

Press Release

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RE: Publication of book - "The 3-D Global Spatial Data Model"

A book, *The 3-D Global Spatial Data Model (GSDM): Foundation of the Spatial Data Infrastructure* was written by Earl F. Burkholder and published in April 2008 by CRC Press. It is for sale by CRC Press for \$119.95 or it can be purchased for less from various web sources such as Barnes & Noble or Amazon.com.

The book should be of interest to anyone who uses spatial data as related to surveying, mapping, photogrammetry, engineering, or navigation – especially in the context of geographic information systems (GIS) or global positioning systems (GPS). In the past, maps were drawn on paper and stored in a flat file. But, no more. As a consequence of the digital revolution, spatial data are now stored electronically and characterized as digital and 3-D. Many persons (both novice and expert) routinely use digital spatial data.

The book is intended to be used as a college textbook, as a reference for spatial data applications, or in self-study by persons in various disciplines. Although the first two chapters are not easy reading, chapter 3 is really the comfortable place to start because it includes a review of basic mathematics and geometry related to surveying and mapping. Subsequent chapters build on that foundation and include topics of spatial data models, geometrical geodesy, physical geodesy, geodetic datums, satellite positioning, map projections, and error propagation.

The fundamental premise for the GSDM is that 3-D geospatial data are referenced to a single origin and that location anywhere on (or near) the Earth is defined in terms of rectangular Earth-centered Earth-fixed (ECEF) coordinates as defined by the U.S. DOD for tracking the GPS satellites. The GSDM enhances interoperability between disciplines worldwide because rules of solid geometry and vector algebra are applicable throughout.

The GSDM could be considered impractical because it goes beyond current practices of using separate origins for horizontal and vertical geospatial data. With that admission, the strengths of the GSDM are that it is applicable worldwide, rectangular 3-D coordinate differences are easier to use than traditional geodesy equations, and the GSDM supports a concise definition of spatial data accuracy.

Earl F. Burkholder is a New Mexico licensed professional surveyor (PS) and professional engineer (PE) who teaches in the Surveying Engineering Program at New Mexico State University (NMSU). He is also President of Global COGO, Inc., a corporation formed to promote development and implementation of the GSDM. Additional information is posted on the Global COGO web site, www.globalcogo.com.