

About This Standard

Mandated

Standard Identifier CSM, v2.A

Title of Standard

Community Sensor Model (CSM) Version 2.A, 1 August 2007

Standards History

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

Standards Body [DoD](#)

[Broken Link?](#)

URL to Access or Acquire <http://www.csmwg.seicorp.com>

Working Group

Primary Owner Geospatial Intelligence TWG (GWG)

Secondary Interest No Secondary Interest

Service Area GEOINT: Geospatial

KIPs No KIP Found

Standard Applicability

2007-11-08

This standard is applicable to DoD Component/Intelligence Community sensor programs that are required to develop and/or revise a sensor model, to sensor model development programs and to geopositioning capability development programs. This standard does not compete with any other standard.

Standard Abstract

2007-11-08

CSM Version 2.A provides the government and industry with a single standard for use to create and maintain a standardized and cost effective program for developing, testing, and evaluating a collection of current and future sensor models. The standard supports development of sensor models supporting Sensor Exploitation Tools (SETs) and other application tools requiring a precise understanding of the image (data) and ground coordinate relationships. Resulting standardized CSMs are dynamically linked (or loaded) libraries that do not require re-compilation of the SET. These standardized models may be added or removed from the SET without impact on the SET or other models. This capability is used to accurately map a pixel (e.g., target location) on an image to a geo-referenced coordinate and provide rigorous error estimates. CSM Version 2.A, is the primary document and defines the technical/functional requirements for development of sensor models. It contains five appendixes which when combined with CSM Version 2.A form the CSM standard. Appendix C, the Application Programmers Interface (API) document, supplements the functional requirements set forth in the CSM Version 2.A and establishes the requirements placed on the sensor model elements to interface with applications that use the

photogrammetric operations (math libraries) contained in the sensor model. Both documents collectively establish the requirements allocated to the sensor model. Other appendixes include a sensor definition document, hardware/software configuration information, sample statement of objectives and a test plan and procedures. These documents all augment the basic requirements documents above and allow a developer/user to build and test standard compliant sensor models.

Profiling Questions

- GEOINT: Geospatial**
- Are you developing an imaging [EO, SAR, LIDAR, FRAME, PUSHBROOM, WHISKBROOM] sensor model or does your software need to interface with a sensor model for derivation of geocoordinates?

Products Incorporating This Standard

NGA Mensuration Services Program and the DoD Common Geopositioning Services (CGS)

Relevant Information

Supersedes CSM which was emerging in DISR as Community Sensor Model (CSM) Version 2, January 18, 2005. This citation was authored by the GWG Community Sensor Model Working Group

Implementation Guidance

A consideration in the development, testing and verification of sensor models developed using the standard was to minimize changes to existing SETs and other application tools requiring a precise understanding of the image and ground coordinate relationships. Initially, SETs may require modifications to access the functionality of the standard compliant Community Sensor Models in a sensor independent manner. However, additional changes will not be required as more Community Sensor Models are produced and made available for integration and use by the SETs. The Community Sensor Model API is the standardized method for communicating between the Community Sensor Models and the SETs. The Community Sensor Model API document defines a library of functions that can be dynamically loaded by the SET.

Standard Selection Criteria

Net-Centric Interoperability

This standard significantly enhances Joint and/or combined Service/Agency information exchange and supports Joint and coalition activities.

Technical Maturity

This standard has been vetted through the Air Force and National Geospatial-Intelligence Agency (NGA) Sensor Model Program POCs. Additionally, numerous members of industry supporting either sensor model development or application tools that use sensor models have coordinated on the standard documentation.

Public Availability

The standard is not proprietary and is publicly available.

Implementability

The standard has been formally adopted and implemented by the Air Force, Navy and NGA. Twenty sensor models have been built by the DoD, tested, and are in full compliance with the standard. These sensor models are in use in over 1000 workstations worldwide.

Authority

CSM, version 2.0 was initially developed by the USAF in full coordination with NGA. Custodianship and configuration management was transferred to NGA as the designated GEOINT Functional Manager in 2006. Community review of version 2.0 prompted additional content worthy of versioning as 2.A. Currently it is maintained by and under configuration control of the GWG Community Sensor Model Working Group on behalf of the Director, National Center for Geospatial Intelligence Standards (NCGIS), NGA.

Standard Type Military

Keywords for Search None