



**NATO Air Force Armaments Group (NAFAG)**  
**Air Group IV (Reconnaissance and Surveillance)**  
**NSIF Custodian Support Team**

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ERRATA Sheet  
NSIF CST (AG IV)/E-2

NATO Air Group IV  
NATO Secondary Imagery Format  
Custodian Support Team  
Errata Sheet to STANAG 4545

This document defines known editorial and/or technical errors in STANAG 4545 as of the date of release. Users of STANAG 4545 should be aware that these corrections will be included in the next official release of the STANAG by the NATO Standardization Agency (NSA). This document is provided to the NATO user community for information only. The document referenced below is the current release of the STANAG and forms the baseline for use of the standard.

It should be noted that editorial (or administrative) changes will be incorporated into the next amendment at the direction of the STANAG Custodian. It is expected that changes will be collected in the form of this Errata Sheet until the Custodian decides that sufficient changes are identified to warrant an amendment. Technical changes will similarly be identified in this document until the Custodian and the 4545 Custodial Support Team (4545 CST) determine that a new edition is required. At that point, all outstanding changes will be incorporated into a ratification draft for the next edition and this draft will be forwarded to the nations for formal ratification.

Additions to this Errata Sheet will be cumulative. Additional changes will be added to this list until a revision to the STANAG is generated. Therefore, use of the latest list to supplement the STANAG is advised in developmental programs.

This document is identified by the Errata Sheet number and date. The following information is provided as reference to identify the baseline against which this document is to be applied.

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<b>Document Name:</b>		<b>STANAG Number:</b>	
	NATO Secondary Image Format		STANAG 4545
<b>Edition Number:</b>		<b>Amendment Number:</b>	
	Edition 1		Amendment 1

**Administrative Changes:**

The following administrative changes will be incorporated into the next amendment or edition as appropriate.

The following changes were proposed at the 4545 CST meeting of 29-30 January 2002, as a result of the review conducted by the U.S. Joint Interoperability Test Command (JITC) of the complexity level tables in STANAG 4545, the ISO BIIF profile, and U.S. MIL-STD-2500B.

<b>Document Location</b>	<b>Current Text</b>	<b>New Text</b>
Page E-1, Table Entry "Multispectral (MULTI) No Compression", columns for CLEVEL 5 and 6	2 to 256 Bands 8, 16, 32, and 64-Bits per Pixel per Band With and Without LUT in each Band IC = NC, NM IMODE = B, P, R, S	2 to 255 Bands 8, 16, 32, and 64-Bits per Pixel per Band With and Without LUT in each Band IC = NC, NM IMODE = B, P, R, S
Page E-2, Table Entry "JPEG Lossless Compression 24-Bit Colour (RGB)", all columns	Three Bands 8-Bit Sample Per Band (NBPP) With or Without LUT IC=C5, M5 IMODE=P (This feature is optional for implementation.)	Three Bands 8-Bit Sample Per Band (NBPP) No LUT IC=C5, M5 IMODE=P (This feature is optional for implementation.)
Page E-2, Table Entry "Bi-Level Compression (MONO)", all columns	Single Band/Block 1-Bit per Pixel (NBPP) With and without LUT IC = C1, M1 IMODE = B COMRAT = 1D, 2DS, 2DH (Image size may not exceed 8192 Pixels per Row by 2560 Pixels per Column.)	Single Band Single Block 1-Bit per Pixel (NBPP) With and Without LUT IC = C1, M1 IMODE = B COMRAT = 1D, 2DS, 2DH (Image size may not exceed 2560 Pixels per Row by 8192 Pixels per Column.)
Page E-2, Table Entry "Bi-Level Compression (RGB/LUT)", all columns	Three Band/Block 1-Bit per Pixel (NBPP) With and without LUT IC = C1, M1 IMODE = B COMRAT = 1D, 2DS, 2DH (Image size may not exceed 8192 Pixels per Row by 2560 Pixels per Column.)	Single Band Single Block 1-Bit per Pixel (NBPP) With LUT IC = C1, M1 IMODE = B COMRAT = 1D, 2DS, 2DH (Image size may not exceed 2560 Pixels per Row by 8192 Pixels per Column.)

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<i>Document Location</i>	<i>Current Text</i>	<i>New Text</i>
Page E-2, Table Entry "VQ Compression", all columns	Single Band/Block 8-Bits per Pixel (NBPP) 4 x 4 Kernel organised in 4 Tables IC = C4, M4 IMODE = B	Single Band 8-Bits per Pixel (NBPP) 4 x 4 Kernel organised in 4 Tables IC = C4, M4 IMODE = B
Page E-2, Table Entry Multispectral (MULTI) Individual Band JPEG Compression", columns for CLEVEL 5 and 6	2 to 256 Bands 8 and 12-Bits per Pixel per Band No LUT IC = C3, M3 IMODE = B, S	2 to 255 Bands 8 and 12-Bits per Pixel per Band No LUT IC = C3, M3 IMODE = B, S
Page E-2, Table Entry Multispectral (MULTI) Multi-Component Compression	2 to 256 Bands 8 and 12-Bits per Pixel per Band No LUT IC = C6, M6 IMODE = B, P, S (This feature is optional for implementation.)	2 to 255 Bands 8 and 12-Bits per Pixel per Band No LUT IC = C6, M6 IMODE = B, P, S (This feature is optional for implementation.)
Page E-2, Table Entry Elevation Data (NODISPLY)	Single Band 8, 12, 16, 32, and 64-Bits per Pixel (NBPP) No LUT IC = NC IMODE = B ICAT = DTEM, ISUBCATn code from DIGEST, Part3, Annex B (or BCS Spaces (0x20) Applicable TRE: Geospatial Support Data Extensions (GEOSDE), DIGEST, Part 2, Annex D (This feature is optional for implementation.)	Single Band 8, 12, 16, 32, and 64-Bits per Pixel (NBPP) No LUT IC = NC IMODE = B ICAT = DTEM, ISUBCATn code from DIGEST, Part3, Section 7 (or BCS Spaces (0x20) Applicable TRE: Geospatial Support Data Extensions (GEOSDE), DIGEST, Part 2, Annex D (This feature is optional for implementation.)
Page E-3, Table Entry Matrix Data (NODISPLY)	2 TO 256 Band 8, 16, 32, and 64-Bits per Pixel per Band No LUT in any band IMODE = B, P, R, S This feature is optional for implementation.)	2 TO 255 Band 8, 16, 32, and 64-Bits per Pixel per Band No LUT in any band IMODE = B, P, R, S This feature is optional for implementation.)

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<i>Document Location</i>	<i>Current Text</i>	<i>New Text</i>
Page C-1-29, Table C-1-3(A), Field BMRLNTH, Name Column	<p><u>Block Mask Record Length.</u> This field is included if the value of the IC field is NM, M1, M3, M4, or M5. It identifies the length of each Block Mask Record in bytes. When present, the length of each Block Mask Record is 4 bytes. The total length of all the Block Mask Records is equal to BMRLNTH ? NBPR ? NBPC ? NBANDS (one 4 byte record for each block of each band in the image). If all of the image blocks are recorded, this value may be set to 0x0000, and the conditional BMRnBNDm fields are not recorded/transmitted. Otherwise, the value may be set to 0x0004, and the conditional BMRnBNDm fields are recorded/transmitted and can be used as an offset index for each image block in each band of the image. If this field is present, but coded as 0x0000, then only a Pad Pixel Mask is included.</p>	<p><u>Block Mask Record Length.</u> This field is included if the value of the IC field is NM, M1, M3, M4, or M5. It identifies the length of each Block Mask Record in bytes. When present, the length of each Block Mask Record is 4 bytes. If all of the image blocks are recorded, this value may be set to 0x0000, and the conditional BMRnBNDm fields are not recorded/transmitted. Otherwise, the value may be set to 0x0004, and the conditional BMRnBNDm fields are recorded/transmitted and can be used as an offset index for each image block of the image. If this field is present, but coded as 0x0000, then only a Pad Pixel Mask is included.</p>
Page C-1-29, Table C-1-3(A), Field TMRLNTH, Name Column	<p><u>Pad Pixel Mask Record Length.</u> This field is included if the value of the IC field is NM, M1, M3, M4, or M5. It identifies the length of each Pad Pixel Mask Record in bytes. When present, the length of each Pad Pixel Mask Record is 4 bytes. The total length of the Pad Pixel Mask Records is equal to TMRLNTH ? NBPR ? NBPC ? NBANDS (one 4 byte record for each block for each band in the image). If none of the image blocks contain Pad Pixels, this value is set to 0x0000, and the conditional TMRnBNDm fields are not recorded/transmitted. If the value of the IC field is M3, the value shall be set to 0x0000. If this field is present, but coded as 0x0000, then a Block Mask is included.</p>	<p><u>Pad Pixel Mask Record Length.</u> This field is included if the value of the IC field is NM, M1, M3, M4, or M5. It identifies the length of each Pad Pixel Mask Record in bytes. When present, the length of each Pad Pixel Mask Record is 4 bytes. If none of the image blocks contain Pad Pixels, this value is set to 0x0000, and the conditional TMRnBNDm fields are not recorded/transmitted. If the value of the IC field is M3, the value shall be set to 0x0000. If this field is present, but coded as 0x0000, then a Block Mask is included.</p>

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<i>Document Location</i>	<i>Current Text</i>	<i>New Text</i>
Page C-1-30, Table C-1-3(A), Notes following TPXCD Field	<p>..... Start for each BMRnBNDm and TMRnBNDm record.</p> <p>NOTE: The BMRnBNDm record repeats; one 4 byte record for each block of each band in the image.</p>	<p>.....</p> <p>NOTE: The BMRnBNDm record repeats; one 4 byte record for each block, and for IMODE S, one record for each block of each band in the image. The number of BMRnBNDm records in the IMODE B, P and R case will be NBPR * NBPC and in the IMODE S case will be NBANDS (or XBAND) * NBPR * NBPC.</p>
Page C-1-30, Table C-1-3(A), Field BMRnBNDm, Name Column	<p><u>Block n, Band m Offset</u>. This field shall contain the n<sup>th</sup> Block Mask Record of band m. It is recorded/transmitted only if the BMRLNTH field does not contain zeros (0x0000). The field shall contain an offset in bytes from the beginning of the blocked image data to the first byte of block n of band m. If block n of the image data of band m is not recorded/transmitted, the offset value is defaulted to 0xFFFFFFFF. If the value of the IMODE field is S, the offsets for all blocks in band 1 are recorded followed by block offsets for band 2, etc. (band sequential). The number of BMR for each band is NBPR ? NBPC.</p>	<p><u>Block n, Band m Offset</u>. This field shall contain the n<sup>th</sup> Block Mask Record of band m. It is recorded/transmitted only if the BMRLNTH field does not contain zeros (0x0000). The field shall contain an offset in bytes from the beginning of the blocked image data to the first byte of block n of band m. If block n of the image data of band m is not recorded/transmitted, the offset value is defaulted to 0xFFFFFFFF.</p>
Page C-1-30, Table C-1-3(A), Field BMRnBNDm, Value Range Column	<p>Unsigned binary integer  Increment n prior to m  0?n?NBPR ? NBPC - 1  0?m?  max(value NBANDS field, value XBANDS field  (Default is 0xFFFFFFFF if the block is not recorded)</p>	<p>Unsigned binary integer  For IMODEs B, P, R: Increment n only; m is always 1.  0≤n≤NBPR * NBPC -1</p> <p>For IMODE S:  Increment n prior to m  0?n?NBPR ? NBPC - 1  0?m?  max(NBANDS, XBANDS  (Default is 0xFFFFFFFF if the block is not recorded)</p>
Page C-1-30, Table C-1-3(A), Notes following BMRnBNDm Field	<p>.....</p> <p>NOTE: The TMRnBNDm record repeats; one 4 byte record for each block of each band in the image. This results in a table containing an offwet value (or 0xFFFFFFFF) for each block of each band of the image.</p>	<p>.....</p> <p>NOTE: The TMRnBNDm record repeats; one 4 byte record for each block, and for IMODE S, one record for each block of each band in the image. The number of TMRnBNDm records in the IMODE B, P and R case will be NBPR * NBPC and in the IMODE S case will be NBANDS (or XBAND) * NBPR * NBPC.</p>

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<i>Document Location</i>	<i>Current Text</i>	<i>New Text</i>
Page C-1-30, Table C-1-3(A), Field TMRnBNDm, Name Column	<u>Pad Pixel n, Band m.</u> This field shall contain the n <sup>th</sup> Pad Pixel for band m. It is recorded/transmitted only if the TMRLNTH field does not contain zeros (0x0000). The field shall contain an offset in bytes from the beginning of the blocked image data to the first byte of block n of the image data of band m if block n contains Pad Pixels, or the default value 0xFFFFFFFF to indicate that this block does not contain Pad Pixels. The offsets for all blocks in band 1 are recorded followed by block offsets for band 2, etc. (band sequential). The number of TMR for each band is NBPR ? NBPC.	<u>Pad Pixel n, Band m.</u> This field shall contain the n <sup>th</sup> Pad Pixel for band m. It is recorded/transmitted only if the TMRLNTH field does not contain zeros (0x0000). The field shall contain an offset in bytes from the beginning of the blocked image data to the first byte of block n of the image data of band m if block n contains Pad Pixels, or the default value 0xFFFFFFFF to indicate that this block does not contain Pad Pixels
Page C-1-30, Table C-1-3(A), Field TMRnBNDm, Value Range Column	Unsigned binary integer Increment n prior to m 0?n?NBPR ? NBPC - 1 0?m? max(NBANDS,XBANDS) (Default is 0xFFFFFFFF if the block does not contain Pad Pixels)	Unsigned binary integer For IMODEs B, P, R: Increment n only; m is always 1. 0≤n≤NBPR * NBPC -1  For IMODE S: Increment n prior to m 0?n?NBPR ? NBPC - 1 0?m? max(NBANDS,XBANDS) (Default is 0xFFFFFFFF if the block does not contain Pad Pixels)
Page C-6 (Annex C), Paragraph 15, Attachment Level (ALVL), Line 7 (6 <sup>th</sup> sentence)	The Segment having minimum DLVL shall have ALVL 000 and a CCS location (0,0).	The Segment having minimum DLVL shall have ALVL 000.

**Technical Changes:**

The following technical changes will be incorporated into the next edition.

<i>Document Location</i>	<i>Current Text</i>	<i>New Text</i>
Page C-10 (Annex C), Add new paragraph 17.b (4)	<none>	<see text on next line>
<p>For some varieties of large image arrays, the nature of the image data is such that it should be organized as a single block (un-blocked) or in large block sizes that exceed the 8192 pixel maximum range size of the NPPBH and NPPBV data fields. In these cases, the large block option provides increased flexibility for large arrays. In the large block option, when either or both of the image subheader fields, NBPR and/or NBPC are set to the value 0001, the respective value for the NPPBV and/or NPPBH field may be set to 0000. In this case, the block size defaults to the respective horizontal and/or vertical size identified in the NROWand/or NCOL fields. This option allows for an image array to be a single large block, or a single row of blocks that are large in the row dimension, or a single column of blocks that are large in the column dimension. See Table C-1-3 description for NPPBH and NPPBV.</p>		

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Page C-1-25, Table C-1-3, NPPBH Field, Name column	Number of Pixels Per Block Horizontal. This field shall contain the number of pixels horizontally in each block of the image. It shall be the case that the product of the values of the NBPR field and the NPPBH filed is greater than or equal to the value of the NCOLS field ( $NBPR * NPPBH \geq NCOLS$ )	Number of Pixels Per Block Horizontal. This field shall contain the number of pixels horizontally in each block of the image. It shall be the case that the product of the values of the NBPR field and the NPPBH filed is greater than or equal to the value of the NCOLS field ( $NBPR * NPPBH \geq NCOLS$ ). When NBPR is "0001", setting the NPPBH value to "0000" designates that the number of pixels horizontally is specified by the value in NCOLS.
Page C-1-25, Table C-1-3, NPPBH Field, Value Range column	BCS-N positive integer 0001 to 8192	BCS-N positive integer 0000 or 0001 to 8192
Page C-1-26, Table C-1-3, NPPBV Field, Name column	Number of Pixels Per Block Horizontal. This field shall contain the number of pixels horizontally in each block of the image. It shall be the case that the product of the values of the NBPC field and the NPPBV filed is greater than or equal to the value of the NROWS field ( $NBPC * NPPBV \geq NROWS$ ).	Number of Pixels Per Block Horizontal. This field shall contain the number of pixels horizontally in each block of the image. It shall be the case that the product of the values of the NBPC field and the NPPBV filed is greater than or equal to the value of the NROWS field ( $NBPC * NPPBV \geq NROWS$ ). When NBPC is "0001", setting the NPPBV value to "0000" designates that the number of pixels vertically is specified by the value in NROWS.
Page C-1-26, Table C-1-3, NPPBV Field, Value Range column	BCS-N positive integer 0001 to 8192	BCS-N positive integer 0000 or 0001 to 8192