Image Access Services Specification Validation Test Profile (Draft)

12 February 1997

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1 *Not Used*

2 *Applicable Documents*

2.1 Government Documents

2.1.1 *NIMA Documents*

The following documents of exact issue shown (identified by revision letter only) and authorized changes form a part of this specification to the extent specified herein:

1. *Military Handbook for the National Image Transmission Format Standards (NITFS)*, MIL-HDBK-1300A, 12 October 1994
2. *National Image Transmission Format (NITF) (Version 2.0) for the National Image Transmission Format Standards (NITFS)*, MIL-STD-2500A, 12 October 1994
3. *Central Imagery Office United States Imagery System Standards Profile for Imagery Archive (SPIA)*, Version 1.0, 20 July 1994 (CIO ASD SIA 0594 0000)
4. *Central Imagery Office United States Imagery System Standards Profile for Image Distribution (SPID)*, Version 1.0, 13 October 1995, (CIO-2019)
5. *Imagery Access Services Specification, Version 1.1*, 13 March 1997, (CIO-2068).
6. *National Imagery Transmission Format Standards (NITFS) Certification Test & Evaluation Program Plan*, JIEO Circular 9008, 30 June 1993 with Errata Sheet dated 24 July 1996.

2.1.2 *Program Office Documents*

The following documents of exact issue shown (identified by revision letter only) and authorized changes form a part of this specification to the extent specified herein:

1. *Tape Formats Requirements Document (TFRD)*, S2025P, TCS-055B-BA02767-93
2. *Interface Control Document for IPL 1.0*, 1947089B, 30 August 1996

3. *National Image Transmission Format Implementation Requirements Document (NITFIRD)*, S2035A, TCS055B-BA00039-95.

2.2 Non-Government Documents

2.2.1 *Other Standards Documents*

1. *CORBA: The Common Object Request Broker Architecture and Specification, Revision 2.0,* Object Management Group, Framingham, MA, OMG Document Number 93.12.43, December, 1993.
2. T. Berners-Lee, L. Masinter, and M. McCahill. *Uniform Resource Locators (URL).* RFC 1738, CERN, Xerox PARC, University of Minnesota, December, 1994.
3. ISO / IEC 12087-2, *Programmers Imaging Kernel System (PIKS)*

2.3 Other Documents

These documents provide additional information which may facilitate a reader's understanding of the material contained within this volume:

1. *Central Imagery Office (CIO) Common Imagery Interoperability Facilities Reference Model*, Version 2.0, 20 December 1996
2. *A3I User's Concept of Operations (CONOPS),* 10 October 1995
3. *USIS 2000 CONOPS*
4. *CORBAfacilities: The Common Facilities Architecture*, Version 4.0, Object Management Group, Framingham, MA, November, 1995.
5. *CORBAservices: Common Object Services Specification*, Revised Edition, Object Management Group, Framingham, MA, March, 1995.
6. *Object Query Service Specification: Joint Submission*, Document 95.1.1, Object Management Group, Framingham, MA, December, 1993.
7. *The Central Imagery Office (CIO) A3I Requirements Document (ARD)* , Version 2.0, 7 May 1996.
8. *Central Imagery Office (CIO) and Rome Laboratory Joint Requirements Document for the United States Imagery System (USIS) 2000 Accelerated Architecture Acquisition Initiative (A3I) (CIO-2045),* 24 June 1996

9. *NIMA Library Requirements Document*,, V2.0, (NLRD-001), 13 February 1997

3 *Not Used*

4 *Interoperability Requirements*

4.1 Imagery Access Interoperability Requirements

This Section contains the minimum set of requirements needed to achieve interoperability between prototype systems exchanging imagery and image-based product data for the purpose of validating the Application Programming Interfaces specified in the *Image Access Services Specification, Ver. 1.1*.

4.1.1 *Standard Computing Environment*

4.1.1.1 Distributed Computing Services

Systems shall utilize a common set of Distributed Computing Services for exchanging information as specified in *CORBA: The Common Object Request Broker Architecture and Specification, Revision 2.0.*

4.1.1.1.1 *Object Request Broker Interoperability*

Object Request Brokers (ORBs) utilized for the Validation Test shall support the Internet Inter-ORB Protocol (IIOP) for inter-ORB communication.

4.1.2 *Standard Application Interfaces*

4.1.2.1 Common Imagery Interoperability Facilities

Systems shall conform to the Application Program Interfaces (API) as defined in *Imagery Access Services Specification, Version 1.1,* per Table 4.1.2.1-1. Table 4.1.2.1-1 indicates whether the system is a *bearer* (B) or presenter of the interface, the *audience* (A) or caller of the interface, or both.

Interfaces in Table 4.1.2.1-1 shall be implemented by each specified System in accordance with the implementation details specified in paragraph 4.1.2.1.1.

	IDEX		IE 2000 (Rome Lab)		LM-FS		UCSB ADL		CACI						Other Clients	
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
Server																
open	X		X	X		X	X	X	X	X						
close	X		X	X		X	X	X	X	X						
Parameters																
get_parameters	X		X	X		X	X	X	X	X						
set_parameters	X		X	X		X	X		X	X						
CatalogAccess																
boolean_query	X		X	X		X	X	X	X	X						
elliptical_query	X								X	X						
point_query	X								X	X						
polygonal_query	X					X			X	X						
get _results	X		X	X		X	X	X	X	X						
free_results	X		X	X		X	X	X	X	X						
ImageAccess																
get_subimage	X					X			X	X						
ProductRequest																
disseminate	X					X			X	X						
check_completion	X					X			X	X						
cancel	X					X			X	X						
create	X					X			X	X						
ArrayRequest																
open_array	X					X			X	X						
close_array	X					X			X	X						
get_region	X					X			X	X						
get_multiple_regions	X					X										

	IDEX		IE 2000 (Rome Lab)		LM-FS		UCSB ADL		CACI						Other Clients	
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
Profile&Notification																
list_queries						X										
remove_query						X										
request_notification						X										
request_push						X										
PNF_Callback																
notify					X											

Table 4.1.2.1-1 - USIGS Implementation of Imagery Access Services (TBR-002)

4.1.2.1.1 *Image Access Services Facilities Implementation Details*

4.1.2.1.1.1 Image Access Facility

Systems shall implement the Image Access Facility as specified in the *Image Access Services Specification, Ver. 1.1* in accordance with the information specified in this paragraph.

Item	Definition	Value
LocationSpec	General form of data type to define destination and source locations. A type “any”.	This type “any” will always contain a type ImageLocationSpec.

Item	Definition	Value
creation_attributes	NameValueList containing metadata describing the image being submitted to the "create" method.	For each NameValue struct: "name"= element from Table 4.1.2.1.1.3.1.1-1; "value"= string containing desired value.
RegionSpec	General form of data type to define characteristics of an image tile. A type "any".	This type "any" will contain a type DisplayRegionSpec or a TileRegionSpec. (See RegionData)

Item	Definition	Value
RegionData		
•region_spec	Data type to define the location of this region with respect to the source image from which it is taken	This type "any" will contain a type DisplayRegionSpec when used in the get_region method and will contain a TileRegionSpec when used in the get_multiple_region method. (See description of DisplayRegionSpec and TileRegionSpec)

Item	Definition	Value
•region_header	A NameValueList containing the metadata describing the data contained in this region. **General Metadata:** HorizontalVertical Size VerticalHorizontal Size Pixel DepthResolution	 “NCOLS” = number of columns in the image (N8) “NROWS” = number of rows in the image (N8) “PixelDepth” = number of significant bits per pixel (N2)

Item	Definition	Value
•element_type	The data type of the pixels contained within the region_data element: binary, unsigned bytes, signed bytes, unsigned short integers, signed short integers, unsigned long integers, signed long integers, floating point, complex numbers, double precision floating point, other representations (Per ISO / IEC 12087-2 Programmers Imaging Kernel System (PIKS))	 “BITDATA” “BYTEDATA” “SBYTEDATA” “INT2DATA” “SINT2DATA” “INT4DATA” “SINT4DATA” “FLOAT4DATA” “COMPLEXDATA” “FLOAT8DATA” default case
•region_data	A Buffer type containing the pixel data.	Actual pixel values.
Access Kind Specification	N / A	N / A

Item	Definition	Value
open_criteria	A NameValueList containing information needed to identify and authorize a user to open a server.	"UserID" = recognized and valid user identifier or login "Password" = the corresponding password for the submitted User ID
Client Context Information	N / A	N / A

Table 4.1.2.1.1.1-1 -Image Access Facility Implementation Detail

4.1.2.1.1.2 Image Access Services Parameters

Systems shall implement the Image Access Services Facilities as specified in the *Image Access Services Specification, Version. 1.1* in accordance with the parameter information specified in Table 4.1.2.1.1.2-1.

Item	Definition	Value
Parameters		
IA	**Resettable:**	
	ProductRRDS	sequence(unsigned long) = 0 - 7
	RegionParameters	RegionParameter
	GeographicDatum	string = “WGS84”
	ProductCompression	string containing one of the following values: “JPEG12” “JPEG8” “UNC” ”TFRD43”
	ProductDataFormat	string containing one of the following values: “NITF20” “TFRD”
IA (cont)	HorizMotionRate (pixels / sec)	long
	VertMotionRate (pixels / sec)	long

Item	Definition	Value
	ReadOnly: ParameterNames	NameValueList = ProductRRDS = TRUE RegionParameters = TRUE GeographicDatum =TRUE ProductCompression =TRUE ProductDataFormat = TRUE ParametersName =FALSE InterfacesSupported= FALSE
	InterfacesSupported	NameValueList "IA" = IA object reference "CA" = CA object reference "PN" = PN object reference
CA	**Resettable:** ResultAttributes GeographicDatum BrowseImageReturned	 Per Table 4.1.2.1.1.3.1.1-1 string = "WGS84" Boolean

Item	Definition	Value
CA (cont)	**ReadOnly:**	
	ParameterNames	NameValueList ResultAttributes= TRUE GeographicDatum =TRUE BrowseImageReturned =TRUE ParameterNames =FALSE InterfacesSupported =FALSE AvailableAttributes =FALSE QueryableAttributes =FALSE MaxPolygonVertices = FALSE
	InterfacesSupported	NameValueList “IA” = IA object reference “CA” = CA object reference “PN” = PN object reference
	AvailableAttributes	Per Table 4.1.2.1.1.3.1.1-1
	QueryableAttributes	Per Table 4.1.2.1.1.3.1.1-1
	MaxPolygonVertices	unsigned long

Item	Definition	Value
ImageProduct		
	Resettable:	
	N / A	
	ReadOnly:	
	ParameterNames	NameValueList ParameterNames =FALSE ReferenceAttributes= FALSE ArrayProduct = FALSE LibraryReference= FALSE
	ReferenceAttributes	"NCOL" = number of columns in image (N8) "NROWS" = number of rows in image (N8)
	ArrayProduct	Boolean
	LibraryReference	IA object reference
PNF		
	Resettable:	
	ResultAttributes	Per Table 4.1.2.1.1.3.1.1-1
	GeographicDatum	string = "WGS84"
	BrowseImageReturned	Boolean

Item	Definition	Value
PNF (cont):	**ReadOnly:** ParameterNames	 NameValueList ResultAttributes= TRUE GeographicDatum =TRUE BrowseImageReturned =TRUE ParameterNames =FALSE InterfacesSupported =FALSE AvailableAttributes =FALSE QueryableAttributes =FALSE MaxPolygonVertices = FALSE
	InterfacesSupported	NameValueList “IA” = IA object reference “CA” = CA object reference “PN” = PN object reference
	AvailableAttributes	Per Table 4.1.2.1.1.3.1.1-1
	QueryableAttributes MaxPolygonVertices	Per Table 4.1.2.1.1.3.1.1-1 long

Item	Definition	Value
ImageLocationSpec	For each Destination: -Login Name -Password -Address -Path -Host Name OR URL per "Uniform Resource Locators (URL)" RFC 1738, CERN, Xerox PARC, University of Minnesota, December, 1994	 string string string string string string

Table 4.1.2.1.1.2-1 Image Access Services Parameter Implementation Detail

4.1.2.1.1.3 Catalog Access Facility

Systems shall implement the Catalog Access Facility as specified in the *Image Access Services Specification, Ver. 1.1 Ver. 1.0* in accordance with the information specified in Table 4.1.2.1.1.3-1.

Item	Definition	Value
Browse Image Specification	Vertical Size Horizontal Size Pixel DepthResolution	N4="1024" or "256" N4="1024" or "256" Note: Vertical and Horizontal size must be the same. N1="8"

Table 4.1.2.1.1.3-1 - Catalog Access Facility Implementation Detail

4.1.2.1.1.3.1 *Standard Metadata*

USIGS Systems shall support user queries using the metadata elements specified in the *Central Imagery Office United States Imagery System Standards Profile for Imagery Archive (SPIA), Ver. 1.0.*

4.1.2.1.1.3.1.1 *Query Attribute Syntax*

Systems shall implement the Backus-Naur Form (BNF) for the boolean query syntax as defined in paragraph 6.3 of the *Image Access Services Specification, Version 1.1.* Query attributes shall be the Element name from Table 4.1.2.1.1.3.1.1-1.:

Element	Classified Testing	Unclassified Testing
ABPP (N2)		X
ACCESSID (A / N64)	X	
ANGLETONORTH (N3)		X
ASSOCTRY (A2)		
ASSRPT (A / N20)		
ATEXT (A / N255)		
AUTHORITY (A / N20)		
CAMSPECS (A / N 32)		
CAT (N5)		
CLASS (A1)	X	X
CLEVEL (N2)		
CLOUDCVR (N3)		X
CODEWORDS (A / N40)	X	
COMGEN (N2)		
CONTROL (A / N40)	X	
CTRYCD (A2)	X	X
CTRYDSN (A2)		
CTRYPROD (A2)		

Element	Classified Testing	Unclassified Testing
DATUM (A3)		
DOB(A / N6)		
DWNG (A / N6)		
DWNGEVT (A / N40)		
EQPCODE (A / N7)		
EQPMAN (A64)		
EQPNOMEN (A / N45)		
ESD (A1)	X	
EVENTNAME (A / N38)		
EVENTTYPE (A8)		
FIRSTNME (A / N 28)		
FMCONTROL(A / N32)		
GENERATION(N1)		
ICAT(A8)	X	X
ICORDS (A1)	X	X
IGEOLO (A / N60)	X	X
IMAGEID (A / N40)	X	X
IREP (A8)		X
KEYWORD (A / N 255)		X
LASTNME (A / N28)		
MAPID (A / N40)		
MEANGSD (N5)	X	
MIDNME (A / N28)		
MSNNUM (A / N7)	X	X
NBANDS (N1)		X
NCOLS (N8)		X
NIIRS (N3)	X	
NROWS (N8)		X
OBJVIEW (A6)		

Element	Classified Testing	Unclassified Testing
OBLANGLE (N5)	X	
OBTYPE (A1)		
ORDBAT(A / N3)		
OTHERCOND (A2)		
PERCOVER (N3)		
PPNUM (A / N4)		
PRODCODE (A2)	X	X
PRODCRTIME (A / N14)	X	X
PRODFMT(A9)	X	
PRODFSIZE (N12)	X	X
PRODIDNO (A / N20)		X
PRODSNME (A / N10)	X	
PRODTITLE (A / N50)	X	X
PRODUCERCD (A 2)	X	X
PRODUCERSE (A / N 6)		
PROJID (A2)		
RELEASE (A / N40)		
REQORG (A / N64)		
RPC (A1)	X	
SECTITLE (A / N40)		
SENSMODE (A / N12)		
SENSNAME (A / N18)		X
SOURCE (A / N255)		
SRP (A1)		
STEREOID (A / N40)	X	
SUBDET (A1)		
SUBQUAL (A1)		
SUNAZ(N3)		
SUNEL (N3)		

Element	Classified Testing	Unclassified Testing
TGTGEO (A / N15)	X	
TGTID (A / N15)	X	
TGTNAME (A / N38)	X	
TGTUTM (A / N16)		
TIMECOLL (A / N14)	X	X
TPP (N3)		

Table 4.1.2.1.1.3.1.1-1 CAF Query Attributes

4.1.2.1.1.4 Profile and Notification Facility

Systems shall implement the Profile and Notification Facility as specified in the *Image Access Services Specification, Ver. 1.1* in accordance with the information specified in Table 4.1.2.1.1.4-1.

Item	Definition	Value
email_address	the email address for the notifications	string
results		same as defined by the CA interface

Table 4.1.2.1.1.4-1 - Profile and Notification Facility Implementation Detail

4.1.3 *Network Access Interfaces*

4.1.3.1 Connection Element

Systems shall conform to the Transmission Control Protocol / Internet Protocol (TCP / IP). Physical network access shall be via either Fiber Distributed Data Interface (FDDI) or Asynchronous Transfer Mode (ATM).

4.1.3.2 Image Transfer Element

Systems shall conform to the File Transfer Protocol (FTP) for transferring file-based data across the network.

4.1.4 ***File Format Element***

Systems shall conform to the File Format Element specification contained in the *CIO Standards Profile for Image Distribution (SPID)* (CIO ASD SID05940000), Version 1 as defined in paragraph 3.2.1.3 with the following additions:

1. Systems may generate and / or receive imagery in the Tape Format Requirements Document (TFRD) format per the*Tape Format Requirements Document*, S2025P, TCS-055B-BA02767-93.

2. Systems may generate and / or receive imagery and image products compressed using the JPEG (8-bit), JPEG (12-bit) algorithms for NITF 2.0, or 4.3 DPCM algorithm for TFRD.

4.1.4.1 Not Used

4.1.4.2 National Image Transmission Format Standards (NITFS) Files

The following requirements shall apply to all NITF 2.0 files generated by Systems.

4.1.4.2.1 *NITF Header*

Systems shall populate the NITF 2.0 header fields as specified in Table A-I of the *CIO Standard Profile for Image Distribution (SPID).* Specific implementation of NITF 2.0 header fields shall be as specified in Appendix 7.1-Table 7.1-1.

4.1.4.2.2 *Image Data Type*

4.1.4.2.2.1 Image Sub-Header

All Systems shall populate the NITF 2.0 image sub-header fields as specified in Table A-II of the *CIO Standard Profile for Image Distribution (SPID).* Specific implementation of NITF 2.0 header fields shall be constrained as specified in Appendix 7.2-Table 7.2-1.

4.1.4.2.2.2 Image Data

####### 4.1.4.2.2.2.1 *Image Data Compression*

Systems generating image files in NITF 2.0 format shall provide the image data in either uncompressed format or compress the image data using one of the following algorithms:

1. Eight-bit image data shall be compressed using JPEG DCT as specified in *Joint Photographic Experts Group for the National Image Transmission Format (NITFS)*, MIL-STD-188-198A.
2. Image data greater than eight-bits shall be compressed using 12-bit JPEG DCT as specified in paragraph 30.3 of the *National Image Transmission Format Implementation Requirements Document (NITFIRD)*, S2035A, TCS055B-BA00039-95.

4.1.4.2.3 *Symbol Data Type*

4.1.4.2.3.1 Symbol Sub-Header

All Systems shall populate the NITF 2.0 symbol sub-header fields as specified in Table VI of *the National Imagery Transmission Format-Version 2.0 (MIL-STD-2500A)*. Specific implementation of NITF 2.0 symbol sub-header fields shall be constrained as specified in Appendix 7.3-Table 7.3-1.

4.1.4.2.3.2 Symbol Data

All annotation requirements (including alphanumeric labels) shall be satisfied by Systems in accordance with *the National Imagery Transmission Format-Version 2.0 (MIL-STD-2500A)*, paragraph 5.6.

4.1.4.2.4 *Text Data Type*

4.1.4.2.4.1 Text Sub-Header

Systems shall populate the NITF 2.0 text sub-header fields as specified in Table VI of *the National Imagery Transmission Format-Version 2.0 (MIL-STD-2500A)*. Specific implementation of NITF 2.0 text sub-header fields shall be constrained as specified in Appendix 7.4-Table 7.4-1.

4.1.4.2.4.2 Text Data

Systems text data sub-files shall be created in accordance with the *National Imagery Transmission Format-Version 2.0 (MIL-STD-2500A)*, paragraph 5.8.

4.1.4.3 Tape Format Requirements Document (TFRD) Files

4.1.4.3.1 *Image Data*

USIGS Systems generating image files in TFRD format shall format the image data as specified in paragraph 3.1.4 of the *Tape Format Requirements Document*, S2025P, TCS-055B-BA02767-93.

4.1.4.3.1.1 Image Data Compression

Systems generating image files in TFRD format shall compress the image data using the Differential Pulse Code Modulation (DPCM) algorithm as specified in Appendix 10.3 of the *Tape Format Requirements Document*, S2025P, TCS-055B-BA02767-93.

5 *Not Used*

6 *Not Used*

7 Appendices

7.1 NITF 2.0 Image Header Format

Table 7.1-1 contains additional implementation details supplementing information contained in the *CIO Standard Profile for Image Distribution*, Table A-I.

Field	Value	Comment
FSCLAS	(Generated)	Highest classification for all information contained within the NITF file.
FSCODE	(Generated)	xxxxbyyyyyyy, where xxxx is security codeword; b is ASCII space; and yyyyyyy is control channel caveat
FSCTLH	(Generated)	wwwwwwbz where wwwwww is dissemination restriction word; b is ASCII space; and z is security indicator (SECIND)
FSREL	(Generated)	Per implementing PO / User organization requirements
FSCTLN	(Generated)	Per implementing PO / User organization requirements
FSDWNG	(Generated)	Per implementing PO / User organization requirements
FSDEVT	(Generated)	Per implementing PO / User organization requirements
FSCOP	00000	Not Used
FSCPYS	00000	Not Used
ONAME	(Generated)	Per implementing PO / User organization requirements
OPHONE	Spaces	Not Used
NUMDES	000	Not Used
NUMRES	000	Not Used

Field	Value	Comment
UDHDL	00000	Not Used
XHDL	(Generated)	Lenngth of all incorporated controlled tag extensions plus 3

Table 7.1-1NITF Image Header Implementation for IAS Validation Testing

7.2 NITF 2.0 Image Sub-Header Format

Table 7.2-1 contains additional implementation details supplementing information contained in the *CIO Standard Profile for Image Distribution*, Table A-II.

Field	Value	Comment
IID	0000000000	Actual Image ID is in ITITLE
ITITLE	(Generated)	Original 40 character IMP ID or 24 character image ID followed by spaces
ISCLAS	(Generated)	classification for image data in this subfile
ISCODE	(Generated)	xxxxbyyyyyyy, where xxxx is security codeword; b is ASCII space; and yyyyyyy is control channel caveat
ISCTLH	(Generated)	wwwwwwbz where wwwwww is dissemination restriction word; b is ASCII space; and z is security indicator (SECIND)
ISREL	(Generated)	Per implementing PO / User organization requirements
ISCTLN	(Generated)	Per implementing PO / User organization requirements
ISDWNG	(Generated)	Per implementing PO / User organization requirements

Field	Value	Comment
ISDEVT	(Generated)	Per implementing PO / User organization requirements
ISOURCE	(Generated)	Use appropriate classification and source acronyms
PVTYPE	INT	Integer format
IREP	(Generated)	MONO for monochrome; MULTI for multi-band imagery
PJUST	R	Pixels are right justified
IC	NC or C3	NC for uncompressed; C3 for JPEG compressed
COMRAT	(Generated)	Omit if IC=NC; Valid rate if IC=C3
NBPP	8 or 16	8 for 8 bit images; 16 for 9-16 bit images
IDLVL	001	
IALVL	000	
ILOC	0000000000	First pixel is not offset
IMAG	(Generated)	1.0 for full resolution (R0); / 2 for half resolution (R1) through / 128 for R7
UDIDL	00000	No user defined data
IXSHDL	(Generated)	Length of all incorporated controlled extensions plus 3
IXSOFL	000	No overflow required

Table 7.2-1 - NITF Image Sub-Header Implementation for IAS Validation Testing

7.3 NITF 2.0 Symbol Sub-Header Format

Table 7.3-1 contains implementation details supplementing information contained in the *National Imagery Transmission Format-Version 2.0 (MIL-STD-2500).*, Table VI.

Field	Description	Size	Value Range	Type	Value	Comment
SY	File Part Type	2	SY	R	SY	NITF 2.0 reqmts(Note A)
SID	Symbol ID	10	Alphanumeric	R	(Generated)	Note A
SNAME	Symbol Name	20	Alphanumeric	O	(Generated)	Note A
SSCLAS	Symbol Security Classification	1	T,S,C,R, or U	R	(Generated)	Based upon classification of Symbol or per system high classification
SSCODE	Symbol Codewords	40	Alphanumeric	O	(Generated)	xxxxbyyyyyyy, where xxxx is security codeword; and b is an ASCII Space; and YYYYYYY is control channel caveat based on classification of Symbol or per system high classification
SSCTLH	Symbol Control and Handling	40	Alphanumeric	O	(Generated)	WWWWWWbZ, where WWWWWW is the Dissemination Restriction word (e.g. NOFORN, 6 ASCII Spaces); and b is an ASCII Space; and Z is the security indicator value, if any or space
SSREL	Symbol Releasing Instructions	40	Alphanumeric	O	(Generated)	Note C
SSCAUT	Symbol Classification Authority	20	Alphanumeric	O	DoD S-5210.51 (M-1)	Note C

Field	Description	Size	Value Range	Type	Value	Comment
SSCTLN	Symbol Security Control Number	20	Alphanumeric	O	(Spaces)	Note C
SSDWNG	Symbol Security Downgrade	6	Alphanumeric	O	(Generated)	Note C
SSDEVT	Symbol Downgrading Event	40	Alphanumeric	C	(Omit)	Note A
ENCRYP	Encryption	1	0=Not Encrypted 1=Encrypted	R	0	Note A
STYPE	Symbol Type	1	B for bit-mapped; C for CGM; O for Object	R	(Generated)	CGM recommended for all symbol and label implementations
NLIPS	Number of lines Per Symbol	4	0-9999	R	0	Note A
NPIXPL	Number of Pixels per line	4	0-9999	R	0	Note A
NWDTH	Line Width	4	0-9999	R	0	Note A
NBPP	Number of bits Per Pixel	1	0-8	R	0	Note A
SDLVL	Display Level	3	1-999	R	(Generated)	(Note A)
SALVL	Attachment Level	3	0-998	R	(Generated)	(Note A)
SLOC	Symbol Location	10	rrrrrccccc	R	(Generated)	(Note A)
SLOC2	Second Symbol Location	10	rrrrrccccc	O	(Generated)	(Note A)
SCOLOR	Symbol Color	1	Note A	R	(Space)	(Note A)
SNUM	Symbol Number	6	Note A, table IV	O	000000	(Note A)
SROT	Symbol Rotation	3	0-359	R	000	(Note A)
NELUT	Number of LUT Entries	3	0-256	R	000	(Note A)

Field	Description	Size	Value Range	Type	Value	Comment
DLUT	Symbol LUT Data	2	Pixel values in Order	C	(omit)	(Note A)
SXSHDL	Extended Subheader Data Length	5	0-08833	R	(Generated)	(Note A)
SXSOFL	Extended Subheader Overflow	3	0-999	C	(Gen/omit)	(Note A)
SXSHD	Extended Subheader Data	*	Controlled Tagged Record Extensions	C	(Gen/omit)	(Note A)

Table 7.3-1 NITF Symbol Sub-Header Implementation for IAS Validation Testing

7.4 NITF 2.0 Text Sub-Header Format

Table 7.4-1 contains implementation details supplementing information contained in the *National Imagery Transmission Format-Version 2.0 (MIL-STD-2500).*, Table XIII.

Field	Description	Size	Value Range	Type	Value	Comment
TE	File Part Type	2	TE	R	TE	NITF 2.0 reqmts(Note A)
TEXTID	Text ID	10	Alphanumeric	R	(Generated)	Note A
TXTDT	Text Date & Time	14	DDHHMMSSZMONYY	R	(Generated)	The time (zulu) of the origination of the text where DD is the day of the month (01-31), HH is the hour (00-23), mm is the minute (00-59), the character Z, MON is the first three characters of the month, and YY is the last two digits of the year.
TXTITL	Text Title	80	Alphanumeric	O	(Generated)	Note A

Field	Description	Size	Value Range	Type	Value	Comment
TSCLAS	Text Security Classification	1	T,S,C,R, or U	R	(Generated)	Based upon classification of Text or per system high classification
TSCODE	Text Codewords	40	Alphanumeric	O	(Generated)	xxxxbyyyyyyy, where xxxx is security codeword; and b is an ASCII Space; and YYYYYYY is control channel caveat based on classification of Symbol or per system high classification
TSCTLH	Text Control and Handling	40	Alphanumeric	O	(Generated)	WWWWWWbZ, where WWWWWW is the Dissemination Restriction word (e.g. NOFORN, 6 ASCII Spaces); and b is an ASCII Space; and Z is the security indicator value, if any or space
TSREL	Text Releasing Instructions	40	Alphanumeric	O	(Generated)	Note C
TSCAUT	Text Classification Authority	20	Alphanumeric	O	DoD S-5210.51 (M-1)	Note C
TSCTLN	Text Security Control Number	20	Alphanumeric	O	(Generated)	Note C
TSDWNG	Text Security Downgrade	6	Alphanumeric	O	(Generated)	Consistent with OADR / Note C
TSDEVT	Text Downgrading Event	40	Alphanumeric	C	Generated)	Note A
ENCRYP	Encryption	1	0=Not Encrypted 1=Encrypted	R	0	Note A
TXTFMT	Text Format	3	JTC, STA, OTH	R	STA	ASCII to be used for all text
TXSHDL	Extended Subheader Data Length	5	0-09677	R	(Generated)	Note A

Field	Description	Size	Value Range	Type	Value	Comment
TXSOFL	Extended Subheader Overflow	3	0-999	C	(Gen/omit)	Note A
TXSHD	Extended Subheader Data	*	Controlled Tagged Record Extensions	C	(Gen/omit)	Note A

Table 7.4-1 NITF Text Sub-Header Implementation for IAS Validation Testing