STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL | 95-16B

INSTRUCTIONS

1. The preparing activity must complete blocks 1,2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

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I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER **MIL-STD-188-198A**	2. DOCUMENT DATE (YYMMDD) **931215**

3. DOCUMENT TITLE
Joint Photographic Experts Group (JPEG) Image Compression for the National Imagery Transmision Fomat Standard

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

This change provides for a minimum pixel value storage mechanism for each scan in the JPEG DCT stream. See attached sheets.

Note: This is the OLD APP8 TAG !!

5. REASON FOR RECOMMENDATION
This change request supersedes 95-016A. This change is necessary as part of data pre-processing and post-processing steps necessary for the 12 bit JPEG/DCT. These changes decrease the image quality loss produced by the JPEG/DCT compression for a given compression ratio.

6. SUBMITTER

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8. PREPARING ACTIVITY **NATIONAL IMAGERY AND MAPPING AGENCY**

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c. ADDRESS *(Include Zip Code)*	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340

5.2.3.3.5.5.3 NITF APP6/(Extension NITF0001) image block minimum value. The NITF APP6 application data segment with an ID string "NITF0001.A" contains the minimum value for each scan of an original uncompressed image block before any preprocessing or compression steps are performed. The ID string follows the form NITFxxxx.V, where xxxx is the extension number and V is the version number. The extension number is 0001 and the current version identifier is A.

This application segment also stores the image block index values which specify the relative image block row and image block column position of the frame. The index values are 1 based, with the first FAF at position (1,1).

When the NITF tag for the amplitude re-mapping process is used, (IOMAPA), the minimum values stored in APP6/(Extension NITF0001) are utilized by the amplitude re-mapping process described in paragraph 30.2.3 of MIL-STD-2500A. When the NITF amplitude re-mapping tag is used, an APP6/(Extension NITF0001) application data segment must exist for each image block or frame compressed with the 12-bit JPEG algorithm. When using the 12 bit JPEG DCT extended sequential transmission mode with monochrome imagery, the NScan field shall be fixed at 1.

Table XVII contains the format for the APP6/(Extension NITF0001) segment.

TABLE XVII. NITF JPEG APP6/(Extension NITF0001) segment format for image block minimum values.

Offset	Field Value	Field Name	Length	Comments
0	0xFFE6	APP6	2	NITF APP Data Marker
2	Variable	Lp	2	Seg Length (See Note 4)
4	0x4E495446 0x30303031 0x2E41 0x00	ID_STRING	11	Null terminated ID string used to identify the APP6 tag as the minimum pixel amplitude storage extension "NITF0001.A"
15	Generated (see note 1)	Image Block Row No.	4	(See Note 3)
19	Generated (see note 1)	Image Block Col No.	4	(See Note 3)
23	Generated (see note 2)	NScan	2	Number of Scans per Frame
25	Generated (see note 2)	Min_Value_1	2	Min. value of Scan #1 in Image Block
…	…	…	…	…
C	Generated (see note 2)	Min_Value_NScan	2	Min. value of Scan #Nscan in Image Block
C	0x0000 (see note 5)	Flags	2	Reserved for Future Use

Notes:

1) Value is 4 byte unsigned binary integer representation
2) Value is 2 byte unsigned binary integer representation
3) Image block index relative to the transmitted image. The top left image block is indexed (row, column) -> (1,1)
4) Length Lp = 25 + (2*NScan)
5) The offset label of C is used for the conditional offsets dependent on the value of the NScan field.

Figures XVIII and XIX show the location of the APP6/(Extension NITF0001) application data segments relative to other NITF components.

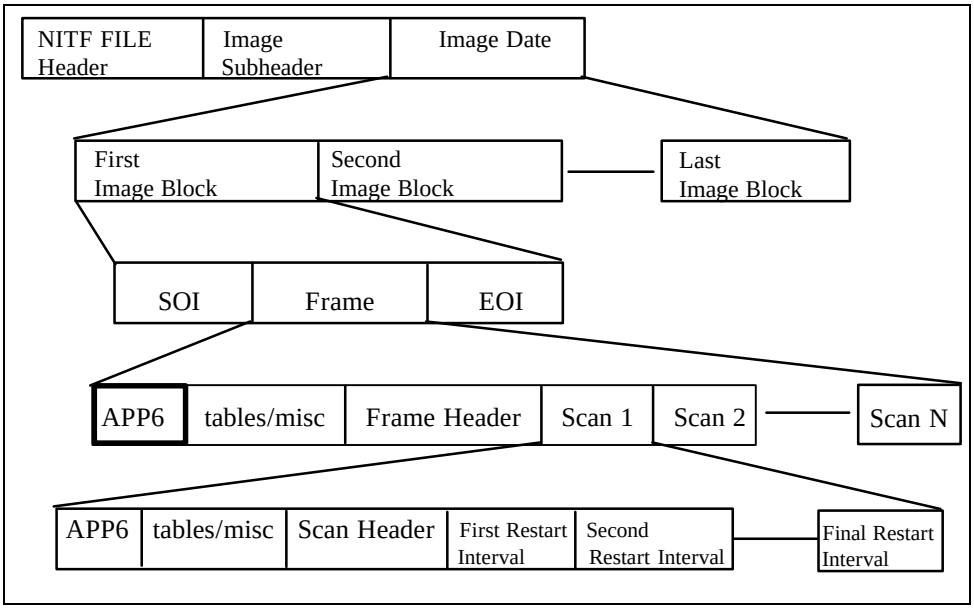

FIGURE XVIII. NITF 12 bit JPEG/DCT multiple block file structure (IMODE = BorP).

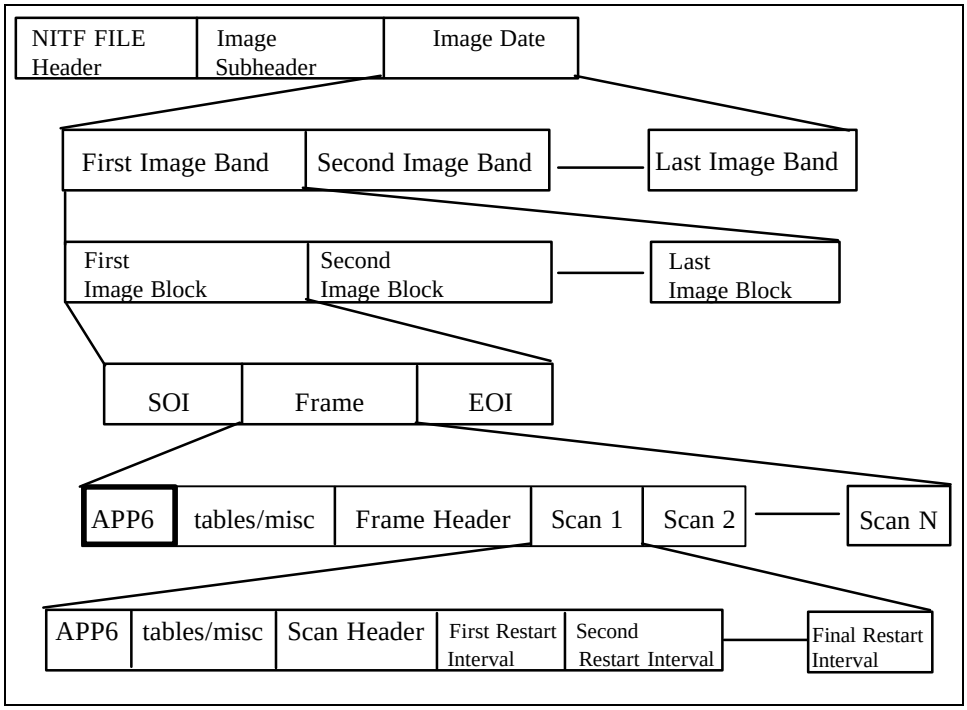

FIGURE XIX. NITF 12 bit JPEG/DCT multiple block file strucutre (Mode = S).