Fundamentals: Coordinate Systems and Datum Transformations in Action

Goals of the workshop

- Understand coordinate systems.
- Understand how the spatial reference works in the geodatabase.

Major topics covered

- Geographic versus projected coordinate systems
- The spatial reference
- Identifying an unknown coordinate system (also see related demonstration below)
- Picking a geographic/datum transformation

Demonstrations will include

- Comparing different coordinate systems with ArcMap
- Explaining how the 'prj' files are organized in ArcGIS Desktop
- Choosing an appropriate geographic transformation
- Comparing different distance measurements in ArcMap

Related sessions

NOTE: Some may occur before this session

Tuesday, 10:15AM – 11:30AM: Coordinate Systems and Datum Transformations in Action. In SDCC Room 6F.

Wednesday, 10:00AM – 12:00PM: Meet the map projection team at the Geodatabase Management island in Hall C.

Wednesday, 1:30PM – 1:50PM: *Why my data doesn't line up*. In SDCC Room 6A. Techniques for working with data that doesn't line up.

Wednesday, 3:15PM – 4:30PM: Coordinate Systems and Datum Transformations in Action. In SDCC Room 6F. Second presentation

Reference Material

Flacke & Kraus. *Coordinate Systems in ArcGIS*
Elithorp & Findorff. *Geodesy for Geomatics and GIS Professionals*
Snyder & Voxland. *An Album of Map Projections*. **USGS PP 1453** (http://infotrek.er.usgs.gov/pubs)
Iliffe. *Datums and Map Projections*
Maher. *Lining Up Data in ArcGIS*
Meyer. *Introduction to Geometrical and Physical Geodesy*

Knowledge Base articles at http://support.esri.com (enter the ID numbers as a search term)

- **23025, 29129, 24893, 29035, 17420**

http://www.epsg.org and *http://www.epsg-registry.org*

- Database of coordinate systems and datums
  Guidance Notes