

About This Standard

Mandated

Standard Identifier STANAG 4559, EDITION 2

Title of Standard

NATO Standard ISR Library Interface (NSILI), Edition 2, dated 15 June 2007

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/Retired
2008-07-14	n/a	2008-07-14	2008-07-14	2008-07-14	n/a

Standards Body [NATO](#)

[Broken Link?](#)

URL to Access or Acquire <http://www.nato.int/docu/standard.htm>

Working Group

Primary Owner Geospatial Intelligence TWG (GWG)

Secondary Interest No Secondary Interest

Service Area GEOINT: Still Imagery

KIPs No KIP Found

Standard Applicability

2008-07-17

STANAG 4559, the NATO Standard ISR Library Interface (NSILI), is used in Coalition and NATO Distributed Common Ground System structures as the discovery and retrieval (D&R) mechanism to query and provide ISR data including imagery, GMTI, Motion Imagery and general ISR data that can be discovered in a network (usually closed) of ISR product libraries. STANAG 4559 Clients, developed by participating nations utilizing common and standard data elements to query available IPLs, establish standing requests for new instances of data in an area of interest. Interfaces to the US DCGS Integrated Backbone (DIB) provide a link to accessing exposed data / data sources to coalition and friendly forces in closed networks. The NATO International Security Assistance Force (ISAF) commands have identified STANAG 4559 compliant capabilities for use in the battlefield.

Standard Abstract

2008-07-17

STANAG 4559 NSILI is aimed at providing interoperable exchange of NATO Intelligence, Surveillance and Reconnaissance (ISR) products among NATO accessible C4I Library Systems. The STANAG 4559 is the standard interface for querying and accessing heterogeneous product libraries maintained by various nations and revealed to partner nations. This standard specifies a common software interface to be implemented and exist for all NATO ISR interoperable library systems. The interface provides electronic search and retrieval capabilities for distributed users to find products from distributed libraries in support of, but not limited to, rapid mission planning and operation, strategic analysis, and

intelligent battlefield preparation. Product Libraries and the NSIL Interface are envisioned by NATO as a key technology utilized within existing Request for Information (RFI) procedures. The overall goal is for the users, who may be intelligence analysts, imagery analysts, cartographers, mission planners, simulations and operational users from NATO countries, to have timely access to distributed ISR information if Host Nation operational restrictions and security policies permit this access. Originally designed for discovery of still image files (STANAG 4545 NSIF), the 4559 STANAG is being expanded in capability to discover any type of ISR data revealed in an ISR Library. STANAG 4559 is part of the NATO ISR Interoperability Architecture (NIIA) defined in NATO publication AEDP-2 and provides access to data in the following formats: STANAG 4545 NSIF; STANAG 4607 GMTI; STANAG 4609 Motion Imagery; STANAG 7023 Primary Imagery; STANAG 4633 NATO Common ELINT Reporting Format; MIL-STD 2500; ISO/IEC 12087-5 NSIF Profile of BIIF.

Profiling Questions

- GEOINT: Still Imagery**
- Does the sys discvr ISR data from a product library or does the ISR library sys support client & server structures, standing queries, info release protection, or web discovery and retrieval of data in STANAG 4545, 4607,4609,4633,7023 NITF, NSIF, JPEG, TIFF?

Products Incorporating This Standard

Norwegian NORCCIS and MTOC, UK Watchkeeper, UK TREF, UK MEC, UK MIDAS; NC3A CSD, German SAR-Lupe, German IIES, German Tornado, French SAIM, US DCGS-X

Relevant Information

Allied Engineering Documentation Publication Number 5 (AEDP-5) and the STANAG 4559 NATO Standard ISR Library Interface (NSILI) Implementation Guide provide guidance for the implementation and testing of STANAG 4559. The STANAG, the AEDP-5 and other supporting documentation is provided at <http://www.nato.int/docu/standard.htm> This citation authored by the GWG NTB Focus Group. This STANAG represents current practice. Forward looking activities are addressing XML interchanges and coordination with US and NATO forums for net-centric discovery.

Implementation Guidance

A) The JCG-ISR recognizes the current limitations for a trusted technology that supports the management of release and handling instructions encoded on data. NSILI implementations therefore presume the limitation of a closed or controlled network to participating ISR libraries that contain fully releasable data, until such time as a solution technology can be applied. B) Discovery is dependent upon the robustness of metadata search engines and the existence of metadata encoded in data files; NSILI, for this reason, minimizes the discovery core data set. Profiles will be established for particular formats of data (4607: GMTI, 4609: Motion Imagery, 4633: ELINT Reports, 4676: ISR Tracks), but the baseline Core Data Model is based on STANAG 4545: NSIF and is mandated for compliance and backwards interoperability. C) Compatible exchange with the DCGS Integrated Backbone (DIB) has been developed and tested; however, there is no standard for the DIB. D) Alignment of STANAG 4559: NSILI with the USIGS Geospatial and Imagery Access Services Specification - Version 3.5.1, USIGS Common Object Specification-Version 1.5.1a, UIP Specification Change Summary, and Discovery & Retrieval Interface Data Model (Rev. M) - 30.09.2007, all NGA documents, are supported, but

not controlled by, the STANAG 4559 Custodial Support Team and the US Interface Control Working Group (ICWG) and NSG Interface Control Working Group (NICWG).

Standard Selection Criteria

Net-Centric Interoperability

STANAG 4559, the NATO Standard ISR (Intelligence, Surveillance and Reconnaissance) Library Interface (NSILI), specifies the network interface for accessing ISR product libraries when operating in the coalition environment. ISR product libraries supporting NATO operations have the capability to provide imagery, GEOINT, imagery products, metadata and other imagery-derived information in near real time. NSILI provides definition of this interface and describes product interchange on networked systems. NSILI is part of the NATO ISR Interoperability Architecture (NIIA) defined in NATO publication AEDP-2 and provides library access to data in the following formats: STANAG 4545 NSIF; STANAG 4607 GMTI; STANAG 4609 Motion Imagery; STANAG 7023 Primary Imagery; STANAG 4633 NATO Common ELINT Reporting Format; MIL-STD 2500; and ISO/IEC 12087-5 NSIF Profile of BIIF. Edition 2 is based upon CORBA, a future edition (2009) will address other network ORB technologies (e.g. IIOP, SOAP, etc.).

Technical Maturity

STANAG 4559 is a NATO Standardization Agreement based on the US Imagery and Geospatial System (USIGS) Geospatial and Imagery Access Services (GIAS) Specification. NSILI provides an application for international users with a connection to US DCGS service stations. The standard utilizes CORBA as a data controlling mechanism, considered reliable for closed networks. NATO is deploying the NSILI Coalition Shared Data Server (CSD) in the ISAF mission in 2008. Viability of the STANAG has been demonstrated in the Multi-Sensor Aerospace-Ground Joint Intelligence, Surveillance, Reconnaissance (ISR) Interoperability Coalition (MAJIIC) virtual environments and the Exercise Empire Challenge live fly environment. The STANAG has tested well in both environments, and has been improved in the testing process. NATO Nations systems include: Norwegian NORCCIS and MTOC; UK Watchkeeper, TREF, MEC and MIDAS; NC3A CSD; German SAR-Lupe, IIES and Tornado; French SAIM; and the US DCGS-X.

Public Availability

STANAG 4559 is available in the public domain from the NATO Standardization Agency at URL <http://www.nato.int/docu/standard.htm>. It is freely available along with supporting documents for implementation guidance.

Implementability

Within the US DoD, STANAG 4559 has been implemented in DCGS during Exercise Empire Challenge 2007 and NATO Trial Quest 2007. It is a subset of the GIAS interface implemented in the US Imagery Product Library (IPL). The Library Interface serves as a discovery and retrieval mechanisms for the NATO Nations and Australia. STANAG implementation in the US serves to support interoperability, especially with NATO ISAF forces, where the NC3A has deployed the Coalition Shared Dataserver (CSD) version of STANAG 4559 implementation. Implementations exist in the following nations and agencies: MAJIIC, NC3A, Germany, France, Great Britain, Italy, Norway, US test systems, and AGS3. Canada has NSILI clients or servers in development. Commercial

interests in the UK, Italy, and Germany are the primary developers for the national defense structures. These include General Dynamics UK, QinetiQ, Thales, Datamat(Italy), Fraunhofer-IITB (Germany).

Authority

This standard was developed for the NATO Air Forces Armaments Group (NAFAG) within the Air Group 4 for Intelligence, Surveillance and Reconnaissance. The STANAG is currently maintained within the same ISR data management concern under the Joint Capability Group-ISR, one of several Capability Groups under NAFAG. The STANAG 4559 Custodial Support Team (CST) is the technical maintenance body and supports testing of the STANAG through MAJIIC and other exercise venues. The CST also maintains a STANAG 4559 conformance test suite hosted by the NATO Command, Communications, and Consultation Agency (NC3A). Configuration management of the STANAG and supporting documents is governed by the Configuration Management Process defined in Volume 2 of the Allied Engineering Documentation Publication Number 2 (AEDP-2) for the NATO Intelligence, Surveillance and Reconnaissance Interoperability Architecture (NIIA) and in AEDP-5, the Implementation Guide for STANAG 4559.

Standard Type Military

Keywords for Search 4545, 4607, 4609, 4633, AGI, CSD, Coalition Shared Data, D&R, DCGS, DIB, Discovery, ELINT, FMV, GMTI, ISR, MAJIIC, MI, Motion Imagery, NATO, NCERF, NIIA, NITF, NSIF, NSIL, NSILI, Retrieval, STANAG