**7 Glossary**

ASCII: [American Standard Code for Information Interchange] The predominant character set encoding of present-day computers.

Cell: A rectangular area in Raster space, in which a single pixel value is filled.

Code: In GeoTIFF, a code is a value assigned to a GeoKey, and has one of 65536 possible values.

Coordinate System: A systematic way of assigning real (x,y,z..) coordinates to a surface or volume. In Geodetics the surface is an ellipsoid used to model the earth:

**TC211 set of mathematical rules for specifying how coordinates are to be assigned to points**

Datum: a mathematical approximation to all or part of the earth's surface. Defining a datum requires the definition of an ellipsoid, its location and orientation, as well as the area for which the datum is valid.

**TC211: parameter or set of parameters that define the position of the origin, the scale, and the orientation of a coordinate system**

Device Space: A coordinate space referencing scanner, printers and display devices.

DOUBLE: 8-byte IEEE double precision floating point.

Ellipsoid: A mathematically defined quadratic surface used to model the earth.

**TC211: surface formed by the rotation of an ellipse about a main axis**

EPSG: European Petroleum Survey Group.

Flattening: For an ellipsoid with major and minor axis lengths (a,b), the flattening is defined by:,

f = (a - b)/a For the earth, the value of f is approximately 1/298.3

**TC211: ratio of the difference between the semi-major (a) and semi-minor axis (b) of an ellipsoid to the semi-major axis; f = (a - b)/a**

Geocoding: An image is geocoded if a precise algorithm for determining the earth-location of each point in the image is defined.

**TC211: translation of one form of location into another**

Geographic Coordinate System: A Geographic CS consists of a well-defined ellipsoidal datum, a Prime Meridian, and an angular unit, allowing the assignment of a Latitude-Longitude (and optionally, geodetic height) vector to a location on earth.

GeoKey: In GeoTIFF, a GeoKey is equivalent in function to a TIFF tag, but uses a different storage mechanism.

Georeferencing: An image is georeferenced if the location of its pixels in some model space is defined, but the transformation tying model space to the earth is not known.

**TC211: geopositioning an object using a Correspondence Model derived from a set of points for which both ground and image coordinates are known**

GeoTIFF: A standard for storing georeference and geocoding information in a TIFF 6.0 compliant raster file.

Grid: A coordinate mesh upon which pixels are placed

**TC211: network composed of two or more sets of curves in which the members of each set intersect the members of the other sets in an algorithmic way**

IEEE: Institute of Electrical and Electronics Engineers, Inc.

IFD: In TIFF format, an Image File Directory, containing all the TIFF tags for one image in the file (there may be more than one).

Meridian: Arc of constant longitude, passing through the poles.

**TC211: intersection of an ellipsoid by a plane containing the shortest axis of the ellipsoid**

Model Space A flat geometrical space used to model a portion of the earth.

Parallel: Lines of constant latitude, parallel to the equator.

Pixel: A dimensionless point-measurement, stored in a raster file.

**TC211: smallest element of a digital image to which attributes are assigned**

POSC: Petrotechnical Open Software Corporation.

Prime Meridian: An arbitrarily chosen meridian, used as reference for all others, and defined as 0 degrees longitude.

**TC211: meridian from which the longitudes of other meridians are quantified**

Projection: A projection in GeoTIFF consists of a linear (X,Y) coordinate system, and a coordinate transformation method (such as Transverse Mercator) to tie this system to an unspecified Geographic CS.

Projected Coordinate System: The result of the application of a projection transformation of a Geographic coordinate system.

**TC211: coordinate reference system derived from a two-dimensional geodetic coordinate reference system by applying a map projection**

Raster Space: A continuous planar space in which pixel values are visually realized.

RATIONAL: In TIFF format, a RATIONAL value is a fractional value represented by the ratio of two unsigned 4-byte integers.

SDTS: The USGS Spatial Data Transmission Standard.

Tag: In TIFF format, a tag is packet of numerical or ASCII values, which have a numerical "Tag" ID indicating their information content.

TIFF: Acronym for Tagged Image File Format; a platform-independent, extensive specification for storing raster data and ancillary information in a single file.

USGS: US Geological Survey