

(U) GPC-GDM II

Essential Body of Work & Knowledge (EBW/EBK)  
 GEOINT Professional Certification - Geospatial Data Management: Proficiency Level II  
 8 February 2017 (current version can be found at <http://gpc.nga.ic.gov>)



## Core Competency 1 - Data/Information Management (51%)

Formats, catalogs, and/or filters geospatial data and information to facilitate data access, integration, and interpretation. Applies knowledge of policies, procedures, and requirements established under appropriate authorities to protect information and geospatial data. Identifies, accumulates, recommends, and applies tools for transferring knowledge across an organization, managing access control of information across sources, and appropriately storing, using, and/or distributing that information and geospatial data. Understands appropriate processes and procedures to ensure the overall quality of information and geospatial data.

### Terminal and Enabling Certification Objectives (TCOs & ECOs)

#### TCO 1: COMPREHEND how to format, catalog, and filter geospatial data and information

ECO1.1: Describe the differences among file, enterprise, and personal geodatabases

ECO1.2: Identify the primary dataset types within geodatabases

ECO1.3: Describe how a feature class is stored

ECO1.4: Correlate (or match) database formats

ECO1.5: Discuss database management systems

#### TCO 2: APPLY knowledge of how to access, integrate and interpret geospatial data and information

ECO 2.1: Describe how join and relate functions work within the context of GIS attribute tables

ECO 2.2: Demonstrate cardinality, as well as the following relationships; One to many, One to One

ECO 2.3: Demonstrate the four ways in which Geographic Information Systems (GIS) data is described in reference to its usability

ECO 2.4: Explain a function of "Service" in the context of publishing and accessing GIS information.

#### TCO 3: COMPREHEND policies, procedures and requirements to protect information and geospatial data

ECO 3.1: Associate proper security markings with various GEOINT data.

ECO 3.2: Recognize appropriate security marking in a given situation

ECO 3.3: Summarize how a security classification is applied in a given situation

ECO 3.4: Explain how to use National System of Geospatial-Intelligence (NSG) guidance and standards in a given situation to protect information and geospatial data

#### TCO 4: APPLY identifying, accumulating, recommending and tools to transfer knowledge across an organization

ECO 4.1: Exploit appropriate tools used to create or convert a comprehensive dataset or geodatabase from multiple sources (e.g., Convert, merge, append, clip)

ECO 4.2: Convert standard and non-standard data and databases into formats usable in GIS software and web services.

ECO 4.3: Manipulate standard GEOINT database schemas

ECO 4.4: Perform basic vector and raster dataset manipulation methods including clip, select, identify, dissolve, and smooth via automated and manual processes.

#### TCO 5: APPLY managing access control of information across sources

ECO 5.1: Present a functional definition of firewalls in the context of ArcGIS server or any other publishing service

ECO 5.2: Demonstrate the function of "ports" in the context of publishing a service

ECO 5.3: Demonstrate the differences among Web Services (e.g., Coverage, Feature, Mapping, Tile, and Processing)

#### TCO 6: APPLY knowledge of storing, using, and/ or distributing information and geospatial data

ECO 6.1: Explain the components of GIS

ECO 6.2: Operate the Open Geospace Consortium in relation to distributing and obtaining open source data

ECO 6.3: Describe database authentication

ECO 6.4: Engage the GEOINT Delivery Platform (GDP)

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**TCO 7: APPLY processes and procedures to ensure the quality of information and geospatial data.**

ECO 7.1: Create an ArcGIS Data Reviewer Batch job

ECO 7.2: Describe positional accuracy

ECO 7.3: Exploit a Geospatial Analysis Integrity Tool (GAIT) condition report

ECO 7.4: Describe the primary function of Geospatial Analysis Integrity Tool (GAIT)

ECO 7.5: Name the three overarching types of standards that govern data quality

ECO 7.6: Describe spatial accuracy

ECO 7.7: Demonstrate the difference between accuracy and precision

ECO 7.8: Demonstrate the proper steps to run a Geospatial Analysis Integrity Tool (GAIT) master profile

**Core Competency 2 - Data/Information Processing (18%)**

Transforms, decrypts, translates, or otherwise manipulates geospatial data and information. Understands tools and methods to substantive discipline, domain, or area of work. Adapts existing tools or methods or employs methodological approaches required for substantive discipline, domain, or area of work.

**Terminal and Enabling Certification Objectives (TCOs & ECOs)**

**TCO 8: APPLY knowledge of transforming, decrypting, translating or otherwise manipulating information and geospatial data**

ECO 8.1: Convert data from one schema to another schema

ECO 8.2: Distinguish between a table join and a spatial join

ECO 8.3: Describe Transparent Data Encryption (TDE), its functions, uses and drawbacks.

ECO 8.4: Identify the functionalities of layer properties in a feature class or shapefile

ECO 8.5: Manipulate fields in tables

ECO 8.6: Describe the primary use of the Data Loader tool

ECO 8.7: Explain georeferencing (as it pertains to rasters, control points, and real world representation).

**TCO 9: APPLY tools, methods and documentation for substantive discipline, domain, or area of work**

ECO 9.1: Name tools that combine multiple input datasets

ECO 9.2: Name tools that manipulate geospatial data attributes

ECO 9.3: Perform the steps required to create a Geospatial Analysis Integrity Tool (GAIT) project

ECO 9.4: Discuss topological relationships

ECO 9.5: Identify the uses of ArcGIS Data Reviewer

**TCO 10: COMPREHEND required methodological approaches for substantive discipline, domain or area of work**

ECO 10.1: Select the advantages and disadvantages of using relational databases

ECO 10.2: Define Conflation

ECO 10.3: Define Integration

ECO 10.4: Name the different types of geospatial data errors that Geospatial Analysis Integrity Tool (GAIT) inspects.



### Core Competency 3 - Cartography (13%)

Understands datum, coordinate, and grid systems. Edits information and geospatial data using appropriate tools and documentation by annotating changes, applying corrections, additions, and deletions, and updating databases. Investigates relationships, patterns, and trends of information and geospatial data by applying geographic information systems.

#### Terminal and Enabling Certification Objectives (TCOs & ECOs)

##### TCO 11: APPLY datum, coordinate and grid systems

ECO 11.1: Distinguish the principal components of datums, ellipsoids, and spheroids.

ECO 11.2: Interpret the parameters of map projections.

ECO 11.3: Recognize the properties of preserving the Earth's spatial relationships on a map.

ECO 11.4: Distinguish the differences between a coordinate and grid system.

ECO 11.5: Compute degrees-minutes-seconds values to decimal degree values

ECO 11.6: Recognize different types of projections

ECO 11.7: Demonstrate datum transformation (coordinate conversion)

ECO 11.8: Exploit the Universal Transverse Mercator (UTM) Projection

##### TCO 12: COMPREHEND relationships, patterns, and trends in information and geospatial data using GIS software

ECO 12.1: Name the different geospatial data classification methods (e.g., equal interval, natural breaks, etc.

ECO 12.2: Distinguish between discrete and continuous surface data types

ECO 12.3: Name the functions commonly provided in Geographic Information Systems (GIS) software

### Core Competency 4 - Researching (12%)

Identifies a need for and knows where or how to gather information and geospatial data. Obtains, evaluates, organizes, and maintains information and geospatial data.

#### Terminal and Enabling Certification Objectives (TCOs & ECOs)

##### TCO 13: COMPREHEND how to obtain and organize information and geospatial data

ECO 13.1: Describe the Unified Web Presence (UWP)

ECO 13.2: List sources for Geospatial data

ECO 13.3: Describe different types of Geospatial data

ECO 13.4: Distinguish the Human Geography data themes

ECO 13.5: Summarize the overlay operation

##### TCO 14: COMPREHEND how to evaluate and maintain information and geospatial data

ECO 14.1: Define Metadata

ECO 14.2: Explain the difference between a map topology and a geodatabase topology

ECO 14.3: Describe function and use of an XML file as it pertains to a geodatabase

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## Core Competency 5 - Customer Operations and Requirements (6%)

Knowledge of relevant customer organizations or operations, including knowledge of translating requirements to provide the appropriate output or response to customer needs.

### Terminal and Enabling Certification Objectives (TCOs & ECOs)

#### TCO 15: KNOW customer organizations or operations

ECO 15.1: Recognize NGA GEOINT roles, responsibilities, and specific guidance.

ECO 15.2: Describe Supported and Supporting Combatant Command and Supporting Combantant Command GEOINT roles, responsibilities, and specific guidance

ECO 15.3: Recognize Armed Services GEOINT roles, responsibilities, and specific guidance.

ECO 15.4: Associate Component Command GEOINT roles, responsibilities, and specific guidance

ECO 15.5: Describe the Joint Geospatial Intelligence Cell Construct.

#### TCO 16: COMPREHEND translating requirements to provide appropriate output or response to customer needs.

ECO 16.1: Describe the Joint Geospatial Intelligence Operations Process

ECO 16.2: Describe Geospatial Intelligence Deliberate and Crisis Action Planning Processes and Actions

ECO 16.3: Identify NGA customer support models