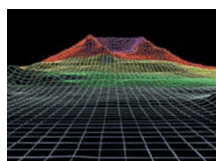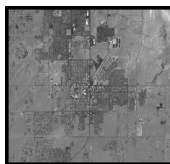# Common Geospatial Terms

CADRG – Compressed Arc Digitized Raster Graphic — digital map background display used in mission command systems.

CIB — Controlled Image Base — CIB 1 (1m resolution); CIB 5 (5m resolution). Think imagery.

DEM – Digital Elevation Model — Implies "bare earth" elevation data set

DSM – Digital Surface Model — Implies reflective surface elevation data set (e.g., "tree-top").

DTED – Digital Terrain Elevation Data — an NGA standard/format for elevation data.

Feature Data — The organized and categorized collection of object(s) in a landscape or on a map. Features are usually depicted in data layers and/or sets and comprised of point(s), line(s), or polygon(s) that represent a geographic object. An associated term is vector data.
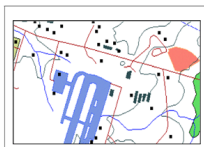

Figure 2-10. Vector Feature Data

GEOINT — Geospatial Intelligence — The exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. GEOINT has a temporal aspect to it and is typically time sensitive. Think "what activity, specifically human activity, is going on at a particular location."

GI&S — Geospatial Information and Services — The collection, information extraction, storage, dissemination, and exploitation of geodetic, geomagnetic, imagery, gravimetric, aeronautical, topographic, hydrographic, littoral, cultural, and toponymical data accurately referenced to a precise location on the Earth's surface (JP 2-03). GI&S and/or geospatial data

SSGF — Standard & Shareable Geospatial Foundation is:

♦ #2 Cross Cutting Capability within Army Common Operating Environment (COE)

♦ Army Mission Command (MC) systems are all using the same map background and common data formats to achieve Common Operational Picture (COP)

♦ Improves ability to manage and update geospatial foundation data in the field as needed

♦ Synch geospatial data and products across the operational environment

Army Geospatial Resources:

The Army has geospatial engineers at tactical thru strategic levels. These geospatial engineers are capable of providing both standard and custom geospatial products. Custom products typically require additional production time so request geospatial products early in the planning process. Most geospatial engineers reside within the G/J/S2 section, but could reside elsewhere within the staff. Geospatial engineers can provide unclassified and classified products.

Strategic Level:
Geospatial Planning Cells (GPC) are aligned with each ASCC. The GPCs manage the theater geospatial database for the COCOM AOR and are the only team/echelon that can generate geospatial data for the warfighter.

Operational Level:
US Army CORPs and DIVs have a Geospatial Engineer Team (GET) consisting of 1x125D and 6-8x12Y Geospatial Engineers.

Tactical Level:
Maneuver (ABCT, IBCT, SBCT) and Sustainment BDEs have a Geospatial Engineer Team (GET) consisting of 1x125D and 3x12Y Geospatial Engineers and 1x 35G Imagery Analyst.

Aviation and Fires BDEs have a Geospatial Engineer Team (GET) consisting of 4x12Y Geospatial Engineers.

EN BDEs have a Geospatial Engineer Team consisting of 1x125D and 7x12Y Geospatial Engineers.

SFABs have 2x12Y Geospatial Engineers assigned to them.

Army Engineer Web Resources:

Engineer School Knowledge Network — https://www.us.army.mil/suite/page/637460

Engineer Regiment's Resource Menu — https://www.milsuite.mil/book/groups/usaes-commandant-resource-menu

GEOINT Capability Development — https://www.milsuite.mil/book/groups/deliberate-geoint-dotmlpf

Army Geospatial Doctrine:
AR 115-11 Geospatial Information and Services
ATP 2-22.7 Geospatial Intelligence
ATP 3-34.80 Geospatial Engineering

TRADOC Capability Manager Geospatial

14010 MSCOE Loop, Suite 2691
Ft. Leonard Wood, MO 65473-8301

Director: (573) 563-8263
Deputy Director: (573) 563-8295
Chief, Geospatial Engineering: (573) 563-6213
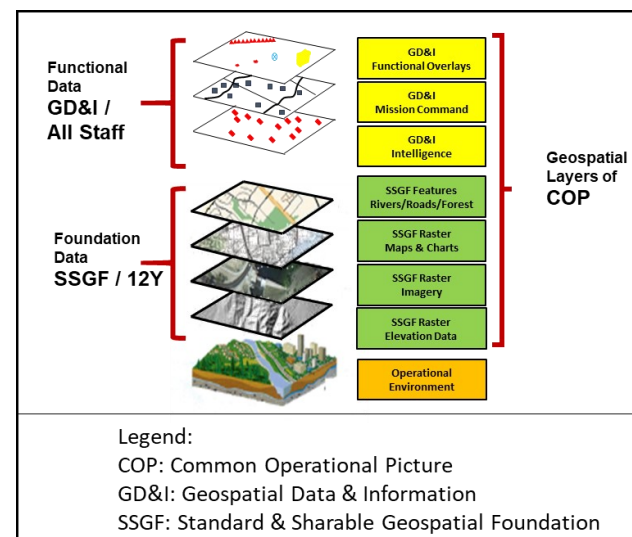GI&S Lab: (573) 563-1900

https://home.army.mil/wood/index.php/units-tenants/USAES/Orgs/TCM_GEO
Digital Version of this product available at:
https://www.ako1.us.army.mil/suite/portal.do?%24p=706531

Geospatial Information Overview and Links

TRADOC Capability Manager Geospatial, MSCoE, Fort Leonard Wood, MO

Legend:
COP: Common Operational Picture
GD&I: Geospatial Data & Information
SSGF: Standard & Sharable Geospatial Foundation

As masters of terrain, every US Army Engineer needs to know and be able to articulate the geospatial engineer capabilities that reside at echelon within the US Army. Additionally, being able to provide standard geospatial products to initial planning efforts greatly enhances a unit's ability to visualize and describe the terrain prior to having customized geospatial products on hand. This pamphlet provides basic information and resources to increase every individual's geospatial knowledge and capabilities.

Army Geospatial Center
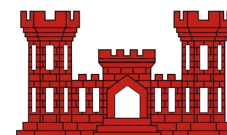
https://www.agc.army.mil (public site) https://cac.agc.army.mil/ (PKI site) provided links, as of September 2018

POC: Mr. Ken Bergman, U.S. Army Geospatial Center (AGC) Liaison to TCM Geospatial at Fort Leonard Wood, MO; ken.bergman@us.army.mil, 573-563-8284, DSN 676-8284

GeoPDF Adobe Acrobat Maps
- What is GeoPDF? https://cac.agc.army.mil/Products/MapArchive/index.cfm GeoPDF is an Adobe Acrobat format map with geocoordinates used for 2-D or 3D digital map displays. https://cac.agc.army.mil/Products/MapArchive/index.cfm

Urban Tactical Planner (UTP) and TerraExplorer (TE) Products (UTP-TE)
UTP is a 3-D fly-through for tactical level urban areas, with source data. It depicts urban terrain, including building types, and also shows selected feature names/annotations to include key buildings, schools, roads, vertical obstructions, etc. https://cac.agc.army.mil/Products/UTI/index.cfm

Wide Area Mapping (WAM) - Image Maps and High-resolution Elevation Data
Buckeye is a sensor suite that provides high resolution imagery and is being flown in multiple AORs to collect Unclassified/FOUO 4-inch resolution color image maps. https://cac.agc.army.mil/Products/BuckEye/index.cfm

Common Map Background (CMB)
CMB is a customized archive of NGA maps and image maps that provides the latest release from NGA. Other products can be loaded on the hard drive, to include UTP, Buckeye, and GeoPDF files. Request CMB for your AOR from the AGC, at https://agcwfs.agc.army.mil/CMB_Online/default.html

Engineering Route Studies
The Engineering Route Study is designed to provide basic information on the major surface transportation systems in conjunction with terrain and climate data. See https://cac.agc.army.mil/Products/EngineeringRouteStudies/index.cfm

AGE GeoGlobe
The Army Geospatial Enterprise (AGE) GeoGlobe is a 3D based visualization designed to find and download/request geospatial information/data. See https://cac.agc.army.mil/Products/geoglobe/index.cfm.

Well Drilling Locations; AGC Hydrologic Support
The Water Resources Data Base (WRDB) is the authoritative data source for OCONUS, land-based water resources information. https://cac.agc.army.mil/water/content/landing-page.html#top
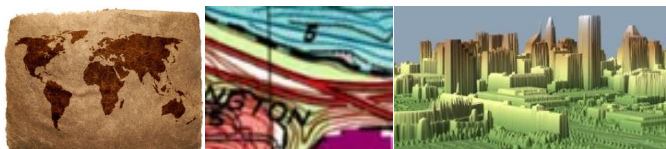
National Geospatial-Intelligence Agency (NGA) https://www.nga.mil, provided links as of August 2018

POC: Mr. Ralph Erwin, National Geospatial-Intelligence Agency (NGA) Liaison to the Combined Arms Center Fort Leavenworth, KS; ralph.m.erwin.civ@mail.mil, 913-684-3095

1. http://www.nga.mil – NGA's public page

2. https://map.nga.mil/index.html# - MoW – *Map of the World.* Use "non-Email" certificates. *

3. * https://pki.geo.nga.mil Allow 48 hours for approval for CAC-enabled, NGA PKI registered to access MoW portions. Will need unit *Security Manager*: email and phone number as well as approval from an NGA Representative (Find your NGA rep here: https://intellipedia.intelink.gov/wiki/Army_NGA_Support_Team#.28U.29_Army_NST_Locations)
   a. https://www1.geoint.nga.mil/ then MoW extensions: WMS, GDP, and more
   b. https://www.geointel.nga.mil/indexN.html An older web page with good links.
   c. https://ess.nga.mil/proxygxp/xplorer
   d. https://home.gvs.nga.mil/home/
   e. https://www1.geoint.nga.mil/Products/Aeronautical/Pages/default.aspx - Aeronautical products
   f. https://www1.geoint.nga.mil/Products/Maritime/Pages/default.aspx - Maritime products
   g. https://ngds.nga.mil Net-Centric Geospatial-Intelligence Discovery Service

4. https://apps.nga.mil/Home/Index - GEOINT App Store "Explore More" for downloadable Geospatial/Geoint APPS on your mobile and desktop devices – FIRST you must register with https://geoaxis.nga.mil

5. https://www.intelink.gov
   a. Download GEOINT Self-Service Discovery Kit https://go.intelink.gov/JapEWk1 tremendous links for a dedicated workstation.
   b. Country search

6. https://evwhs.digitalglobe.com/ CAC-enabled. One time registration.

7. https://www.pixtoday.net – Contact your NGA Field Representative to request an invitation (see #3).

8. http://nationalmap.gov – CONUS - "Find Data + View & Download" "Maps" "Download Maps"
   a. https://www.youtube.com/watch?v=ISzUllNbB4o Introduction to The National Map. (may be out of date)
   b. Zoom into your area of interest – now a "map extent"
   c. Find Products. See results. Add to your shopping cart, view cart, and download.

9. http://changematters.esri.com/compare

10. https://www.youtube.com/watch?v=ChWj4yBmE0E "Geospatial Revolution: Mapping Power – Kibera" https://www.youtube.com/watch?v=HMQQgPj1mX4 Elevation

Other Resources:

ESRI — https://www.esri.com — ESRI provides the ArcGIS software program which is the primary software on the GWS (Geospatial Work Station), part of the DCGS-A suite of capabilities. ESRI also provides information and training on a variety of geospatial topics.

ENVI — https://www.harris.com/solution/envi — ENVI® is designed to be used by anyone who relies on imagery and data to make decisions regardless of a user's prior experience with imagery. ENVI is also part of the GWS.

Skyline — http://skylineglobe.com/SkylineGlobe/corporate/industries/Capabilities.aspx — Skyline provides the TerraExplorer software to the GWS which provides a cutting-edge 3D GIS desktop viewer and creator that provides powerful tools and a high resolution 3D environment in which to view, query, analyze and present geospatial data.

OGC — http://www.opengeospatial.org/ — Open Geospatial Consortium (OGC) is an international industry consortium of over 517 companies, government agencies and universities participating in a consensus process to develop publicly available interface standards.

USGS — https://www.usgs.gov/ — United States Geological Survey is a great source for CONUS maps and geospatial information and tools.