

## [NITFS CTE FACILITY](#)

The NITFS CTE Facility capabilities include:

- ◆ Modern test laboratories
- ◆ Windows, Mac, and UNIX workstations with ancillary devices
- ◆ Automated test tools for:
  - ◇ Computer Graphics Metafile (CGM)
  - ◇ Compression Algorithms (Joint Photographic Experts Group (JPEG), DCT, JPEG 2000, and VQ)
  - ◇ NITFS file headers and imagery evaluation
- ◆ Ability to perform bit-by-bit analysis of NITFS files

## [TEST SERVICES](#)

Test services are available to both government and commercial concerns. For more information on NITFS compliance testing, scheduling, test documents, and test submission forms, please contact:

Joint Interoperability Test Command  
NITFS Test & Evaluation Facility  
ATTN: JTF  
P.O. Box 12798  
Fort Huachuca, AZ 85670-2798

## [NITFS Test Facility](#)

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**Defense Information Systems Agency**  
Department of Defense

## [NITFS PROGRAM MANAGEMENT](#)

National Geospatial-Intelligence Agency (NGA)  
ATTN: NCGIS  
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7500 GEOINT Drive  
Springfield, VA 22150  
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## **Joint Interoperability Test Command**

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# NATIONAL IMAGERY TRANSMISSION FORMAT STANDARD (NITFS)



**Joint Interoperability  
Test Command**

## **WHAT IS THE NATIONAL IMAGERY TRANSMISSION FORMAT STANDARD (NITFS)?**

Dedicated to supporting the Warfighter, the NITFS is the designated standard for formatting and exchanging digital imagery and imagery-related products within the Department of Defense (DoD) and among members of the Intelligence Community.

### **NITFS SUITE OF STANDARDS\***

MIL-STD-2500A	NITFS Version 2.0
MIL-STD-2500C	NITFS Version 2.1
MIL-STD-188-198A	JPEG Image Compression for the NITFS
MIL-STD-188-199	Vector Quantization Decompression for the NITFS
MIL-STD-2301A	Computer Graphics Metafile (CGM) Implementation Standard for the NITFS
ISO/IEC 8632	Metafile for the storage and transfer of picture description information
ISO/IEC 12087-5	Basic Image Interchange Format (BIIF)
BPCGM01.00	BIIF Profile for CGM
BPJ2K01.00	BIIF Profile for JPEG 2000
NSIF01.00	BIIF Profile - NSIF
ISO/IEC 15444-1	JPEG 2000 Image Coding System

\*List not inclusive

### **NITFS BACKGROUND**

The NITFS is the collaborative result of a U.S. Government and Industry effort to provide a common facility for exchanging imagery, imagery derived information, and associated geospatial metadata. The NITFS is a common standard for the exchange and storage of files composed of images, graphics, text, and associated data. The NITFS provides technical review, community coordination, and overall planning of the NITFS

test program through the NITFS Technical Board (NTB) and its ad-hoc working groups (e.g., the Format Working Group (FWG), Bandwidth Compression Working Group (BWCWG), and Metadata Profile Working Group (MPWG)). The NTB has evolved over the years into a true consensus-based forum emphasizing cooperation and partnership between government and industry. The NTB operates under the joint authority of the Geospatial Intelligence Standards Working Group (GWG), which is responsible for the selection and management of imagery and geospatial standards for the DoD, Intelligence Community, and the overall National System for Geospatial-Intelligence (NSG) community.

NITFS Version 2.0 began fielding in 1994. Over 270 compliance tests have been conducted to date. NITFS Version 2.1 became available for implementation in October 1998. To date, over 173 NITFS system configurations have been tested for Version 2.1 compliance. NITFS Version 2.1 added updated security features, improved geospatial support, multispectral imagery, and complex data formats across a Joint Enterprise environment.

The NITFS has now been established as an International Standard, (ISO/IEC 12087-5), Basic Image Interchange Format (BIIF). Implementation profiles of BIIF have been established for the U.S. DoD, NSG, NATO (STANAG 4545), and for nations participating in the "Open Skies" treaty, forging partnerships across the coalition.

### **NITFS CHARACTERISTICS, FEATURES, AND CAPABILITIES**

Provides universal features and functions without requiring commonality of hardware or proprietary software.

- ◆ Multi-levels of implementation capability
- ◆ Variable image sizes and resolutions
- ◆ Vector graphics
- ◆ Nondestructive image insets/overlays
- ◆ Nondestructive graphical annotation of imagery
- ◆ Image compression using international standards
- ◆ Embedded text files convey information about the image

- ◆ Extended imagery support and archive data
- ◆ Capability to uniquely classify each segment within a file

### **NITFS COMPLIANCE TEST PROGRAM**

The National Geospatial-Intelligence Agency oversees the NITFS Test and Evaluation (T&E) Program to verify NITFS compliance. Compliance registration is accomplished through a series of tests that verify a digital imagery system's ability to generate imagery, graphics, text, and associated data in the NITFS file format; and/or interpret/display/unpack/exploit NITFS formatted imagery, graphics, text, and associated data. The Joint Interoperability Test Command has established the NITFS Compliance T&E (CTE) Facility to support the compliance testing program and to perform other NITFS related testing services. Detailed information is contained in NGA N-0105, NITFS Standards Compliance and Interoperability T&E Program Plan.

### **NITFS COMPLIANCE CRITERIA**

Digital imagery systems will be tested for compliance with the implementation requirements of the NITFS. The test criteria are specified in the NGA N-0105, NITFS Standards Compliance and Interoperability T&E Program Plan.

- ◆ Single and multi-band imagery ranging from 1x1 to 64Kx64K pixels; 1, 8 to 16, 24, 32, and 64 bits-per-pixel.
- ◆ Compress imagery using JPEG Discrete Cosine Transform (DCT), J2K, or Vector Quantization (VQ) compression.
- ◆ Generate/Interpret/Display graphical and textual annotations.
- ◆ Prepare/Access text files associated with the imagery.
- ◆ Generate/Interpret/exploit extended imagery support data.