

About This Standard

Emerging

Standard Identifier NAS v1.8

Title of Standard

National System for Geospatial-Intelligence (NSG) Application Schema (NAS),
Version 1.8, May 2007

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/Retired
2007-11-06	2007-11-06	n/a	2007-11-06	2007-11-06	n/a

Standards Body

[NGA](#)

[Broken Link?](#)

URL to Access or Acquire

http://www.gwg.nga.mil/stds_regs.html;

<http://org.nga.ic.gov/nccgis/registries.html>;

<https://gesportal.dod.mil/sites/GWGCOL/default.aspx> (e-mail)

nccgis-mail@nga.mil

Working Group

Primary Owner

Geospatial Intelligence TWG (GWG)

Secondary Interests

Modeling and Simulation TWG
Warfighting

Service Area

GEOINT: Geospatial

KIPs

No KIP Found

Standard Applicability

2007-11-08

The NAS is applicable to the storage, manipulation, interchange, and exploitation of geospatial intelligence data. Systems participating within the NSG must utilize the NAS in order to ensure consistent NSG-wide geospatial data semantics, compatible no-loss syntactic encodings, support net-centric geospatial services, and achieve geospatial data interoperability.

Standard Abstract

2007-11-08

The NSG Application Schema (NAS) specifies the Platform Independent Model (in accordance with the Object Management Group (OMG) Model-Driven Architecture (MDA)) that determines the syntactic structure used across the NSG to represent the geospatial semantics specified by the NSG Entity Catalog (NEC) and NSG Feature Data Dictionary (NFDD). The NAS integrates conceptual schemas from ISO 19100-series standards for entity modeling, such as those for features, events, names and coverages (e.g., grids, rasters, and TINs). The NAS specifies a single clear, complete, and internally-consistent NSG geospatial data schema that may be used to derive system-specific implementation schemas in a rigorous manner. Conformance to the NAS ensures that data integrity is preserved when geospatial data is exchanged between different system implementations within the NSG. The NAS also ensures that the structure of NSG-specific data sets correlate well with the structure of other types of data on

the Global Information Grid (GIG), and that NSG-specific applications can leverage GIG Enterprise Services (GES) such as those based on the DoD Discovery Metadata Specification (DDMS).

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 Mission Specific Data (MSD) Data Content Specifications (DCS) NGA Geospatial-Intelligence Knowledge Base (GKB)

Relevant Information

The NAS is the successor to and will replace a number of legacy formats including the (DISR-mandated) Vector Product Format (VPF). The NAS is a Platform Independent Model in accordance with the Object Management Group (OMG) Model-Driven Architecture (MDA: <http://doc.omg.org/omg/03-06-01>) framework; it determines the syntactic structure used across the NSG to represent the geospatial semantics specified by the (DISR-emerging) NSG Entity Catalog (NEC) and (DISR-mandated) NSG Feature Data Dictionary (NFDD). The NAS conforms to ISO 19109:2005 Rules for Application Schema as well as conceptual schemas specified by other ISO 19100-series standards. The NAS 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 NAS specifies a common syntactic 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 NAS during their system development and/or upgrade activities will significantly impair the development and operation of the NSG. Citation authored by the GWG Application Schemas for Feature Encoding Focus Group.

Implementation Guidance

The NAS will supersede the legacy Vector Product Specification (VPF) and meets the same functional and content requirement; guidance applied in the use of the Vector Product Specification (VPF) may apply here as well. For system-specific recommendations for integration and employment of the NAS (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 and legacy MIL-STD/MIL-PRF data product specifications and their related encodings to a NAS-basis.

Standard Selection Criteria

Net-Centric Interoperability

NAS is an unambiguous shared semantic & syntactic structure for GEOINT across the NSG specifying a common Platform Independent Model for the

structure to represent semantics specified by NEC & NFDD. It integrates conceptual schemas from the ISO 191XX-series for entity modeling: features, events, names & coverages (grids, rasters, & TINs). It specifies a single clear, complete, & internally-consistent NSG geospatial data schema to derive system-specific implementation schemas to ensure data integrity is preserved when geospatial data is exchanged between different system implementations within the NSG. It ensures the structure of NSG-specific data sets correlate with structures of other types of data on the Global Information Grid (GIG), & that NSG-specific applications leverage GIG Enterprise Services like those based on the DoD Discovery Metadata Specification. NEC & NFDD together answer the information exchange question What do we mean? NAS answers How do we say it?

Technical Maturity

The NSG AS is being developed, maintained, and enhanced on the basis of evolving information systems technology. It is entering active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems. The NAS will replace a number of legacy formats including the (DISR-mandated) Vector Product Format (VPF). The NAS is specified using the Unified Modeling Language (UML) - ISO/IEC 19501, conforms to the General Feature Model specified in ISO 19109:2005, and specifies encodings conforming to ISO 19136 (Geography Markup Language). The NAS draws on the semantic content specified in the NSG Feature Data Dictionary (NFDD) and the domain data model specified in the NSG Entity Catalog (NEC).

Public Availability

The NEC is published in several forms and is available for free download at: http://www.gwg.nga.mil/stds_regs.html, <http://org.nga.ic.gov/ngcis/registries.html>, and <https://gesportal.dod.mil/sites/GWGCOI/default.aspx>. It can be requested by e-mail through ncgis-mail@nga.mil.

Implementability

The NAS specifies in a platform-independent manner the syntactic structure of geospatial information concepts (and their relationships) used by the NSG community to characterize real-world entities (or objects) and related properties. It follows tenants established by the Object Management Group (OMG) Model-Driven Architecture (MDA) (<http://doc.omg.org/omg/03-06-01>). The NAS is specified using the Unified Modeling Language (UML) - ISO/IEC 19501 - and is used within a number of COTS Computer-aided Software Engineering (CASE) tools. The GML-based NAS encoding is being used within a net-centric architecture based on Open Geospatial Consortium (OGC) open web services such as the Web Feature Server (WFS) - ISO 19142; other NAS encodings are used in relational DBMS (including COTS GIS) environments and, after suitable transformations, to specify Shapefile®-based data exchange formats.

Authority

The NAS is managed by the NGA NCGIS and the Geospatial Intelligence Standards Working Group (GWG), using ISO 19100-series conformant schema. NAS is established as an online registry in conformance with ISO 19135 to support rapidly evolving DOD/IC requirements. The NAS is entering active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems.

Standard Type Non-Military

**Keywords for
Search** None