

About This Standard

Current Status *Mandated*

Standard Identifier NEC v2.0

Title of Standard

National System for Geospatial-Intelligence (NSG) Entity Catalog (NEC), Version 2.0, 27 February 2009

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/Retired
2009-07-30	n/a	2009-07-30	2009-07-30	2009-07-30	n/a

Replaced [NEC v1.8](#)

Standards Body

[NGA](#)

[Broken Link?](#)

URL to Access or Acquire

<https://nsgreg.nga.mil/as/view?i=80550>

Working Group

Primary Owner Geospatial Intelligence (GWG)
Secondary Interests Application / Messaging
Discovery
DoD Intelligence
Modeling and Simulation
Messaging Format/Symbology

Service Area GEOINT: Geospatial

KIPs No KIP Found

Standard Applicability

2009-07-30

The NEC is applicable to the storage, manipulation, interchange, and exploitation of geospatial intelligence data. Systems participating within the NSG must utilize the NEC in order to ensure consistent NSG-wide geospatial data semantics, support net-centric geospatial services, and achieve geospatial data interoperability.

Standard Abstract

2009-07-30

The NSG Entity Catalog (NEC) specifies the domain data model for feature-based geospatial intelligence that determines the common semantic content of the NSG despite varying physical realizations across DoD/IC systems (i.e., regardless of whether the features are represented as an image, a multi-dimensional grid of values, or a set of one or more vector shapes). The interoperability challenge of net- and data-centricity necessitates that these diverse environments, perspectives, and implied requirements be integrated through a common semantic. The NEC specifies an unambiguous shared semantic for geospatial intelligence across the DoD/IC while providing sufficient flexibility for customization and extension to meet unique customer system objectives. The NEC provides the semantic content from which application schemas can be derived, e.g. the NSG Application Schema (NAS). Data elements

used in the NEC are specified by the NSG Feature Data Dictionary (NFDD), which either profiles data elements from recognized content standards, specifications and profiles of the military (e.g., DGIWG, NATO/MGID, MIDB, JMCDM) and civilian sectors (e.g., IHO, ICAO/Eurocontrol, WMO), or serves as the NSG-specific authority for unique data elements. The NEC is a semantic model supporting the Geospatial Intelligence Knowledge Base (GKB) that serves as the common DoD/IC virtual geospatial information environment on the Global Information Grid (GIG). The NEC allows for multiple physical realizations as constrained by system-specific technologies and requirements.

Profiling Questions

GEOINT: Geospatial

- Does the application acquire, process, analyze, access, present and/or transfer geospatial information in digital/electronic form or does the application participate in the NSG or does the application use, display and/or communicate information about geospatial concepts (e.g. definitions or descriptions of items of geospatial information)?

Products Incorporating This Standard

NGA Topographic Feature Data Management (TFDM) Data Content Specifications (DCS), NAVOCEANO Riverine Operations DCS, NGA Global Navigation Services (Aeronautical and Maritime) pilots, NGA Geospatial-Intelligence Knowledge Base (GKB)

Relevant Information

The NEC is the successor to and replaces both the legacy NIMA Profile (including US National Extensions) of the DGIWG Feature and Attribute Coding Catalogue (FACC) and the emerging NSG Feature Catalog (NFC). It conforms to ISO 19110 Methodology for Feature Cataloging and its information schema. The NEC is designed to support net- and data-centric specification and use of items of geospatial information, including the acquisition, processing, analysis, access, presentation and transfer of geospatial information in digital/electronic form between different users, systems and locations. The NEC specifies a common semantic model for all NSG participants and is a critical component in achieving NSG objective capabilities; failure to ensure that DISR users are aware of and have access to the NEC during their system development and/or upgrade activities will significantly impair the development and operation of the NSG. NOTE: The ISO 19100-series of standards defines the term feature as an abstraction of real world phenomena. The NEC scope of the term feature is that a feature may have many alternative representations (e.g., as an image, a multi-dimensional grid of values, or a set of one or more vector shapes). In some technology communities a feature is understood to be only a vector shape representation (of a real world phenomena), which is often the practice in the commercial Geographic Information Systems (GIS) community. The NEC avoids this potential misunderstanding of the scope for its use in DoD/IC system acquisition. The NSG Entity Catalog (NEC) is a renaming of the NSG Feature Catalog (NFC), without changing either scope or intent. Citation was authored by the GWG Application Schemas for Feature Encoding Focus Group.

Implementation Guidance

The NEC supersedes the legacy NIMA Profile of FACC and meets the same functional and content requirement; guidance applied in the use of the NIMA Profile of FACC may apply here as well. For system-specific recommendations for integration and employment of the NEC (e.g., within the C/JMTK or in concert with web-based services such as the Web Feature Service (WFS), ISO 19142), contact the NGA / National Center for Geospatial Intelligence Standards (ncgis-mail@nga.mil). In particular, experienced assistance is available for the migration of existing systems, capabilities, specifications, and formats that are based on the NIMA Profile of FACC to a NEC-basis.

Standard Selection Criteria

Interoperability/Supportability

Net/data-centricity necessitates diverse environments, perspectives, & requirements integrated thru a common logical data model. The NEC asserts unambiguous shared semantic for GEOINT across the NSG & provides sufficient flexibility for customization & extension to meet customer system needs. It determines semantic content by specifying an NSG-wide data model w/ the NSG Feature Data Dictionary (NFDD) serving as its supporting data element dictionary. It specifies the semantics of the feature information concepts used, their geometries, attributes, data types, associations, metadata & mgmt info. It draws upon recognized content standards, specs & profiles from the military (DGIWG, NATO/MGID, MIDB, JMCDM) & civilian sectors (IHO, ICAO/Eurocontrol, WMO). Traceability is established from concepts back to appropriate authoritative concept sources to ensure data integrity when geospatial data is exchanged between NSG & external systems. The NEC & NFDD together answer: What do we mean?

Technical Maturity

The NEC was released in 2005 (then provisionally named the NSG Feature Catalog) and has been subsequently enhanced on the basis of evolving information systems technology. Version 1.8 was mandated in the DISR in 2007. Significant enhancements have occurred over the subsequent two years. The NEC is in active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems. The NEC is the successor to and replaces both the legacy NIMA Profile (including US National Extensions) of the DGIWG Feature and Attribute Coding Catalog (FACC) and the former NSG Feature Catalog (NFC). The NEC conforms to ISO 19110 Methodology for Feature Cataloging and its information schema, using feature and attribute concepts specified by the NSG Feature Data Dictionary (NFDD). The NEC leverages and integrates geospatial information modeling practices from multiple community models (e.g., MGCP, AIXM, MIDB, S-57, AML, and others) whose data are used and exchanged by NSG component systems.

Public Availability

The NEC v2.0 specification is published at <https://nsgreg.nga.mil/as/view?i=80550/>.

Implementability

The NEC specifies the geospatial information concepts (and their relationships) used by the NSG community to characterize real-world entities (or objects) and related properties. Technology appropriate for implementing and using these geospatial information concepts is well established. In particular, the NEC has been used within a net-centric architecture based on Open Geospatial Consortium (OGC) open web services such as the Web Feature Server (WFS ISO 19142) as well as in relational DBMS (including COTS GIS) environments. It may be employed in conjunction with widely-used ESRI Shapefiles for geospatial data exchange.

Authority

The NEC is managed by the NGA NCGIS and the Geospatial Intelligence Standards Working Group (GWG), using an ISO 19110-conformant information schema. The NEC is in active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems. The NEC specifies the geospatial semantic content of the NSG Application Schema (NAS) Platform Independent Model and its mission- and system-specific profiles.

Standard Type Non-Military

Standard Classification Unclassified

Keywords for Search

Attribute, Catalog, Chart, DFDD, DGIWG, Data Model, Feature, Geographic, Geospatial, Intelligence, MCG&I, Map, Metadata, NEC, NFDD, NSG, NSG EC, NSG NFDD