

About This Standard

Current Status *Emerging*

Standard Identifier NAS Pt. 1, v2.0

Title of Standard

National System for Geospatial-Intelligence (NSG) Application Schema (NAS) -- Part 1: Platform Independent Model, 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	2009-07-30	n/a	2009-07-30	2009-07-30	n/a

Replaced [NAS v1.8](#)

Standards Body

[NGA](#)

[Broken Link?](#)

URL to Access or Acquire

<https://nsgreg.nga.mil/as/view?i=81050>

Working Group

Primary Owner

Geospatial Intelligence (GWG)

Secondary Interests

Application / Messaging
Discovery
DoD Intelligence
Modeling and Simulation
Messaging Format/Symbology

Service Areas

GEOINT: Geospatial
Modeling and Simulation

KIPs

No KIP Found

Standard Applicability

2009-07-30

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

2009-07-30

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 maximally-consistent 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)?

Modeling and Simulation

- Does your system use HLA and/or DIS?

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

Encodings of the NAS are the successor(s) to and will replace a number of legacy formats as identified in subsequent NAS parts when published. The NAS Part 1 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-mandated) NSG Entity Catalog (NEC) and (DISR-mandated) NSG Feature Data Dictionary (NFDD). The NAS Part 1 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 Part 1 specifies a common syntactic and 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 NAS during their system development and/or upgrade activities will significantly impair the development and operation of the NSG. Citation was authored by the GWG Application Schemas for Feature Encoding Focus Group.

Implementation Guidance

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

Interoperability/Supportability

NAS is an unambiguous shared semantic and 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 19100-series for entity modeling: features, events, names and coverages (grids, rasters, & TINs). It specifies a single clear, complete, and 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 NAS Platform Independent Model was released in 2006 and continues to be developed, maintained, and enhanced on the basis of evolving information systems technology. Version 1.8 was entered as emerging in the DISR in 2007. It is in active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems. The NAS Part 1 is specified using the Object Management group (OMG) Unified Modeling Language (UML), Version 2.1.2, and conforms to the General Feature Model specified in ISO 19109:2005, and supports 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 NSG Entity Catalog (NEC).

Public Availability

The NAS Part 1, v2.0, specification is published at: <https://nsgreg.nga.mil/servlet/View?i=81050>

Implementability

The NAS Part 1 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 tenets 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) and is used within a number of COTS Computer-aided Software Engineering (CASE) tools. NAS encodings (e.g., GML) are 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 Part 1 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 in active use within NGA and the National System for Geospatial Intelligence (NSG) and its component systems. The NAS Part 1 specifies a single clear, complete, and internally-consistent NSG platform-independent geospatial data schema that may be used to derive maximally-consistent system-specific implementation schemas in a rigorous manner.

Standard Type Non-Military

Standard Classification Unclassified

Keywords for Search NAS, NEC, NFDD, NSG