



**US Army Corps  
of Engineers®**

Engineer Research and  
Development Center

# Engineering Route Study

---

**Problem** Army and other Department of Defense (DoD) contingency planners who respond to crisis events or other international situations requiring U.S. involvement have critical, immediate needs for basic country-scale information on major surface transportation systems in conjunction with terrain, environmental, and climate data.

**Description of Research** The Engineering Route Study (ERS) produces country-scale graphic images designed to provide basic information. Highway system information includes road classification such as expressway, all-weather or fair-weather, surface type (such as hard or loose surface), and distance in kilometers. The ERS graphic can include steep grades, sharp curves, ferry locations, key bridges and tunnels, border stations, and other man-made or environmental hazards affecting the major transportation routes. Other transportation systems delineated includes C-130 capable airfields, strategic sealift capable ports, and major railroad lines. Terrain and environmental data include key streams and rivers, surface configuration (plains, hills, or mountains), areas of potential flooding and landslides, and descriptions of drainage and climate data.

ERS products are standalone graphic images produced using ArcView and ArcGIS. The base map is created using VMAP level 0 or 1 data. Transportation information comes from a variety of data sources including native and commercial maps, U.S. Government and international intelligence sources, imagery, and other open sources. Surface Configuration is derived from Digital Terrain Elevation Data (DTED) or GTOPO30 data (a global digital elevation model [DEM] with a horizontal grid spacing of 30 arc seconds [approx. 1 km]). Individual themes or layers are available for some studies. During FY04, production switched from ArcView to ArcGIS.

**Expected Products** The ERS produces country-scale graphic images designed to provide basic information on the major surface transportation systems in conjunction with terrain, environmental, and climate data. As of 30 May 2005, completed Engineering Route Studies cover 112 nations, territories, and regions.

**Potential Users** The ERS country-scale graphic images are unclassified, but designated for “Official Use Only.” Their use is restricted to Army and other DoD contingency planners who respond to crisis events or other international situations requiring U.S. involvement.

**Projected Benefits** Users can apply ERS data to their specific needs. ERS images provide data at the country or operational level to assist the Warfighter in planning a variety of missions including military operations, humanitarian relief, transportation studies, and drug enforcement.

**Program Manager** Gregory Jameson, Team Leader, CEERD-TO-T, Topographic Engineering Center (TEC), 7701 Telegraph Road, Alexandria, VA 22315-3864, COMM: (703) 428-7247, or e-mail:

[Gregory.H.Jameson@usace.army.smil.mil](mailto:Gregory.H.Jameson@usace.army.smil.mil)

**Participating ERDC Laboratory** Topographic Engineering Center (TEC)