datum Based on Ellipsoid only
[6200, 6999] =	EPSG Datum Based on EPSG Datum
[6322, 6327] =	WGS Datum
[6900, 6999] =	Archaic Datum
[7000, 32766] =	Reserved by GeoTIFF
32767 =	user-defined GCS
[32768, 65535] =	Private User Implementations

Values:

Datum_Adindan =	6201
Datum_Australian_Geodetic_Datum_1966 =	6202

Datum_Australian_Geodetic_Datum_1984 =	6203
Datum_Ain_el_Abd_1970 =	6204
Datum_Afgooye =	6205
Datum_Agadez =	6206
Datum_Lisbon =	6207
Datum_Aratu =	6208
Datum_Arc_1950 =	6209
Datum_Arc_1960 =	6210
Datum_Batavia =	6211
Datum_Barbados =	6212
Datum_Beduaram =	6213
Datum_Beijing_1954 =	6214
Datum_Reseau_National_Belge_1950 =	6215
Datum_Bermuda_1957 =	6216
Datum_Bern_1898 =	6217
Datum_Bogota =	6218
Datum_Bukit_Rimpah =	6219
Datum_Camacupa =	6220
Datum_Campo_Inchauspe =	6221
Datum_Cape =	6222
Datum_Carthage =	6223
Datum_Chua =	6224
Datum_Corrego_Alegre =	6225
Datum_Cote_d_Ivoire =	6226
Datum_Deir_ez_Zor =	6227
Datum_Douala =	6228
Datum_Egypt_1907 =	6229
Datum_European_Datum_1950 =	6230
Datum_European_Datum_1987 =	6231
Datum_Fahud =	6232
Datum_Gandajika_1970 =	6233
Datum_Garoua =	6234
Datum_Guyane_Francaise =	6235
Datum_Hu_Tzu_Shan =	6236
Datum_Hungarian_Datum_1972 =	6237
Datum_Indonesian_Datum_1974 =	6238
Datum_Indian_1954 =	6239
Datum_Indian_1975 =	6240
Datum_Jamaica_1875 =	6241
Datum_Jamaica_1969 =	6242
Datum_Kalianpur =	6243
Datum_Kandawala =	6244
Datum_Kertau =	6245
Datum_Kuwait_Oil_Company =	6246
Datum_La_Canoa =	6247
Datum_Provisional_S_American_Datum_1956 =	6248
Datum_Lake =	6249
Datum_Leigon =	6250
Datum_Liberia_1964 =	6251
Datum_Lome =	6252
Datum_Luzon_1911 =	6253

Datum_Hito_XVIII_1963 =	6254
Datum_Herat_North =	6255
Datum_Mahe_1971 =	6256
Datum_Makassar =	6257
Datum_European_Reference_System_1989 =	6258
Datum_Malongo_1987 =	6259
Datum_Manoca =	6260
Datum_Merchich =	6261
Datum_Massawa =	6262
Datum_Minna =	6263
Datum_Mhast =	6264
Datum_Monte_Mario =	6265
Datum_M_poraloko =	6266
Datum_North_American_Datum_1927 =	6267
Datum_NAD_Michigan =	6268
Datum_North_American_Datum_1983 =	6269
Datum_Nahrwan_1967 =	6270
Datum_Naparima_1972 =	6271
Datum_New_Zealand_Geodetic_Datum_1949 =	6272
Datum_NGO_1948 =	6273
Datum_Datum_73 =	6274
Datum_Nouvelle_Triangulation_Francaise =	6275
Datum_NSWC_9Z_2 =	6276
Datum_OSGB_1936 =	6277
Datum_OSGB_1970_SN =	6278
Datum_OS_SN_1980 =	6279
Datum_Padang_1884 =	6280
Datum_Palestine_1923 =	6281
Datum_Pointe_Noire =	6282
Datum_Geocentric_Datum_of_Australia_1994 =	6283
Datum_Pulkovo_1942 =	6284
Datum_Qatar =	6285
Datum_Qatar_1948 =	6286
Datum_Qornoq =	6287
Datum_Loma_Quintana =	6288
Datum_Amersfoort =	6289
Datum_RT38 =	6290
Datum_South_American_Datum_1969 =	6291
Datum_Sapper_Hill_1943 =	6292
Datum_Schwarzeck =	6293
Datum_Segora =	6294
Datum_Serindung =	6295
Datum_Sudan =	6296
Datum_Tananarive_1925 =	6297
Datum_Timbalai_1948 =	6298
Datum_TM65 =	6299
Datum_TM75 =	6300
Datum_Tokyo =	6301
Datum_Trinidad_1903 =	6302
Datum_Trucial_Coast_1948 =	6303
Datum_Voirol_1875 =	6304

Datum_Voirol_Unifie_1960 =	6305
Datum_Bern_1938 =	6306
Datum_Nord_Sahara_1959 =	6307
Datum_Stockholm_1938 =	6308
Datum_Yacare =	6309
Datum_Yoff =	6310
Datum_Zanderij =	6311
Datum_Militar_Geographische_Institut =	6312
Datum_Reseau_National_Belge_1972 =	6313
Datum_Deutsche_Hauptdreiecksnetz =	6314
Datum_Conakry_1905 =	6315
Datum_WGS72 =	6322
Datum_WGS72_Transit_Broadcast_Ephemeris =	6324
Datum_WGS84 =	6326
Datum_Ancienne_Triangulation_Francaise =	6901
Datum_Nord_de_Guerre =	6902

Ellipsoid-Only Datum:

Note: the numeric code is equal to the corresponding ellipsoid code, minus 1000.

DatumE_Airy1830 =	6001
DatumE_AiryModified1849 =	6002
DatumE_AustralianNationalSpheroid =	6003
DatumE_Bessel1841 =	6004
DatumE_BesselModified =	6005
DatumE_BesselNamibia =	6006
DatumE_Clarke1858 =	6007
DatumE_Clarke1866 =	6008
DatumE_Clarke1866Michigan =	6009
DatumE_Clarke1880_Benoit =	6010
DatumE_Clarke1880_IGN =	6011
DatumE_Clarke1880_RGS =	6012
DatumE_Clarke1880_Arc =	6013
DatumE_Clarke1880_SGA1922 =	6014
DatumE_Everest1830_1937Adjustment =	6015
DatumE_Everest1830_1967Definition =	6016
DatumE_Everest1830_1975Definition =	6017
DatumE_Everest1830Modified =	6018
DatumE_GRS1980 =	6019
DatumE_Helmert1906 =	6020
DatumE_IndonesianNationalSpheroid =	6021
DatumE_International1924 =	6022
DatumE_International1967 =	6023
DatumE_Krassowsky1960 =	6024
DatumE_NWL9D =	6025
DatumE_NWL10D =	6026
DatumE_Plessis1817 =	6027
DatumE_Struve1860 =	6028
DatumE_WarOffice =	6029

DatumE_WGS84 =	6030
DatumE_GEM10C =	6031
DatumE_OSU86F =	6032
DatumE_OSU91A =	6033
DatumE_Clarke1880 =	6034
DatumE_Sphere =	6035

6.3.2.3 Ellipsoid Codes

Ranges:

0	= undefined
[1, 1000]	= Obsolete EPSG/POSC Ellipsoid codes
[1001, 6999]	= Reserved by GeoTIFF
[7000, 7999]	= EPSG Ellipsoid codes
[8000, 32766]	= Reserved by GeoTIFF
32767	= user-defined
[32768, 65535]	= Private User Implementations

Values:

Ellipse_Airy_1830 =	7001
Ellipse_Airy_Modified_1849 =	7002
Ellipse_Australian_National_Spheroid =	7003
Ellipse_Bessel_1841 =	7004
Ellipse_Bessel_Modified =	7005
Ellipse_Bessel_Namibia =	7006
Ellipse_Clarke_1858 =	7007
Ellipse_Clarke_1866 =	7008
Ellipse_Clarke_1866_Michigan =	7009
Ellipse_Clarke_1880_Benoit =	7010
Ellipse_Clarke_1880_IGN =	7011
Ellipse_Clarke_1880_RGS =	7012
Ellipse_Clarke_1880_Arc =	7013
Ellipse_Clarke_1880_SGA_1922 =	7014
Ellipse_Everest_1830_1937_Adjustment =	7015
Ellipse_Everest_1830_1967_Definition =	7016
Ellipse_Everest_1830_1975_Definition =	7017
Ellipse_Everest_1830_Modified =	7018
Ellipse_GRS_1980 =	7019
Ellipse_Helmert_1906 =	7020
Ellipse_Indonesian_National_Spheroid =	7021
Ellipse_International_1924 =	7022
Ellipse_International_1967 =	7023
Ellipse_Krassowsky_1940 =	7024
Ellipse_NWL_9D =	7025
Ellipse_NWL_10D =	7026
Ellipse_Plessis_1817 =	7027
Ellipse_Struve_1860 =	7028
Ellipse_War_Office =	7029
Ellipse_WGS_84 =	7030

Ellipse_GEM_10C =	7031
Ellipse_OSU86F =	7032
Ellipse_OSU91A =	7033
Ellipse_Clarke_1880 =	7034
Ellipse_Sphere =	7035

6.3.2.4 Prime Meridian Codes

Ranges:

0	= undefined
[1, 100]	= Obsolete EPSG/POSC Prime Meridian codes
[101, 7999]	= Reserved by GeoTIFF
[8000, 8999]	= EPSG Prime Meridian Codes
[9000, 32766]	= Reserved by GeoTIFF
32767	= user-defined
[32768, 65535]	= Private User Implementations

Values:

PM_Greenwich =	8901
PM_Lisbon =	8902
PM_Paris =	8903
PM_Bogota =	8904
PM_Madrid =	8905
PM_Rome =	8906
PM_Bern =	8907
PM_Jakarta =	8908
PM_Ferro =	8909
PM_Brussels =	8910
PM_Stockholm =	8911

6.3.3 Projected CS Codes

6.3.3.1 Projected CS Type Codes

Ranges:

[1, 1000]	= Obsolete EPSG/POSC Projection System Codes
[20000, 32760]	= EPSG Projection System codes
32767	= user-defined
[32768, 65535]	= Private User Implementations

Special Ranges:

1. For PCS utilising GeogCS with code in range 4201 through 4321 (i.e. geodetic datum code 6201 through 6319): As far as is possible the PCS code will be of the format gggzz where ggg is (geodetic datum code -2000) and zz is zone.
2. For PCS utilising GeogCS with code out of range 4201 through 4321 (i.e. geodetic datum code 6201 through 6319). PCS code 20xxx where xxx is a sequential number.
3. Other:

WGS72 / UTM northern hemisphere:	322zz where zz is UTM zone number
WGS72 / UTM southern hemisphere:	323zz where zz is UTM zone number
WGS72BE / UTM northern hemisphere:	324zz where zz is UTM zone number
WGS72BE / UTM southern hemisphere:	325zz where zz is UTM zone number
WGS84 / UTM northern hemisphere:	326zz where zz is UTM zone number
WGS84 / UTM southern hemisphere:	327zz where zz is UTM zone number
US State Plane (NAD27):	267xx/320xx
US State Plane (NAD83):	269xx/321xx

Values:

PCS_Adindan_UTM_zone_37N =	20137
PCS_Adindan_UTM_zone_38N =	20138
PCS_AGD66_AMG_zone_48 =	20248
PCS_AGD66_AMG_zone_49 =	20249
PCS_AGD66_AMG_zone_50 =	20250
PCS_AGD66_AMG_zone_51 =	20251
PCS_AGD66_AMG_zone_52 =	20252
PCS_AGD66_AMG_zone_53 =	20253
PCS_AGD66_AMG_zone_54 =	20254
PCS_AGD66_AMG_zone_55 =	20255
PCS_AGD66_AMG_zone_56 =	20256
PCS_AGD66_AMG_zone_57 =	20257
PCS_AGD66_AMG_zone_58 =	20258
PCS_AGD84_AMG_zone_48 =	20348
PCS_AGD84_AMG_zone_49 =	20349

PCS_AGD84_AMG_zone_50 =	20350
PCS_AGD84_AMG_zone_51 =	20351
PCS_AGD84_AMG_zone_52 =	20352
PCS_AGD84_AMG_zone_53 =	20353
PCS_AGD84_AMG_zone_54 =	20354
PCS_AGD84_AMG_zone_55 =	20355
PCS_AGD84_AMG_zone_56 =	20356
PCS_AGD84_AMG_zone_57 =	20357
PCS_AGD84_AMG_zone_58 =	20358
PCS_Ain_el_Abd_UTM_zone_37N =	20437
PCS_Ain_el_Abd_UTM_zone_38N =	20438
PCS_Ain_el_Abd_UTM_zone_39N =	20439
PCS_Ain_el_Abd_Bahrain_Grid =	20499
PCS_Afgooye_UTM_zone_38N =	20538
PCS_Afgooye_UTM_zone_39N =	20539
PCS_Lisbon_Portugese_Grid =	20700
PCS_Aratu_UTM_zone_22S =	20822
PCS_Aratu_UTM_zone_23S =	20823
PCS_Aratu_UTM_zone_24S =	20824
PCS_Arc_1950_Lo13 =	20973
PCS_Arc_1950_Lo15 =	20975
PCS_Arc_1950_Lo17 =	20977
PCS_Arc_1950_Lo19 =	20979
PCS_Arc_1950_Lo21 =	20981
PCS_Arc_1950_Lo23 =	20983
PCS_Arc_1950_Lo25 =	20985
PCS_Arc_1950_Lo27 =	20987
PCS_Arc_1950_Lo29 =	20989
PCS_Arc_1950_Lo31 =	20991
PCS_Arc_1950_Lo33 =	20993
PCS_Arc_1950_Lo35 =	20995
PCS_Batavia_NEIEZ =	21100
PCS_Batavia_UTM_zone_48S =	21148
PCS_Batavia_UTM_zone_49S =	21149
PCS_Batavia_UTM_zone_50S =	21150
PCS_Beijing_Gauss_zone_13 =	21413
PCS_Beijing_Gauss_zone_14 =	21414
PCS_Beijing_Gauss_zone_15 =	21415
PCS_Beijing_Gauss_zone_16 =	21416
PCS_Beijing_Gauss_zone_17 =	21417
PCS_Beijing_Gauss_zone_18 =	21418
PCS_Beijing_Gauss_zone_19 =	21419
PCS_Beijing_Gauss_zone_20 =	21420
PCS_Beijing_Gauss_zone_21 =	21421
PCS_Beijing_Gauss_zone_22 =	21422
PCS_Beijing_Gauss_zone_23 =	21423
PCS_Beijing_Gauss_13N =	21473
PCS_Beijing_Gauss_14N =	21474
PCS_Beijing_Gauss_15N =	21475
PCS_Beijing_Gauss_16N =	21476
PCS_Beijing_Gauss_17N =	21477

PCS_Beijing_Gauss_18N =	21478
PCS_Beijing_Gauss_19N =	21479
PCS_Beijing_Gauss_20N =	21480
PCS_Beijing_Gauss_21N =	21481
PCS_Beijing_Gauss_22N =	21482
PCS_Beijing_Gauss_23N =	21483
PCS_Belge_Lambert_50 =	21500
PCS_Bern_1898_Swiss_Old =	21790
PCS_Bogota_UTM_zone_17N =	21817
PCS_Bogota_UTM_zone_18N =	21818
PCS_Bogota_Colombia_3W =	21891
PCS_Bogota_Colombia_Bogota =	21892
PCS_Bogota_Colombia_3E =	21893
PCS_Bogota_Colombia_6E =	21894
PCS_Camacupa_UTM_32S =	22032
PCS_Camacupa_UTM_33S =	22033
PCS_C_Inchauspe_Argentina_1 =	22191
PCS_C_Inchauspe_Argentina_2 =	22192
PCS_C_Inchauspe_Argentina_3 =	22193
PCS_C_Inchauspe_Argentina_4 =	22194
PCS_C_Inchauspe_Argentina_5 =	22195
PCS_C_Inchauspe_Argentina_6 =	22196
PCS_C_Inchauspe_Argentina_7 =	22197
PCS_Carthage_UTM_zone_32N =	22332
PCS_Carthage_Nord_Tunisie =	22391
PCS_Carthage_Sud_Tunisie =	22392
PCS_Corrego_Alegre_UTM_23S =	22523
PCS_Corrego_Alegre_UTM_24S =	22524
PCS_Douala_UTM_zone_32N =	22832
PCS_Egypt_1907_Red_Belt =	22992
PCS_Egypt_1907_Purple_Belt =	22993
PCS_Egypt_1907_Ext_Purple =	22994
PCS_ED50_UTM_zone_28N =	23028
PCS_ED50_UTM_zone_29N =	23029
PCS_ED50_UTM_zone_30N =	23030
PCS_ED50_UTM_zone_31N =	23031
PCS_ED50_UTM_zone_32N =	23032
PCS_ED50_UTM_zone_33N =	23033
PCS_ED50_UTM_zone_34N =	23034
PCS_ED50_UTM_zone_35N =	23035
PCS_ED50_UTM_zone_36N =	23036
PCS_ED50_UTM_zone_37N =	23037
PCS_ED50_UTM_zone_38N =	23038
PCS_Fahud_UTM_zone_39N =	23239
PCS_Fahud_UTM_zone_40N =	23240
PCS_Garoua_UTM_zone_33N =	23433
PCS_ID74_UTM_zone_46N =	23846
PCS_ID74_UTM_zone_47N =	23847
PCS_ID74_UTM_zone_48N =	23848
PCS_ID74_UTM_zone_49N =	23849
PCS_ID74_UTM_zone_50N =	23850

PCS_ID74_UTM_zone_51N =	23851
PCS_ID74_UTM_zone_52N =	23852
PCS_ID74_UTM_zone_53N =	23853
PCS_ID74_UTM_zone_46S =	23886
PCS_ID74_UTM_zone_47S =	23887
PCS_ID74_UTM_zone_48S =	23888
PCS_ID74_UTM_zone_49S =	23889
PCS_ID74_UTM_zone_50S =	23890
PCS_ID74_UTM_zone_51S =	23891
PCS_ID74_UTM_zone_52S =	23892
PCS_ID74_UTM_zone_53S =	23893
PCS_ID74_UTM_zone_54S =	23894
PCS_Indian_1954_UTM_47N =	23947
PCS_Indian_1954_UTM_48N =	23948
PCS_Indian_1975_UTM_47N =	24047
PCS_Indian_1975_UTM_48N =	24048
PCS_Jamaica_1875_Old_Grid =	24100
PCS_JAD69_Jamaica_Grid =	24200
PCS_Kalianpur_India_0 =	24370
PCS_Kalianpur_India_I =	24371
PCS_Kalianpur_India_IIa =	24372
PCS_Kalianpur_India_IIIa =	24373
PCS_Kalianpur_India_IVa =	24374
PCS_Kalianpur_India_IIb =	24382
PCS_Kalianpur_India_IIIb =	24383
PCS_Kalianpur_India_IVb =	24384
PCS_Kertau_Singapore_Grid =	24500
PCS_Kertau_UTM_zone_47N =	24547
PCS_Kertau_UTM_zone_48N =	24548
PCS_La_Canoa_UTM_zone_20N =	24720
PCS_La_Canoa_UTM_zone_21N =	24721
PCS_PSAD56_UTM_zone_18N =	24818
PCS_PSAD56_UTM_zone_19N =	24819
PCS_PSAD56_UTM_zone_20N =	24820
PCS_PSAD56_UTM_zone_21N =	24821
PCS_PSAD56_UTM_zone_17S =	24877
PCS_PSAD56_UTM_zone_18S =	24878
PCS_PSAD56_UTM_zone_19S =	24879
PCS_PSAD56_UTM_zone_20S =	24880
PCS_PSAD56_Peru_west_zone =	24891
PCS_PSAD56_Peru_central =	24892
PCS_PSAD56_Peru_east_zone =	24893
PCS_Leigon_Ghana_Grid =	25000
PCS_Lome_UTM_zone_31N =	25231
PCS_Luzon_Philippines_I =	25391
PCS_Luzon_Philippines_II =	25392
PCS_Luzon_Philippines_III =	25393
PCS_Luzon_Philippines_IV =	25394
PCS_Luzon_Philippines_V =	25395
PCS_Makassar_NEIEZ =	25700
PCS_Malongo_1987_UTM_32S =	25932

PCS_Merchich_Nord_Maroc =	26191
PCS_Merchich_Sud_Maroc =	26192
PCS_Merchich_Sahara =	26193
PCS_Massawa_UTM_zone_37N =	26237
PCS_Minna_UTM_zone_31N =	26331
PCS_Minna_UTM_zone_32N =	26332
PCS_Minna_Nigeria_West =	26391
PCS_Minna_Nigeria_Mid_Belt =	26392
PCS_Minna_Nigeria_East =	26393
PCS_Mhast_UTM_zone_32S =	26432
PCS_Monte_Mario_Italy_1 =	26591
PCS_Monte_Mario_Italy_2 =	26592
PCS_M_poraloko_UTM_32N =	26632
PCS_M_poraloko_UTM_32S =	26692
PCS_NAD27_UTM_zone_3N =	26703
PCS_NAD27_UTM_zone_4N =	26704
PCS_NAD27_UTM_zone_5N =	26705
PCS_NAD27_UTM_zone_6N =	26706
PCS_NAD27_UTM_zone_7N =	26707
PCS_NAD27_UTM_zone_8N =	26708
PCS_NAD27_UTM_zone_9N =	26709
PCS_NAD27_UTM_zone_10N =	26710
PCS_NAD27_UTM_zone_11N =	26711
PCS_NAD27_UTM_zone_12N =	26712
PCS_NAD27_UTM_zone_13N =	26713
PCS_NAD27_UTM_zone_14N =	26714
PCS_NAD27_UTM_zone_15N =	26715
PCS_NAD27_UTM_zone_16N =	26716
PCS_NAD27_UTM_zone_17N =	26717
PCS_NAD27_UTM_zone_18N =	26718
PCS_NAD27_UTM_zone_19N =	26719
PCS_NAD27_UTM_zone_20N =	26720
PCS_NAD27_UTM_zone_21N =	26721
PCS_NAD27_UTM_zone_22N =	26722
PCS_NAD27_Alabama_East =	26729
PCS_NAD27_Alabama_West =	26730
PCS_NAD27_Alaska_zone_1 =	26731
PCS_NAD27_Alaska_zone_2 =	26732
PCS_NAD27_Alaska_zone_3 =	26733
PCS_NAD27_Alaska_zone_4 =	26734
PCS_NAD27_Alaska_zone_5 =	26735
PCS_NAD27_Alaska_zone_6 =	26736
PCS_NAD27_Alaska_zone_7 =	26737
PCS_NAD27_Alaska_zone_8 =	26738
PCS_NAD27_Alaska_zone_9 =	26739
PCS_NAD27_Alaska_zone_10 =	26740
PCS_NAD27_California_I =	26741
PCS_NAD27_California_II =	26742
PCS_NAD27_California_III =	26743
PCS_NAD27_California_IV =	26744
PCS_NAD27_California_V =	26745

PCS_NAD27_California_VI =	26746
PCS_NAD27_California_VII =	26747
PCS_NAD27_Arizona_East =	26748
PCS_NAD27_Arizona_Central =	26749
PCS_NAD27_Arizona_West =	26750
PCS_NAD27_Arkansas_North =	26751
PCS_NAD27_Arkansas_South =	26752
PCS_NAD27_Colorado_North =	26753
PCS_NAD27_Colorado_Central =	26754
PCS_NAD27_Colorado_South =	26755
PCS_NAD27_Connecticut =	26756
PCS_NAD27_Delaware =	26757
PCS_NAD27_Florida_East =	26758
PCS_NAD27_Florida_West =	26759
PCS_NAD27_Florida_North =	26760
PCS_NAD27_Hawaii_zone_1 =	26761
PCS_NAD27_Hawaii_zone_2 =	26762
PCS_NAD27_Hawaii_zone_3 =	26763
PCS_NAD27_Hawaii_zone_4 =	26764
PCS_NAD27_Hawaii_zone_5 =	26765
PCS_NAD27_Georgia_East =	26766
PCS_NAD27_Georgia_West =	26767
PCS_NAD27_Idaho_East =	26768
PCS_NAD27_Idaho_Central =	26769
PCS_NAD27_Idaho_West =	26770
PCS_NAD27_Illinois_East =	26771
PCS_NAD27_Illinois_West =	26772
PCS_NAD27_Indiana_East =	26773
PCS_NAD27_BLM_14N_feet =	26774
PCS_NAD27_Indiana_West =	26774
PCS_NAD27_BLM_15N_feet =	26775
PCS_NAD27_Iowa_North =	26775
PCS_NAD27_BLM_16N_feet =	26776
PCS_NAD27_Iowa_South =	26776
PCS_NAD27_BLM_17N_feet =	26777
PCS_NAD27_Kansas_North =	26777
PCS_NAD27_Kansas_South =	26778
PCS_NAD27_Kentucky_North =	26779
PCS_NAD27_Kentucky_South =	26780
PCS_NAD27_Louisiana_North =	26781
PCS_NAD27_Louisiana_South =	26782
PCS_NAD27_Maine_East =	26783
PCS_NAD27_Maine_West =	26784
PCS_NAD27_Maryland =	26785
PCS_NAD27_Massachusetts =	26786
PCS_NAD27_Massachusetts_Is =	26787
PCS_NAD27_Michigan_North =	26788
PCS_NAD27_Michigan_Central =	26789
PCS_NAD27_Michigan_South =	26790
PCS_NAD27_Minnesota_North =	26791
PCS_NAD27_Minnesota_Cent =	26792

PCS_NAD27_Minnesota_South =	26793
PCS_NAD27_Mississippi_East =	26794
PCS_NAD27_Mississippi_West =	26795
PCS_NAD27_Missouri_East =	26796
PCS_NAD27_Missouri_Central =	26797
PCS_NAD27_Missouri_West =	26798
PCS_NAD_Michigan_Michigan_East =	26801
PCS_NAD_Michigan_Michigan_Old_Central =	26802
PCS_NAD_Michigan_Michigan_West =	26803
PCS_NAD83_UTM_zone_3N =	26903
PCS_NAD83_UTM_zone_4N =	26904
PCS_NAD83_UTM_zone_5N =	26905
PCS_NAD83_UTM_zone_6N =	26906
PCS_NAD83_UTM_zone_7N =	26907
PCS_NAD83_UTM_zone_8N =	26908
PCS_NAD83_UTM_zone_9N =	26909
PCS_NAD83_UTM_zone_10N =	26910
PCS_NAD83_UTM_zone_11N =	26911
PCS_NAD83_UTM_zone_12N =	26912
PCS_NAD83_UTM_zone_13N =	26913
PCS_NAD83_UTM_zone_14N =	26914
PCS_NAD83_UTM_zone_15N =	26915
PCS_NAD83_UTM_zone_16N =	26916
PCS_NAD83_UTM_zone_17N =	26917
PCS_NAD83_UTM_zone_18N =	26918
PCS_NAD83_UTM_zone_19N =	26919
PCS_NAD83_UTM_zone_20N =	26920
PCS_NAD83_UTM_zone_21N =	26921
PCS_NAD83_UTM_zone_22N =	26922
PCS_NAD83_UTM_zone_23N =	26923
PCS_NAD83_Alabama_East =	26929
PCS_NAD83_Alabama_West =	26930
PCS_NAD83_Alaska_zone_1 =	26931
PCS_NAD83_Alaska_zone_2 =	26932
PCS_NAD83_Alaska_zone_3 =	26933
PCS_NAD83_Alaska_zone_4 =	26934
PCS_NAD83_Alaska_zone_5 =	26935
PCS_NAD83_Alaska_zone_6 =	26936
PCS_NAD83_Alaska_zone_7 =	26937
PCS_NAD83_Alaska_zone_8 =	26938
PCS_NAD83_Alaska_zone_9 =	26939
PCS_NAD83_Alaska_zone_10 =	26940
PCS_NAD83_California_1 =	26941
PCS_NAD83_California_2 =	26942
PCS_NAD83_California_3 =	26943
PCS_NAD83_California_4 =	26944
PCS_NAD83_California_5 =	26945
PCS_NAD83_California_6 =	26946
PCS_NAD83_Arizona_East =	26948
PCS_NAD83_Arizona_Central =	26949
PCS_NAD83_Arizona_West =	26950

PCS_NAD83_Arkansas_North =	26951
PCS_NAD83_Arkansas_South =	26952
PCS_NAD83_Colorado_North =	26953
PCS_NAD83_Colorado_Central =	26954
PCS_NAD83_Colorado_South =	26955
PCS_NAD83_Connecticut =	26956
PCS_NAD83_Delaware =	26957
PCS_NAD83_Florida_East =	26958
PCS_NAD83_Florida_West =	26959
PCS_NAD83_Florida_North =	26960
PCS_NAD83_Hawaii_zone_1 =	26961
PCS_NAD83_Hawaii_zone_2 =	26962
PCS_NAD83_Hawaii_zone_3 =	26963
PCS_NAD83_Hawaii_zone_4 =	26964
PCS_NAD83_Hawaii_zone_5 =	26965
PCS_NAD83_Georgia_East =	26966
PCS_NAD83_Georgia_West =	26967
PCS_NAD83_Idaho_East =	26968
PCS_NAD83_Idaho_Central =	26969
PCS_NAD83_Idaho_West =	26970
PCS_NAD83_Illinois_East =	26971
PCS_NAD83_Illinois_West =	26972
PCS_NAD83_Indiana_East =	26973
PCS_NAD83_Indiana_West =	26974
PCS_NAD83_Iowa_North =	26975
PCS_NAD83_Iowa_South =	26976
PCS_NAD83_Kansas_North =	26977
PCS_NAD83_Kansas_South =	26978
PCS_NAD83_Kentucky_North =	26979
PCS_NAD83_Kentucky_South =	26980
PCS_NAD83_Louisiana_North =	26981
PCS_NAD83_Louisiana_South =	26982
PCS_NAD83_Maine_East =	26983
PCS_NAD83_Maine_West =	26984
PCS_NAD83_Maryland =	26985
PCS_NAD83_Massachusetts =	26986
PCS_NAD83_Massachusetts_Is =	26987
PCS_NAD83_Michigan_North =	26988
PCS_NAD83_Michigan_Central =	26989
PCS_NAD83_Michigan_South =	26990
PCS_NAD83_Minnesota_North =	26991
PCS_NAD83_Minnesota_Cent =	26992
PCS_NAD83_Minnesota_South =	26993
PCS_NAD83_Mississippi_East =	26994
PCS_NAD83_Mississippi_West =	26995
PCS_NAD83_Missouri_East =	26996
PCS_NAD83_Missouri_Central =	26997
PCS_NAD83_Missouri_West =	26998
PCS_Nahrwan_1967_UTM_38N =	27038
PCS_Nahrwan_1967_UTM_39N =	27039
PCS_Nahrwan_1967_UTM_40N =	27040

PCS_Naparima_UTM_20N =	27120
PCS_GD49_NZ_Map_Grid =	27200
PCS_GD49_North_Island_Grid =	27291
PCS_GD49_South_Island_Grid =	27292
PCS_Datum_73_UTM_zone_29N =	27429
PCS_ATF_Nord_de_Guerre =	27500
PCS_NTF_France_I =	27581
PCS_NTF_France_II =	27582
PCS_NTF_France_III =	27583
PCS_NTF_Nord_France =	27591
PCS_NTF_Centre_France =	27592
PCS_NTF_Sud_France =	27593
PCS_British_National_Grid =	27700
PCS_Point_Noire_UTM_32S =	28232
PCS_GDA94_MGA_zone_48 =	28348
PCS_GDA94_MGA_zone_49 =	28349
PCS_GDA94_MGA_zone_50 =	28350
PCS_GDA94_MGA_zone_51 =	28351
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PCS_GDA94_MGA_zone_57 =	28357
PCS_GDA94_MGA_zone_58 =	28358
PCS_Pulkovo_Gauss_zone_4 =	28404
PCS_Pulkovo_Gauss_zone_5 =	28405
PCS_Pulkovo_Gauss_zone_6 =	28406
PCS_Pulkovo_Gauss_zone_7 =	28407
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PCS_Pulkovo_Gauss_zone_9 =	28409
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PCS_Pulkovo_Gauss_zone_11 =	28411
PCS_Pulkovo_Gauss_zone_12 =	28412
PCS_Pulkovo_Gauss_zone_13 =	28413
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PCS_Pulkovo_Gauss_zone_28 =	28428
PCS_Pulkovo_Gauss_zone_29 =	28429

PCS_Pulkovo_Gauss_zone_30 =	28430
PCS_Pulkovo_Gauss_zone_31 =	28431
PCS_Pulkovo_Gauss_zone_32 =	28432
PCS_Pulkovo_Gauss_4N =	28464
PCS_Pulkovo_Gauss_5N =	28465
PCS_Pulkovo_Gauss_6N =	28466
PCS_Pulkovo_Gauss_7N =	28467
PCS_Pulkovo_Gauss_8N =	28468
PCS_Pulkovo_Gauss_9N =	28469
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PCS_Pulkovo_Gauss_11N =	28471
PCS_Pulkovo_Gauss_12N =	28472
PCS_Pulkovo_Gauss_13N =	28473
PCS_Pulkovo_Gauss_14N =	28474
PCS_Pulkovo_Gauss_15N =	28475
PCS_Pulkovo_Gauss_16N =	28476
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PCS_Pulkovo_Gauss_18N =	28478
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PCS_Pulkovo_Gauss_21N =	28481
PCS_Pulkovo_Gauss_22N =	28482
PCS_Pulkovo_Gauss_23N =	28483
PCS_Pulkovo_Gauss_24N =	28484
PCS_Pulkovo_Gauss_25N =	28485
PCS_Pulkovo_Gauss_26N =	28486
PCS_Pulkovo_Gauss_27N =	28487
PCS_Pulkovo_Gauss_28N =	28488
PCS_Pulkovo_Gauss_29N =	28489
PCS_Pulkovo_Gauss_30N =	28490
PCS_Pulkovo_Gauss_31N =	28491
PCS_Pulkovo_Gauss_32N =	28492
PCS_Qatar_National_Grid =	28600
PCS_RD_Netherlands_Old =	28991
PCS_RD_Netherlands_New =	28992
PCS_SAD69_UTM_zone_18N =	29118
PCS_SAD69_UTM_zone_19N =	29119
PCS_SAD69_UTM_zone_20N =	29120
PCS_SAD69_UTM_zone_21N =	29121
PCS_SAD69_UTM_zone_22N =	29122
PCS_SAD69_UTM_zone_17S =	29177
PCS_SAD69_UTM_zone_18S =	29178
PCS_SAD69_UTM_zone_19S =	29179
PCS_SAD69_UTM_zone_20S =	29180
PCS_SAD69_UTM_zone_21S =	29181
PCS_SAD69_UTM_zone_22S =	29182
PCS_SAD69_UTM_zone_23S =	29183
PCS_SAD69_UTM_zone_24S =	29184
PCS_SAD69_UTM_zone_25S =	29185
PCS_Sapper_Hill_UTM_20S =	29220
PCS_Sapper_Hill_UTM_21S =	29221

PCS_Schwarzeck_UTM_33S =	29333
PCS_Sudan_UTM_zone_35N =	29635
PCS_Sudan_UTM_zone_36N =	29636
PCS_Tananarive_Laborde =	29700
PCS_Tananarive_UTM_38S =	29738
PCS_Tananarive_UTM_39S =	29739
PCS_Timbalai_1948_Borneo =	29800
PCS_Timbalai_1948_UTM_49N =	29849
PCS_Timbalai_1948_UTM_50N =	29850
PCS_TM65_Irish_Nat_Grid =	29900
PCS_Trinidad_1903_Trinidad =	30200
PCS_TC_1948_UTM_zone_39N =	30339
PCS_TC_1948_UTM_zone_40N =	30340
PCS_Voirol_N_Algerie_ancien =	30491
PCS_Voirol_S_Algerie_ancien =	30492
PCS_Voirol_Unifie_N_Algerie =	30591
PCS_Voirol_Unifie_S_Algerie =	30592
PCS_Bern_1938_Swiss_New =	30600
PCS_Nord_Sahara_UTM_29N =	30729
PCS_Nord_Sahara_UTM_30N =	30730
PCS_Nord_Sahara_UTM_31N =	30731
PCS_Nord_Sahara_UTM_32N =	30732
PCS_Yoff_UTM_zone_28N =	31028
PCS_Zanderij_UTM_zone_21N =	31121
PCS_MGI_Austria_West =	31291
PCS_MGI_Austria_Central =	31292
PCS_MGI_Austria_East =	31293
PCS_Belge_Lambert_72 =	31300
PCS_DHDN_Germany_zone_1 =	31491
PCS_DHDN_Germany_zone_2 =	31492
PCS_DHDN_Germany_zone_3 =	31493
PCS_DHDN_Germany_zone_4 =	31494
PCS_DHDN_Germany_zone_5 =	31495
PCS_NAD27_Montana_North =	32001
PCS_NAD27_Montana_Central =	32002
PCS_NAD27_Montana_South =	32003
PCS_NAD27_Nebraska_North =	32005
PCS_NAD27_Nebraska_South =	32006
PCS_NAD27_Nevada_East =	32007
PCS_NAD27_Nevada_Central =	32008
PCS_NAD27_Nevada_West =	32009
PCS_NAD27_New_Hampshire =	32010
PCS_NAD27_New_Jersey =	32011
PCS_NAD27_New_Mexico_East =	32012
PCS_NAD27_New_Mexico_Cent =	32013
PCS_NAD27_New_Mexico_West =	32014
PCS_NAD27_New_York_East =	32015
PCS_NAD27_New_York_Central =	32016
PCS_NAD27_New_York_West =	32017
PCS_NAD27_New_York_Long_Is =	32018
PCS_NAD27_North_Carolina =	32019

PCS_NAD27_North_Dakota_N =	32020
PCS_NAD27_North_Dakota_S =	32021
PCS_NAD27_Ohio_North =	32022
PCS_NAD27_Ohio_South =	32023
PCS_NAD27_Oklahoma_North =	32024
PCS_NAD27_Oklahoma_South =	32025
PCS_NAD27_Oregon_North =	32026
PCS_NAD27_Oregon_South =	32027
PCS_NAD27_Pennsylvania_N =	32028
PCS_NAD27_Pennsylvania_S =	32029
PCS_NAD27_Rhode_Island =	32030
PCS_NAD27_South_Carolina_N =	32031
PCS_NAD27_South_Carolina_S =	32033
PCS_NAD27_South_Dakota_N =	32034
PCS_NAD27_South_Dakota_S =	32035
PCS_NAD27_Tennessee =	32036
PCS_NAD27_Texas_North =	32037
PCS_NAD27_Texas_North_Cen =	32038
PCS_NAD27_Texas_Central =	32039
PCS_NAD27_Texas_South_Cen =	32040
PCS_NAD27_Texas_South =	32041
PCS_NAD27_Utah_North =	32042
PCS_NAD27_Utah_Central =	32043
PCS_NAD27_Utah_South =	32044
PCS_NAD27_Vermont =	32045
PCS_NAD27_Virginia_North =	32046
PCS_NAD27_Virginia_South =	32047
PCS_NAD27_Washington_North =	32048
PCS_NAD27_Washington_South =	32049
PCS_NAD27_West_Virginia_N =	32050
PCS_NAD27_West_Virginia_S =	32051
PCS_NAD27_Wisconsin_North =	32052
PCS_NAD27_Wisconsin_Cen =	32053
PCS_NAD27_Wisconsin_South =	32054
PCS_NAD27_Wyoming_East =	32055
PCS_NAD27_Wyoming_E_Cen =	32056
PCS_NAD27_Wyoming_W_Cen =	32057
PCS_NAD27_Wyoming_West =	32058
PCS_NAD27_Puerto_Rico =	32059
PCS_NAD27_St_Croix =	32060
PCS_NAD83_Montana =	32100
PCS_NAD83_Nebraska =	32104
PCS_NAD83_Nevada_East =	32107
PCS_NAD83_Nevada_Central =	32108
PCS_NAD83_Nevada_West =	32109
PCS_NAD83_New_Hampshire =	32110
PCS_NAD83_New_Jersey =	32111
PCS_NAD83_New_Mexico_East =	32112
PCS_NAD83_New_Mexico_Cent =	32113
PCS_NAD83_New_Mexico_West =	32114
PCS_NAD83_New_York_East =	32115

PCS_NAD83_New_York_Central =	32116
PCS_NAD83_New_York_West =	32117
PCS_NAD83_New_York_Long_Is =	32118
PCS_NAD83_North_Carolina =	32119
PCS_NAD83_North_Dakota_N =	32120
PCS_NAD83_North_Dakota_S =	32121
PCS_NAD83_Ohio_North =	32122
PCS_NAD83_Ohio_South =	32123
PCS_NAD83_Oklahoma_North =	32124
PCS_NAD83_Oklahoma_South =	32125
PCS_NAD83_Oregon_North =	32126
PCS_NAD83_Oregon_South =	32127
PCS_NAD83_Pennsylvania_N =	32128
PCS_NAD83_Pennsylvania_S =	32129
PCS_NAD83_Rhode_Island =	32130
PCS_NAD83_South_Carolina =	32133
PCS_NAD83_South_Dakota_N =	32134
PCS_NAD83_South_Dakota_S =	32135
PCS_NAD83_Tennessee =	32136
PCS_NAD83_Texas_North =	32137
PCS_NAD83_Texas_North_Cen =	32138
PCS_NAD83_Texas_Central =	32139
PCS_NAD83_Texas_South_Cen =	32140
PCS_NAD83_Texas_South =	32141
PCS_NAD83_Utah_North =	32142
PCS_NAD83_Utah_Central =	32143
PCS_NAD83_Utah_South =	32144
PCS_NAD83_Vermont =	32145
PCS_NAD83_Virginia_North =	32146
PCS_NAD83_Virginia_South =	32147
PCS_NAD83_Washington_North =	32148
PCS_NAD83_Washington_South =	32149
PCS_NAD83_West_Virginia_N =	32150
PCS_NAD83_West_Virginia_S =	32151
PCS_NAD83_Wisconsin_North =	32152
PCS_NAD83_Wisconsin_Cen =	32153
PCS_NAD83_Wisconsin_South =	32154
PCS_NAD83_Wyoming_East =	32155
PCS_NAD83_Wyoming_E_Cen =	32156
PCS_NAD83_Wyoming_W_Cen =	32157
PCS_NAD83_Wyoming_West =	32158
PCS_NAD83_Puerto_Rico_Virgin_Is =	32161
PCS_WGS72_UTM_zone_1N =	32201
PCS_WGS72_UTM_zone_2N =	32202
PCS_WGS72_UTM_zone_3N =	32203
PCS_WGS72_UTM_zone_4N =	32204
PCS_WGS72_UTM_zone_5N =	32205
PCS_WGS72_UTM_zone_6N =	32206
PCS_WGS72_UTM_zone_7N =	32207
PCS_WGS72_UTM_zone_8N =	32208
PCS_WGS72_UTM_zone_9N =	32209

PCS_WGS72_UTM_zone_10N =	32210
PCS_WGS72_UTM_zone_11N =	32211
PCS_WGS72_UTM_zone_12N =	32212
PCS_WGS72_UTM_zone_13N =	32213
PCS_WGS72_UTM_zone_14N =	32214
PCS_WGS72_UTM_zone_15N =	32215
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PCS_WGS72_UTM_zone_18N =	32218
PCS_WGS72_UTM_zone_19N =	32219
PCS_WGS72_UTM_zone_20N =	32220
PCS_WGS72_UTM_zone_21N =	32221
PCS_WGS72_UTM_zone_22N =	32222
PCS_WGS72_UTM_zone_23N =	32223
PCS_WGS72_UTM_zone_24N =	32224
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PCS_WGS72_UTM_zone_27N =	32227
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PCS_WGS72_UTM_zone_29N =	32229
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PCS_WGS72_UTM_zone_44N =	32244
PCS_WGS72_UTM_zone_45N =	32245
PCS_WGS72_UTM_zone_46N =	32246
PCS_WGS72_UTM_zone_47N =	32247
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PCS_WGS72_UTM_zone_51N =	32251
PCS_WGS72_UTM_zone_52N =	32252
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PCS_WGS72_UTM_zone_56N =	32256
PCS_WGS72_UTM_zone_57N =	32257
PCS_WGS72_UTM_zone_58N =	32258
PCS_WGS72_UTM_zone_59N =	32259
PCS_WGS72_UTM_zone_60N =	32260

PCS_WGS72_UTM_zone_1S =	32301
PCS_WGS72_UTM_zone_2S =	32302
PCS_WGS72_UTM_zone_3S =	32303
PCS_WGS72_UTM_zone_4S =	32304
PCS_WGS72_UTM_zone_5S =	32305
PCS_WGS72_UTM_zone_6S =	32306
PCS_WGS72_UTM_zone_7S =	32307
PCS_WGS72_UTM_zone_8S =	32308
PCS_WGS72_UTM_zone_9S =	32309
PCS_WGS72_UTM_zone_10S =	32310
PCS_WGS72_UTM_zone_11S =	32311
PCS_WGS72_UTM_zone_12S =	32312
PCS_WGS72_UTM_zone_13S =	32313
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PCS_WGS72_UTM_zone_17S =	32317
PCS_WGS72_UTM_zone_18S =	32318
PCS_WGS72_UTM_zone_19S =	32319
PCS_WGS72_UTM_zone_20S =	32320
PCS_WGS72_UTM_zone_21S =	32321
PCS_WGS72_UTM_zone_22S =	32322
PCS_WGS72_UTM_zone_23S =	32323
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PCS_WGS72_UTM_zone_28S =	32328
PCS_WGS72_UTM_zone_29S =	32329
PCS_WGS72_UTM_zone_30S =	32330
PCS_WGS72_UTM_zone_31S =	32331
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PCS_WGS72_UTM_zone_33S =	32333
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PCS_WGS72_UTM_zone_36S =	32336
PCS_WGS72_UTM_zone_37S =	32337
PCS_WGS72_UTM_zone_38S =	32338
PCS_WGS72_UTM_zone_39S =	32339
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PCS_WGS72_UTM_zone_48S =	32348
PCS_WGS72_UTM_zone_49S =	32349
PCS_WGS72_UTM_zone_50S =	32350
PCS_WGS72_UTM_zone_51S =	32351

PCS_WGS72_UTM_zone_52S =	32352
PCS_WGS72_UTM_zone_53S =	32353
PCS_WGS72_UTM_zone_54S =	32354
PCS_WGS72_UTM_zone_55S =	32355
PCS_WGS72_UTM_zone_56S =	32356
PCS_WGS72_UTM_zone_57S =	32357
PCS_WGS72_UTM_zone_58S =	32358
PCS_WGS72_UTM_zone_59S =	32359
PCS_WGS72_UTM_zone_60S =	32360
PCS_WGS72BE_UTM_zone_1N =	32401
PCS_WGS72BE_UTM_zone_2N =	32402
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PCS_WGS72BE_UTM_zone_4N =	32404
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PCS_WGS84_UTM_zone_52S =	32752
PCS_WGS84_UTM_zone_53S =	32753
PCS_WGS84_UTM_zone_54S =	32754
PCS_WGS84_UTM_zone_55S =	32755
PCS_WGS84_UTM_zone_56S =	32756
PCS_WGS84_UTM_zone_57S =	32757
PCS_WGS84_UTM_zone_58S =	32758
PCS_WGS84_UTM_zone_59S =	32759
PCS_WGS84_UTM_zone_60S =	32760

6.3.3.2 Projection Codes

Note: Projections do not include GCS or PCS definitions. If possible, use the PCS code for standard projected coordinate systems, and use this code only if nonstandard datums are required.

Ranges:

0	= undefined
[1, 9999]	= Obsolete EPSG/POSC Projection codes
[10000, 19999]	= EPSG/POSC Projection codes
32767	= user-defined
[32768, 65535]	= Private User Implementations

Special Ranges:

US State Plane Format: 1sszz
where ss is USC&GS State code
zz is USC&GS zone code for NAD27 zones
zz is (USC&GS zone code + 30) for NAD83 zones

Larger zoned systems	(16000-17999)
UTM (North) Format:	160zz
UTM (South) Format:	161zz
zoned Universal Gauss-Kruger Format:	162zz
Universal Gauss-Kruger (unzoned) Format:	163zz
Australian Map Grid Format:	174zz
Southern African STM Format:	175zz

Smaller zoned systems: Format: 18ssz
where ss is sequential system number
z is zone code

Single zone projections Format: 199ss
where ss is sequential system number

Values:

Proj_Alabama_CS27_East =	10101
Proj_Alabama_CS27_West =	10102
Proj_Alabama_CS83_East =	10131
Proj_Alabama_CS83_West =	10132
Proj_Arizona_Coordinate_System_east =	10201
Proj_Arizona_Coordinate_System_Central =	10202
Proj_Arizona_Coordinate_System_west =	10203
Proj_Arizona_CS83_east =	10231
Proj_Arizona_CS83_Central =	10232
Proj_Arizona_CS83_west =	10233
Proj_Arkansas_CS27_North =	10301
Proj_Arkansas_CS27_South =	10302
Proj_Arkansas_CS83_North =	10331

Proj_Arkansas_CS83_South =	10332
Proj_California_CS27_I =	10401
Proj_California_CS27_II =	10402
Proj_California_CS27_III =	10403
Proj_California_CS27_IV =	10404
Proj_California_CS27_V =	10405
Proj_California_CS27_VI =	10406
Proj_California_CS27_VII =	10407
Proj_California_CS83_1 =	10431
Proj_California_CS83_2 =	10432
Proj_California_CS83_3 =	10433
Proj_California_CS83_4 =	10434
Proj_California_CS83_5 =	10435
Proj_California_CS83_6 =	10436
Proj_Colorado_CS27_North =	10501
Proj_Colorado_CS27_Central =	10502
Proj_Colorado_CS27_South =	10503
Proj_Colorado_CS83_North =	10531
Proj_Colorado_CS83_Central =	10532
Proj_Colorado_CS83_South =	10533
Proj_Connecticut_CS27 =	10600
Proj_Connecticut_CS83 =	10630
Proj_Delaware_CS27 =	10700
Proj_Delaware_CS83 =	10730
Proj_Florida_CS27_East =	10901
Proj_Florida_CS27_West =	10902
Proj_Florida_CS27_North =	10903
Proj_Florida_CS83_East =	10931
Proj_Florida_CS83_West =	10932
Proj_Florida_CS83_North =	10933
Proj_Georgia_CS27_East =	11001
Proj_Georgia_CS27_West =	11002
Proj_Georgia_CS83_East =	11031
Proj_Georgia_CS83_West =	11032
Proj_Idaho_CS27_East =	11101
Proj_Idaho_CS27_Central =	11102
Proj_Idaho_CS27_West =	11103
Proj_Idaho_CS83_East =	11131
Proj_Idaho_CS83_Central =	11132
Proj_Idaho_CS83_West =	11133
Proj_Illinois_CS27_East =	11201
Proj_Illinois_CS27_West =	11202
Proj_Illinois_CS83_East =	11231
Proj_Illinois_CS83_West =	11232
Proj_Indiana_CS27_East =	11301
Proj_Indiana_CS27_West =	11302
Proj_Indiana_CS83_East =	11331
Proj_Indiana_CS83_West =	11332
Proj_Iowa_CS27_North =	11401
Proj_Iowa_CS27_South =	11402
Proj_Iowa_CS83_North =	11431

Proj_Iowa_CS83_South =	11432
Proj_Kansas_CS27_North =	11501
Proj_Kansas_CS27_South =	11502
Proj_Kansas_CS83_North =	11531
Proj_Kansas_CS83_South =	11532
Proj_Kentucky_CS27_North =	11601
Proj_Kentucky_CS27_South =	11602
Proj_Kentucky_CS83_North =	11631
Proj_Kentucky_CS83_South =	11632
Proj_Louisiana_CS27_North =	11701
Proj_Louisiana_CS27_South =	11702
Proj_Louisiana_CS83_North =	11731
Proj_Louisiana_CS83_South =	11732
Proj_Maine_CS27_East =	11801
Proj_Maine_CS27_West =	11802
Proj_Maine_CS83_East =	11831
Proj_Maine_CS83_West =	11832
Proj_Maryland_CS27 =	11900
Proj_Maryland_CS83 =	11930
Proj_Massachusetts_CS27_Mainland =	12001
Proj_Massachusetts_CS27_Island =	12002
Proj_Massachusetts_CS83_Mainland =	12031
Proj_Massachusetts_CS83_Island =	12032
Proj_Michigan_State_Plane_East =	12101
Proj_Michigan_State_Plane_Old_Central =	12102
Proj_Michigan_State_Plane_West =	12103
Proj_Michigan_CS27_North =	12111
Proj_Michigan_CS27_Central =	12112
Proj_Michigan_CS27_South =	12113
Proj_Michigan_CS83_North =	12141
Proj_Michigan_CS83_Central =	12142
Proj_Michigan_CS83_South =	12143
Proj_Minnesota_CS27_North =	12201
Proj_Minnesota_CS27_Central =	12202
Proj_Minnesota_CS27_South =	12203
Proj_Minnesota_CS83_North =	12231
Proj_Minnesota_CS83_Central =	12232
Proj_Minnesota_CS83_South =	12233
Proj_Mississippi_CS27_East =	12301
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Proj_Mississippi_CS83_East =	12331
Proj_Mississippi_CS83_West =	12332
Proj_Missouri_CS27_East =	12401
Proj_Missouri_CS27_Central =	12402
Proj_Missouri_CS27_West =	12403
Proj_Missouri_CS83_East =	12431
Proj_Missouri_CS83_Central =	12432
Proj_Missouri_CS83_West =	12433
Proj_Montana_CS27_North =	12501
Proj_Montana_CS27_Central =	12502
Proj_Montana_CS27_South =	12503

Proj_Montana_CS83 =	12530
Proj_Nebraska_CS27_North =	12601
Proj_Nebraska_CS27_South =	12602
Proj_Nebraska_CS83 =	12630
Proj_Nevada_CS27_East =	12701
Proj_Nevada_CS27_Central =	12702
Proj_Nevada_CS27_West =	12703
Proj_Nevada_CS83_East =	12731
Proj_Nevada_CS83_Central =	12732
Proj_Nevada_CS83_West =	12733
Proj_New_Hampshire_CS27 =	12800
Proj_New_Hampshire_CS83 =	12830
Proj_New_Jersey_CS27 =	12900
Proj_New_Jersey_CS83 =	12930
Proj_New_Mexico_CS27_East =	13001
Proj_New_Mexico_CS27_Central =	13002
Proj_New_Mexico_CS27_West =	13003
Proj_New_Mexico_CS83_East =	13031
Proj_New_Mexico_CS83_Central =	13032
Proj_New_Mexico_CS83_West =	13033
Proj_New_York_CS27_East =	13101
Proj_New_York_CS27_Central =	13102
Proj_New_York_CS27_West =	13103
Proj_New_York_CS27_Long_Island =	13104
Proj_New_York_CS83_East =	13131
Proj_New_York_CS83_Central =	13132
Proj_New_York_CS83_West =	13133
Proj_New_York_CS83_Long_Island =	13134
Proj_North_Carolina_CS27 =	13200
Proj_North_Carolina_CS83 =	13230
Proj_North_Dakota_CS27_North =	13301
Proj_North_Dakota_CS27_South =	13302
Proj_North_Dakota_CS83_North =	13331
Proj_North_Dakota_CS83_South =	13332
Proj_Ohio_CS27_North =	13401
Proj_Ohio_CS27_South =	13402
Proj_Ohio_CS83_North =	13431
Proj_Ohio_CS83_South =	13432
Proj_Oklahoma_CS27_North =	13501
Proj_Oklahoma_CS27_South =	13502
Proj_Oklahoma_CS83_North =	13531
Proj_Oklahoma_CS83_South =	13532
Proj_Oregon_CS27_North =	13601
Proj_Oregon_CS27_South =	13602
Proj_Oregon_CS83_North =	13631
Proj_Oregon_CS83_South =	13632
Proj_Pennsylvania_CS27_North =	13701
Proj_Pennsylvania_CS27_South =	13702
Proj_Pennsylvania_CS83_North =	13731
Proj_Pennsylvania_CS83_South =	13732
Proj_Rhode_Island_CS27 =	13800

Proj_Rhode_Island_CS83 =	13830
Proj_South_Carolina_CS27_North =	13901
Proj_South_Carolina_CS27_South =	13902
Proj_South_Carolina_CS83 =	13930
Proj_South_Dakota_CS27_North =	14001
Proj_South_Dakota_CS27_South =	14002
Proj_South_Dakota_CS83_North =	14031
Proj_South_Dakota_CS83_South =	14032
Proj_Tennessee_CS27 =	14100
Proj_Tennessee_CS83 =	14130
Proj_Texas_CS27_North =	14201
Proj_Texas_CS27_North_Central =	14202
Proj_Texas_CS27_Central =	14203
Proj_Texas_CS27_South_Central =	14204
Proj_Texas_CS27_South =	14205
Proj_Texas_CS83_North =	14231
Proj_Texas_CS83_North_Central =	14232
Proj_Texas_CS83_Central =	14233
Proj_Texas_CS83_South_Central =	14234
Proj_Texas_CS83_South =	14235
Proj_Utah_CS27_North =	14301
Proj_Utah_CS27_Central =	14302
Proj_Utah_CS27_South =	14303
Proj_Utah_CS83_North =	14331
Proj_Utah_CS83_Central =	14332
Proj_Utah_CS83_South =	14333
Proj_Vermont_CS27 =	14400
Proj_Vermont_CS83 =	14430
Proj_Virginia_CS27_North =	14501
Proj_Virginia_CS27_South =	14502
Proj_Virginia_CS83_North =	14531
Proj_Virginia_CS83_South =	14532
Proj_Washington_CS27_North =	14601
Proj_Washington_CS27_South =	14602
Proj_Washington_CS83_North =	14631
Proj_Washington_CS83_South =	14632
Proj_West_Virginia_CS27_North =	14701
Proj_West_Virginia_CS27_South =	14702
Proj_West_Virginia_CS83_North =	14731
Proj_West_Virginia_CS83_South =	14732
Proj_Wisconsin_CS27_North =	14801
Proj_Wisconsin_CS27_Central =	14802
Proj_Wisconsin_CS27_South =	14803
Proj_Wisconsin_CS83_North =	14831
Proj_Wisconsin_CS83_Central =	14832
Proj_Wisconsin_CS83_South =	14833
Proj_Wyoming_CS27_East =	14901
Proj_Wyoming_CS27_East_Central =	14902
Proj_Wyoming_CS27_West_Central =	14903
Proj_Wyoming_CS27_West =	14904
Proj_Wyoming_CS83_East =	14931

Proj_Wyoming_CS83_East_Central =	14932
Proj_Wyoming_CS83_West_Central =	14933
Proj_Wyoming_CS83_West =	14934
Proj_Alaska_CS27_1 =	15001
Proj_Alaska_CS27_2 =	15002
Proj_Alaska_CS27_3 =	15003
Proj_Alaska_CS27_4 =	15004
Proj_Alaska_CS27_5 =	15005
Proj_Alaska_CS27_6 =	15006
Proj_Alaska_CS27_7 =	15007
Proj_Alaska_CS27_8 =	15008
Proj_Alaska_CS27_9 =	15009
Proj_Alaska_CS27_10 =	15010
Proj_Alaska_CS83_1 =	15031
Proj_Alaska_CS83_2 =	15032
Proj_Alaska_CS83_3 =	15033
Proj_Alaska_CS83_4 =	15034
Proj_Alaska_CS83_5 =	15035
Proj_Alaska_CS83_6 =	15036
Proj_Alaska_CS83_7 =	15037
Proj_Alaska_CS83_8 =	15038
Proj_Alaska_CS83_9 =	15039
Proj_Alaska_CS83_10 =	15040
Proj_Hawaii_CS27_1 =	15101
Proj_Hawaii_CS27_2 =	15102
Proj_Hawaii_CS27_3 =	15103
Proj_Hawaii_CS27_4 =	15104
Proj_Hawaii_CS27_5 =	15105
Proj_Hawaii_CS83_1 =	15131
Proj_Hawaii_CS83_2 =	15132
Proj_Hawaii_CS83_3 =	15133
Proj_Hawaii_CS83_4 =	15134
Proj_Hawaii_CS83_5 =	15135
Proj_Puerto_Rico_CS27 =	15201
Proj_St_Croix =	15202
Proj_Puerto_Rico_Virgin_Is =	15230
Proj_BLM_14N_feet =	15914
Proj_BLM_15N_feet =	15915
Proj_BLM_16N_feet =	15916
Proj_BLM_17N_feet =	15917
Proj_Map_Grid_of_Australia_48 =	17348
Proj_Map_Grid_of_Australia_49 =	17349
Proj_Map_Grid_of_Australia_50 =	17350
Proj_Map_Grid_of_Australia_51 =	17351
Proj_Map_Grid_of_Australia_52 =	17352
Proj_Map_Grid_of_Australia_53 =	17353
Proj_Map_Grid_of_Australia_54 =	17354
Proj_Map_Grid_of_Australia_55 =	17355
Proj_Map_Grid_of_Australia_56 =	17356
Proj_Map_Grid_of_Australia_57 =	17357
Proj_Map_Grid_of_Australia_58 =	17358

Proj_Australian_Map_Grid_48 =	17448
Proj_Australian_Map_Grid_49 =	17449
Proj_Australian_Map_Grid_50 =	17450
Proj_Australian_Map_Grid_51 =	17451
Proj_Australian_Map_Grid_52 =	17452
Proj_Australian_Map_Grid_53 =	17453
Proj_Australian_Map_Grid_54 =	17454
Proj_Australian_Map_Grid_55 =	17455
Proj_Australian_Map_Grid_56 =	17456
Proj_Australian_Map_Grid_57 =	17457
Proj_Australian_Map_Grid_58 =	17458
Proj_Argentina_1 =	18031
Proj_Argentina_2 =	18032
Proj_Argentina_3 =	18033
Proj_Argentina_4 =	18034
Proj_Argentina_5 =	18035
Proj_Argentina_6 =	18036
Proj_Argentina_7 =	18037
Proj_Colombia_3W =	18051
Proj_Colombia_Bogota =	18052
Proj_Colombia_3E =	18053
Proj_Colombia_6E =	18054
Proj_Egypt_Red_Belt =	18072
Proj_Egypt_Purple_Belt =	18073
Proj_Extended_Purple_Belt =	18074
Proj_New_Zealand_North_Island_Nat_Grid =	18141
Proj_New_Zealand_South_Island_Nat_Grid =	18142
Proj_Bahrain_Grid =	19900
Proj_Netherlands_E_Indies_Equatorial =	19905
Proj_RSO_Borneo =	19912

6.3.3.3 Coordinate Transformation Codes

Ranges:

0	= undefined
[1, 16383]	= GeoTIFF Coordinate Transformation codes
[16384, 32766]	= Reserved by GeoTIFF
32767	= user-defined
[32768, 65535]	= Private User Implementations

Values:

CT_TransverseMercator =	1
CT_TransvMercator_Modified_Alaska =	2
CT_ObliqueMercator =	3
CT_ObliqueMercator_Laborde =	4
CT_ObliqueMercator_Rosenmund =	5
CT_ObliqueMercator_Spherical =	6
CT_Mercator =	7
CT_LambertConfConic_2SP =	8
CT_LambertConfConic_Helmert =	9
CT_LambertAzimEqualArea =	10
CT_AlbersEqualArea =	11
CT_AzimuthalEquidistant =	12
CT_EquidistantConic =	13
CT_Stereographic =	14
CT_PolarStereographic =	15
CT_ObliqueStereographic =	16
CT_Equirectangular =	17
CT_CassiniSoldner =	18
CT_Gnomonic =	19
CT_MillerCylindrical =	20
CT_Orthographic =	21
CT_Polyconic =	22
CT_Robinson =	23
CT_Sinusoidal =	24
CT_VanDerGrinten =	25
CT_NewZealandMapGrid =	26
CT_TransvMercator_SouthOriented=	27

Aliases:

CT_AlaskaConformal =	CT_TransvMercator_Modified_Alaska
CT_TransvEquidistCylindrical =	CT_CassiniSoldner
CT_ObliqueMercator_Hotine =	CT_ObliqueMercator
CT_SwissObliqueCylindrical =	CT_ObliqueMercator_Rosenmund
CT_GaussBoaga =	CT_TransverseMercator
CT_GaussKruger =	CT_TransverseMercator
CT_LambertConfConic =	CT_LambertConfConic_2SP
CT_LambertConfConic_Helmert =	CT_LambertConfConic_1SP

CT_SouthOrientedGaussConformal =

CT_TransvMercator_SouthOriented

6.3.4 Vertical CS Codes

6.3.4.1 Vertical CS Type Codes

Ranges:

0	= undefined
[1, 4999]	= Reserved
[5000, 5099]	= EPSG Ellipsoid Vertical CS Codes
[5100, 5199]	= EPSG Orthometric Vertical CS Codes
[5200, 5999]	= Reserved EPSG
[6000, 32766]	= Reserved
32767	= user-defined
[32768, 65535]	= Private User Implementations

Values:

VertCS_Airy_1830_ellipsoid =	5001
VertCS_Airy_Modified_1849_ellipsoid =	5002
VertCS_ANS_ellipsoid =	5003
VertCS_Bessel_1841_ellipsoid =	5004
VertCS_Bessel_Modified_ellipsoid =	5005
VertCS_Bessel_Namibia_ellipsoid =	5006
VertCS_Clarke_1858_ellipsoid =	5007
VertCS_Clarke_1866_ellipsoid =	5008
VertCS_Clarke_1880_Benoit_ellipsoid =	5010
VertCS_Clarke_1880_IGN_ellipsoid =	5011
VertCS_Clarke_1880_RGS_ellipsoid =	5012
VertCS_Clarke_1880_Arc_ellipsoid =	5013
VertCS_Clarke_1880_SGA_1922_ellipsoid =	5014
VertCS_Everest_1830_1937_Adjustment_ellipsoid =	5015
VertCS_Everest_1830_1967_Definition_ellipsoid =	5016
VertCS_Everest_1830_1975_Definition_ellipsoid =	5017
VertCS_Everest_1830_Modified_ellipsoid =	5018
VertCS_GRS_1980_ellipsoid =	5019
VertCS_Helmert_1906_ellipsoid =	5020
VertCS_INS_ellipsoid =	5021
VertCS_International_1924_ellipsoid =	5022
VertCS_International_1967_ellipsoid =	5023
VertCS_Krassowsky_1940_ellipsoid =	5024
VertCS_NWL_9D_ellipsoid =	5025
VertCS_NWL_10D_ellipsoid =	5026
VertCS_Plessis_1817_ellipsoid =	5027
VertCS_Struve_1860_ellipsoid =	5028
VertCS_War_Office_ellipsoid =	5029
VertCS_WGS_84_ellipsoid =	5030
VertCS_GEM_10C_ellipsoid =	5031
VertCS_OSU86F_ellipsoid =	5032
VertCS_OSU91A_ellipsoid =	5033

Orthometric Vertical CS:

VertCS_Newlyn =	5101
VertCS_North_American_Vertical_Datum_1929 =	5102
VertCS_North_American_Vertical_Datum_1988 =	5103
VertCS_Yellow_Sea_1956 =	5104
VertCS_Baltic_Sea =	5105
VertCS_Caspian_Sea =	5106

6.3.4.2 Vertical CS Datum Codes

Ranges:

0	= undefined
[1, 16383]	= Vertical Datum Codes
[16384, 32766]	= Reserved
32767	= user-defined
[32768, 65535]	= Private User Implementations

No vertical datum codes are currently defined, other than those implied by the corresponding Vertical CS code.

6.4 EPSG Geodesy Parameter Index

Here is a summary of the index ranges for the various coding systems used by EPSG in their tables. A copy of this index may be acquired at the FTP sites mentioned in the references in section 5. The "value" table entries below describe how values from one table are related to codes from another table.

Summary

Entity	digit	Range
-----	-----	-----
Prime Meridian	8	8000 thru 8999
Ellipsoid	7	7000 thru 7999
Geodetic Datum	6	6000 thru 6999
Vertical datum	5	5000 thru 5999
Geographic Coordinate System	4	4000 thru 4999
Projected Coordinate Systems	2 or 3	20000 thru 32760
Map Projection	1	10000 - 19999

Geodetic Datum Codes

Datum Type	Value	Range	Currently Defined
-----	-----	-----	-----
Unspecified Geodetic Datum	[EC-1000]	6000 thru 6099	6001 thru 6035
Geodetic Datum		6100 thru 6321	6200 thru 6315
WGS 72; WGS 72BE and WGS84		6322 thru 6327	6322 thru 6327
Geodetic Datum (ancient)		6900 thru 6999	6901 thru 6902

Note for Values: EC = corresponding Ellipsoid Code.

Vertical Datum Codes

Datum Type	Value	Range	Currently Defined
-----	-----	-----	-----
Ellipsoidal	[EC-1000]	5000 thru 5099	5001 thru 5035
Orthometric		5100 thru 5899	5101 thru 5106

Note for Values: EC = corresponding Ellipsoid Code.

Geographic Coordinate System Codes

GCS Type	Value	Range	Currently Defined
Unknown geodetic datum	[GDC-2000]	4000 thru 4099	4001 thru 4045
Known datum (Greenwich)	[GDC-2000]	4100 thru 4321	4200 thru 4315
WGS 72; WGS 72BE and WGS84		4322 thru 4327	4322 thru 4327
Known datum (not Greenwich)		4800 thru 4899	4801 thru 4812
Known datum (ancient)	[GDC-2000]	4900 thru 4999	4901 thru 4902

Note for Values: GDC = corresponding Geodetic Datum Code

Map Projection System Codes

US State Plane (10000-15999)

Format: 1sszz

where ss is USC&GS State code 01 thru 59

zz is (USC&GS zone code) for NAD27 zones

zz is (USC&GS zone code + 30) for NAD83 zones

Larger zoned systems (16000-17999)

System	Format	zz	Range
UTM (North)	160zz	01	60
UTM (South)	161zz	01	60
zoned Universal Gauss-Kruger	62zz	04	32
Universal Gauss-Kruger (unzoned)	163zz	04	3
Australian Map Grid	174zz	48	58
Southern African STM	175zz	13	35

Smaller zoned systems (18000-18999)

Format: 18ssz

where ss is sequential system number 01 18

z is zone code

Single zone projections (19900-19999)

Format: 199ss

where ss is sequential system number 00 25

Projected Coordinate Systems

For PCS utilising GeogCS with code in range 4201 through 4321
(i.e. geodetic datum code 6201 through 6319):

As far as is possible the PCS code will be of the format
gggzz where ggg is (geodetic datum code -6000) and zz is zone.

For PCS utilising GeogCS with code out of range 4201 through 4321
(i.e. geodetic datum code 6201 through 6319):

PCS code 20xxx where xxx is a sequential number

WGS72 / UTM North	322zz where zz is UTM zone number	32201	32260
WGS72 / UTM South	323zz where zz is UTM zone number	32301	32360
WGS72BE / UTM North	324zz where zz is UTM zone number	32401	32460
WGS72BE / UTM South	325zz where zz is UTM zone number	32501	32560
WGS84 / UTM North	326zz where zz is UTM zone number	32601	32660
WGS84 / UTM South	327zz where zz is UTM zone number	32701	32760
US State Plane (NAD27)	267xx or 320xx where xx is a sequential number		
US State Plane (NAD83)	269xx or 321xx where xx is a sequential number		