

Are You a Competent Geospatial Professional? How Do You Know?

By [Joe Francica](#)

(Mar 25, 2010)

I recently spent a week helping to develop the Geospatial Technology Competency Model (GTCM). What is it and why should you care? The GTCM defines the core competencies and skill sets that every person working in the geospatial profession should possess. The ramifications will be manifold, but primarily the model will support the efforts of two organizations. The U.S. Department of Labor (DoL) will use it to support and promote the geospatial profession by listing these competencies and bringing them in line with job classifications that have already been established. The model will also support the efforts of the [National Geospatial Technology Center of Excellence](#) at Del Mar College in Corpus Christi, TX, which is a National Science Foundation Advanced Technology Education center. This center is funding the development of the GTCM. The mission of the GeoTech Center, as it is known, is to provide educators at two-year colleges and four-year universities the ability to develop curricula for establishing the proficiencies required of students seeking certificates and degrees in GIS from these institutions.



In general, the DoL uses competency models to identify the knowledge, skills and abilities needed by workers throughout an industry and within each industry sector. The DoL's [CareerOneStop](#) includes competency models for many industries, from bioscience to construction to information technology. But since 2003, when the [DoL identified the geospatial industry](#) as one of the key technology sectors, little has been done to identify or elucidate geospatial skill sets. David DiBiase, of The Pennsylvania State University, facilitated the workshop I attended. He explained, "The Geospatial Technology Competency Model has been in the works since 2001 but remains incomplete; consensus has been elusive about the nature of the geospatial industry and the know-how it requires. ... There has been a longstanding need to articulate what the industry needs on a day-to-day basis for employees to complete work assignments. [In addition] there has never been the connection or basis for educational departments to review that what they teach is commensurate with the needs of employers."

How does the effort to create a GTCM relate to the guidelines issued by the GIS Certification Institute (GISCI), which are required to be certified as a [GISP](#), a GIS professional? Those pursuing a GISP gather materials into a portfolio detailing educational achievement, professional experience and service to the geospatial community, which is sent to the governing body for approval. But the certificate is issued without an exam. Why? There has never been a competency model with a sufficient level of detail to specify the job functions that fall under each job. The GTCM will hopefully be used to more thoroughly stipulate job functions and occupations, so an exam could be created for certification.

It is also useful to understand the relationship between the GTCM and the [Geospatial Body of Knowledge](#) (BoK) produced by the University Consortium for Geographic Information Science (UCGIS) in 2006. The Geospatial BoK is an exhaustive listing of formal educational objectives related to geospatial information science. The GTCM is more generalized and tries to focus on those competencies and tasks that a geospatial professional may encounter over the span of a career. For example, an individual's proficiency in geospatial technology should serve him or her in many occupations, whether he becomes a GIS technologist knowledgeable in a specific GIS software solution or decides to specialize in a specific discipline or domain like forestry or urban planning.

Another important use of the GTCM is to be able to position geospatial technology relative to other professions. Little has been done, for example, in understanding the crossover between occupations

like GIS and the biosciences. Each profession may possess certain core competencies similar to the other, but without the GTCM there is little basis for this type of appreciation or correlation.

The creation of the GTCM goes to the heart of what has been missing from GIS since there were enough of us to have a profession called GIS. We could never truly articulate what we did every day when we went to work. We could never put ourselves into job classification "buckets" that allowed employers to associate a job with a job skill set. It is important now for the Department of Labor to articulate both the demand for geospatial professionals and the skill sets that make those professionals qualified to do the job. This will help to develop the workforce necessary to meet the demands in this industry, which spans broad applications from military intelligence to location-based mobile applications.

The committee will complete the GTCM very soon with input from various geospatial technology organizations. The GTCM is scheduled to be submitted to the DoL by this summer.

To send feedback about the efforts of the GTCM working group, send an [email](#) to David DiBiase.

Reprinted with permission, Copyright 2010, Directions Media