

## Portion of .DOC File - CORPSCON 4.1

### 1. General.

(1) The National Geodetic Survey has developed two programs called NADCON (North American Datum Conversion) and VERTCON (Vertical Conversion) to provide consistent results when converting to and from North American Datum of 1983 (NAD 83) and North American Vertical Datum of 1988 (NAVD 88). The technique used in NADCON is based on a bi-harmonic equation classically used to model plate deflections. Both NADCON and VERTCON work exclusively in geographical coordinates (Latitude/Longitude). For information on the accuracies of VERTCON refer to Appendix A.

(2) The U.S. Army Topographic Engineering Center (TEC) created a more comprehensive program called CORPSCON (Corps Convert), which is based on NADCON and VERTCON. In addition to transformations between NAD 83 and North American Datum of 1927 (NAD 27) geographical coordinates, CORPSCON also converts between State Plane Coordinates Systems (SPCS), Universal Transverse Mercator (UTM) and geographical coordinates; thus eliminating several steps in the total process of converting between SPCS 27, SPCS 83, UTM 27, and UTM 83. Inputs can be in either geographic or SPCS/UTM coordinates (SPCS 27 X and Y or SPCS83 Northing and Easting). This program can also be used to convert between state plane, geographic, and UTM coordinates on the same datum. CORPSCON will convert orthometric heights in Geographic, State Plane and UTM coordinate systems.

(3) Conversions to or from State Plane Coordinates or UTM's on NAD 83 should be consistent with legislation as defined by state statute. As of the date of this document, 19 states have specified conversions:

U.S. Survey Foot - California, Connecticut, Indiana, Kentucky, Maryland, Massachusetts, Mississippi, New Mexico, North Carolina, Oklahoma, Tennessee, Texas, and Washington.

International Survey Foot - Arizona, Colorado, Michigan, Montana, Oregon, and South Carolina.

(4) Corpscon, Version 4.1, does not perform conversions based on High Accuracy Regional Networks (HARN's). Users must obtain NADCON, Version 2.10 to compute conversions between NAD 27/NAD 83 and these networks. Contact the National Geodetic Survey, as listed in paragraph 2, to obtain NADCON or further assistance with HARN's.

(5) The Federal Geodetic Control Subcommittee (FGCS) has adopted NAD 83 as the official horizontal datum for U.S. surveying and mapping activities performed or financed by the Federal Government. The FGCS also stated that, NADCON will be the standard conversion method for all mathematical transformations between NAD 83 and NAD 27. For further information reference Engineer Technical Letter No. 1110-1-147, Engineering and Design Conversion to North American Datum of 1983, dated March 5, 1990.

(6) The Federal Geodetic Control Subcommittee (FGCS) of the Federal Geographic Data Committee (FGDC) has affirmed that NAVD88 shall be the official vertical reference datum for the United States. For further information reference Engineer Technical Letter No. 1110-1-152, Conversion to the North American Vertical Datum of 1988, dated July 31, 1994.

Copies of the software are available from the Internet. The software is available, via anonymous ftp, from

<ftp://survey1.tec.army.mil/pub/software/corpscon.410>.

If problems with the program are encountered, contact:

Director  
U.S. Army Topographic Engineering Center  
ATTN: CETEC-TD-GS, (Reference CORPSCON)  
Alexandria, VA 22315-3864  
(703) 355-2766 E-mail: [jrubby@tec.army.mil](mailto:jruby@tec.army.mil)