

NOTICE OF
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MIL-STD-1820
NOTICE 1
17 April 1994

MILITARY STANDARD

GENERIC TRANSFORMED DATA BASE (GTDB) DESIGN STANDARD

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1. THE FOLLOWING PAGES OF MIL-STD-1820 HAVE BEEN REVISED AND SUPERSEDE THE PAGES LISTED

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
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2 RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS

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5.2.1 GAE Record Order. The record order of the GAE file shall be as follows:

```

GAE Identifier Record
File Name Record
Gaming Area Header Record
GTDB Parameter Record
Boundary Point Records
Model List Record(s) [optional]
for each SLOD
    SLOD Parameter Record
        Keep-List Record(s) [optional]
        Delete-List Record(s) [optional]
        Level-List Record(s) [optional]
        General Thinning Parameters Record
        Specific Thinning Parameters Record(s) [optional]
        for each area block
            Area Block Parameter Record
for each island
    Island Record
        Island LOD Record(s)
        Island Boundary Point Records
Option Record
Affected AB Count Record
for each affected area block
    Affected AB ID Record
Checksum Record

```

5.2.2 GAE Field Structure. The field structure of each of these records shall be as described below.

5.2.2.1 GAE Identifier Record. This record shall consist of the ASCII string 'GAE'.

5.2.2.2 GAE File Name Record. This record shall consist of the ASCII string 'ssGnnnnnnGA.B', where "ss" is the security code and "nnnnnn" is the GTDB identifier.

5.2.2.3 Gaming Area Header Record. The field structure of this record shall be as follows:

```

Project 2851 GTDB Catalog ID Field
GTDB Version Number Field
Last Update Date Field
Compilation Date Field
Security Level Field
Tape ID Field
Data Location Field
GTDB Directory Field

```

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5.2.2.4 GTDB Parameters Record. The field structure of this record shall be as follows:

Coordinate System Parameters Subrecord
 Boundary Point Count Field
 Terrain Polygons Flag Field
 Terrain Grid Flag Field
 Terrain Grid Source Flag Field
 Match Terrain At SLODs Flag Field
 Vertex Normals Flag Field
 Synthetic Culture Flag Field
 Fragment Culture Flag Field
 Decompose Culture Flag Field
 Maximum Number of Edges Field
 Use Models Flag Field
 Decompose Models Flag Field
 Maximum Number of Model Polygon Edges Field
 Separation Planes Flag Field
 Expand Lineals Flag Field
 Fragment Point Light Strings Flag Field
 Model List Count Field
 SLOD Count Field (Always one or greater)
 Island Count Field
 Specific Areal Texture Parameters Subrecord
 Generic Areal Texture Parameters Subrecord
 Specific Model Texture Parameters Subrecord
 Generic Model Texture Parameters Subrecord
 User Option Field

5.2.2.4.1 Coordinate System Parameters Subrecord. The field structure of this record shall be as follows:

Coordinate System Field
 Datum ID Field
 Eccentricity Field
 Semi-Major Axis Field
 Datum Shift Field
 Elevation Reference Field
 Longitudinal Origin Field
 Latitudinal Origin Field
 Origin of Eastings Field
 Origin of Northings Field
 Scale Factor Field
 First Standard Parallel Field
 Second Standard Parallel Field
 Tangency Point Height Field

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5.2.2.6 Model List Record. The number of these records shall correspond to the value in the Model List Count Field in the parent GTDB Parameters record. The field structure of each record shall be as follows:

- Model Library Type Field
- Model Number Field
- Specific Model Texture Parameters Subrecord
- Generic Model Texture Parameters Subrecord

5.2.2.6.1 Specific Model Texture Parameters Subrecord. The field structure of this record shall be as follows:

- Color Texture Existence Flag Field
- Grayscale Texture Existence Flag Field
- Multispectral Texture Existence Flag Field
- Processing Stage Field
- Model-Based Mapping Flag Field
- Face-Based Mapping Flag Field
- Vertex-to-Vertex Mapping Flag Field
- Non-Mapped Flag Field
- Texture Format Field
- Horizontal Block Size Field
- Vertical Block Size Field
- Horizontal Blocks Field
- Vertical Blocks Field
- Bits Per Texel Per Band Field

5.2.2.6.2 Generic Model Texture Parameters Subrecord. The field structure of this record shall be as follows:

- Color Texture Existence Flag Field
- Grayscale Texture Existence Flag Field
- Model-Based Mapping Flag Field
- Face-Based Mapping Flag Field
- Non-Mapped Flag Field
- Texture Format Field
- Horizontal Block Size Field
- Vertical Block Size Field
- Number of Horizontal Blocks Field
- Number of Vertical Blocks Field
- Bits Per Texel Per Band Field

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5.2.2.7 SLOD Parameter Record. The number of Simulator Level of Detail Parameter Records shall correspond to the value in the Simulator Level of Detail Count Field in the parent GTDB Parameter Record. The field structure of this record shall be as follows:

Simulator Level of Detail ID Field
Number of Keep-List Entries Field
Number of Delete-List Entries Field
Number of Level-List Entries Field
Culture Resolution Field {*field deleted*}
Use SSDB Terrain Coastlines Flag Field
Use SSDB Terrain Features Flag Field
Extract Backbone from Grid Flag Field
Number of Specific Thinning Parameters Field
Terrain Grid Source Simulator Level of Detail Field
Number of Area Blocks Field (Always one or greater)

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5.2.2.8 Keep-List Record. The number of these records shall correspond to the value in the Number of Keep-List Entries field in the parent Simulator Level of Detail Parameters record. The Ending FDC Code Field shall always have a value equal to or greater than that of the starting FDC Code Field. The field structure of each record shall be as follows:

Starting FDC Code Field
Ending FDC Code Field

5.2.2.9 Delete-List Record. The number of these records shall correspond to the value in the Number of Delete-List Entries field in the parent Simulator Level of Detail Parameters record. The Ending FDC Code Field shall always have a value equal to or greater than that of the starting FDC Code Field. The field structure of each record shall be as follows:

Starting FDC Code Field
Ending FDC Code Field

5.2.2.10 Level-List Record. The number of these records shall correspond to the value in the Number of Level-List Entries field in the parent Simulator Level of Detail Parameters record. The Ending FDC Code Field shall always have a value equal to or greater than that of the starting FDC Code Field. The field structure of each record shall be as follows:

Starting FDC Code Field
Ending FDC Code Field

5.2.2.11 Specific Thinning Parameter Record. The number of these records shall correspond to the value in the Number of Specific Thinning Parameters Record. This record controls thinning of features of a specific type. The feature to be thinned is identified by Feature Descriptor Code and Source Level of Detail. The thinning parameter is specified in meters.

Source Feature Descriptor Code Field
Source Level of Detail Field
Thinning Tolerance Field

5.2.2.12 General Thinning Parameter Record. There will be one of this record for every SLOD. The field values correspond to desired thinning parameters for all features derived from a given source Level of Detail. Any Specific Thinning Parameter will override the values of the General Thinning Parameters, if such a feature exactly matches the specific criteria.

Thinning Tolerance for Source Level of Detail 0 Field
Thinning Tolerance for Source Level of Detail 1 Field
Thinning Tolerance for Source Level of Detail 2 Field
Thinning Tolerance for Source Level of Detail 3 Field
Thinning Tolerance for Source Level of Detail 4 Field
Thinning Tolerance for Source Level of Detail 5 Field

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5.2.2.13 Area Block Parameters Record. The number of Area Block Parameters Records shall correspond to the value in the Number of Area Blocks Field in the parent Simulator Level of Detail Parameters Record. The field structure of this record shall be as follows:

- Area Block Number Field
- Area Block Boundary Field
- Goodness-of-Fit Field
- Minimum Number of Terrain Polygons Field
- Maximum Number of Terrain Polygons Field
- Maximum Number of Culture Polygons Field
- Maximum Number of Model References Field
- Terrain LOD Field
- Color Texture Existence Flag Field
- Grayscale Texture Existence Flag Field
- SMC/FDC Texture Existence Flag Field
- Color Texture Resolution Field
- Grayscale Texture Resolution Field
- SMC/FDC Texture Resolution Field

5.2.2.14 Island Record. The number of Island Records shall correspond to the value in the Island Count Field in the parent GTDB Parameters Record. The field structure of this record shall be as follows:

- Island Number Field
- Island Boundary Point Count Field

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5.2.2.15 Island LOD Record. Following each Island Record, there shall be an Island LOD record for each simulator level of detail in the GTDB. The field structure of this record shall be as follows:

- SLOD ID Field
- SSDB Culture LOD Field
- Color Texture Existence Flag Field
- Grayscale Texture Existence Flag Field
- Color Texture Resolution Field
- Grayscale Texture Resolution Field

5.2.2.16 Island Boundary Point Record. The number of Island Boundary Point Records shall correspond to the value in the Island Boundary Point Count Field in the parent Island Record. The edge formed by successive Island Boundary Points shall not cross the boundary of any other island in the GTDB. The first and last boundary points of an island shall be identical, and boundary points shall be sequenced in counter-clockwise order as viewed from above. The field structure of this record shall be as follows:

- Island Number Field
- Boundary Point Field

5.2.2.17 Option Record. The field structure of the record shall be as follows:

- Tape Option Field

5.2.2.18 Affected AB Count Record. Populated only if the Tape Option defined above indicates update only; otherwise, it shall contain zero. The field structure of the record shall be as follows:

- Number of Area Blocks Field

5.2.2.19 Affected AB ID Record. The number of these records shall correspond to the Number of Area Blocks field in the Affected AB Count Record. The field structure of the record shall be as follows:

- SLOD ID Field
- Area Block Number Field

5.2.2.20 Checksum Record. The field structure of this record shall be as follows:

- Checksum Field

5.3 Model Library Header (MLE) File. There shall be one Model Library Header File following the TLE

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5.3.1 MLH Record Order. The record order of the MLH file shall be as follows:

```

MLH Identifier Record
File Name Record
for each model library
  Model Library Header Record
  Culture Color Table Record(s)
  Light Color Table Record(s)
for each model
  Model LOD Complexity Table Record
for each model LOD
  Model Complexity Statistics Table Subrecord
Checksum Record

```

5.3.2 MLH Field Structure. The field structure of each of these records shall be as described below.

5.3.2.1 MLH Identifier Record. This record shall consist of the ASCII string 'MLH'.

5.3.2.2 File Name Record. This record shall consist of the ASCII string 'ssGnnnnnnML.B', where "ss" is the security code and "nnnnnn" is the GTDB identifier.

5.3.2.3 Model Library Header Record. There shall be three Model Library Header records--one each for a 2-D Static Model Library, a 3-D Static Model Library, and a 3-D Dynamic Model Library. The field structure of this record shall be as follows:

```

Project 2851 GTDB Catalog ID Field
Model Library Type Field
Last Update Date Field
Number of Culture Color Tables Field
Number of Light Color Tables Field
Number of Models Field

```

5.3.2.4 Culture Color Table Record. The total number of records shall correspond to the value in the "Number of Culture Color Tables" field in the parent Model Library Header record. The field structure of each record shall be as follows:

```

Color ID Field
Color Name Field
Color (Bue, Chroma, Value, Color Calibration Entry) Field
Number of Color References Field

```

5.3.2.5 Light Color Table Record. The total number of records shall correspond to the value in the "Number of Light Color Tables" field in the parent Model Library Header record. The field structure of each record shall be as follows:

```

Color ID Field
Color Name Field
Color (Bue, Chroma, Value, Color Calibration Entry) Field
Number of Color References Field

```

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5.13.2.7.2.2 **File Name Record.** This record shall consist of the ASCII string 'TPABnnnnnnnnnn.ss', where 'nnnnnnnnnn' is the area block number and 'ss' is the SLOD number.

5.13.2.7.2.3 **TPAB Header Record.** The field structure of this record shall be as described below:

- Project 2851 GTDB Catalog ID Field
- Area Block ID Field
- Lat/Long SW Corner Field
- Lat/Long NE Corner Field
- Last Update Date Field
- Security Level Field
- Terrain Type Field
- Latitude Interval Field
- Longitude Interval Field
- Number of Terrain Polygons Field
- Column Count Field (Always Zero)
- Row Count Field (Always Zero)

5.13.2.7.2.4 **Terrain Polygon Record.** The number of these records shall correspond to the value in the Number of Terrain Polygons field within the parent TPAB Header Record. The field structure of this record shall be as follows:

- Terrain Polygon ID Field
- Shape Code Field
- Polygon Normal Field
- Number of Culture References Field
- Number of Vertices Field (Always three or greater)
- Number of Vertex-to-Vertex Texture References Field

5.13.2.7.2.5 **Vertex List Pointer Record.** The actual number of records shall correspond to the Number of Vertices field within the parent Terrain Polygon record. Vertices shall be ordered in a counterclockwise direction, as viewed from above. All polygons shall be closed implicitly. The Normal List Position Field shall be zero when vertex normals have not been requested. The field structure of each record shall be as follows:

- Vertex List Position Field
- Normal List Position Field
- Correlation Priority Field

5.13.2.7.2.6 **Culture Reference Record.** The number of these records shall correspond to the value of the Number of Culture References field within the parent Terrain Polygon record. The field structure of each record shall be as follows:

- Type of Reference Field
- Feature Type Field
- Feature Number Field
- Model Library Type Field
- Model Reference Number Field
- Feature Descriptor Code Field
- Layer Number Field

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5.13.2.7.2.7 **Vertex-to-Vertex Texture Reference Record.** There shall be one texture pattern vertex defined for each polygon vertex. The first texture pattern vertex shall map to the first polygon vertex. The number of these records shall correspond to the value of the Number of Vertex-to-Vertex Texture References field in the parent Terrain Polygon Record. The field structure of this record shall be as follows:

Texture Reference Table Index Field
 GTDB Texture Library Type Field
 Texture Mapping Set ID Field
 Texture ID Field (*field deleted*)
 Specific of Generic Texture Flag Field
 Layer Number Field
 Number of Texture Pattern Coordinates Field
 for each texture pattern vertex
 Texture ID Field
 Texture Pattern Coordinates Field

5.13.2.7.2.8 **Pseudo-EOF Record.** This record shall consist of the ASCII string 'EOF TPABnnnnnnnnnn.ss', where 'nnnnnnnnnn' is the area block number and 'ss' is the SLOD number.

5.13.2.7.2.9 **Checksum Record.** The field structure of this record shall be as follows:

Checksum Field

5.13.2.8 **Terrain Grid Area Block (TGAB) Pseudo-File.** For a GTDB which includes gridded terrain, there shall be one Terrain Grid Area Block Pseudo-File associated with every area block identified as being part of a SLOD. The TGAB shall be included when gridded terrain has been requested.

5.13.2.8.1 **TGAB Pseudo-File Record Order.** The record order of the TGAB pseudo-file shall be as follows:

TGAB Identifier Record
 File Name Record
 Terrain Area Block Header Record
 for each terrain grid post
 Terrain Post Record
 Pseudo-EOF Record
 Checksum Record

5.13.2.8.2 **TGAB Pseudo-File Field Structure.** The field structure of each of these records shall be as described below.

5.13.2.8.2.1 **TGAB Identifier Record** This record shall consist of the ASCII string 'TGAB'

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5.13.2.8.2.2 **File Name Record.** This record shall consist of the ASCII string 'TGABnnnnnnnnnn.ss', where 'nnnnnnnnnn' is the area block number and 'ss' is the SLOD number.

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Fieldname	Type	Length	Range	Description
Emissivity	R6	12	0.0..1.0	Ratio of the rate of infrared radiation from a feature or model as a consequence of its temperature only, to the corresponding rate of emission from a blackbody at the same temperature.
Encryption (NITF)	I	1	0..1	Flag that indicates whether an image is encrypted. 0 = no encryption, 1 = encrypted.
End Vertex ID	I	11	0..2147483647	The highest number assigned to a vertex within a Vertex Area Block pseudo-file.
Ending FDC Code	S	5	--	The Feature Descriptor Code used to define the end of a range of FDCs within various parameters of the CDBTP.
Exitance	R6	12	0.0..1.93428E+25	Rate of flow of infrared radiation from a feature or model polygon per unit of surface area.
Expand Lineals Flag	B	1	T, F	User-defined CDBTP parameter indicating whether linear features should be replaced by areal representations.

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Fieldname	Type	Length	Range	Description
Extended Header Data (NITF)	--	--	--	Reserved for future use.
Extended Header Data Length (NITF)	I	5	0..99999	The length in bytes of the Extended Header Data Record.
Extended Sub-Header Data (NITF)	--	--	--	Reserved for future use.
Extended Sub-Header Data Length (NITF)	I	5	0..99999	The length in bytes of the Extended Sub-Header Data Record.
Extract Backbone from Grid Flag	B	1	T, F	User-Defined CDBTP parameter indicating whether the CDBTP should automatically extract terrain features from the SSDB for use in the terrain polygonization
Face-Based Mapping Flag	B	1	T, F	Parameter indicating the existence of face-based mapping parameters for texture.
FACS Attribute Code	S	6	See Section 6.1	A code uniquely identifying an attribute type, based on codes defined in the DMA Feature Attribute Coding Standard.

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Fieldname	Type	Length	Range	Description
Number of Separation Planes	I	6	0..32767	The number of Separation Plane records associated with a given model.
Number of SLODs	I	11	1..2147483647	The number of Simulator Levels of Detail defined for terrain and culture data within the GTDB. This is a user-defined value.
Number of SMC Distribution Tables	I	11	0..2147483647	The number of SMC Distribution Table records associated with a SLOD or area block. Each record contains a single entry in a distribution table of Surface Material Categories.
Number of Specific Thinning Parameters	I	11	0..2147483647	The number of specific thinning parameters defined for a GTDB.
Number of Stage 1 Specific Textures	I	11	0..2147483647	The total number of Stage 1 Specific Texture maps included within a GTDB database.
Number of Stage 1 Texture File Associations	I	11	0..2147483647	The total number of Stage 1 Texture files (originating from another source) where the file name from the original source has been associated with a new GTDB file name included within a GTDB database. Every Stage 1 original source data file shall have such an association.
Number of Stage 2 Specific Textures	I	11	0..2147483647	The total number of Stage 2 Specific Texture maps included within a GTDB database.

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Fieldname	Type	Length	Range	Description
Number of Stage 3 Generic Textures	I	11	0..2147483647	The total number of Stage 3 Generic Texture maps included within a GTDB database.

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Fieldname	Type	Length	Range	Description
Number of Stage 3 SMC/FDC Textures	I	11	0..2147483647	The total number of Stage 3 SMC/FDC Texture maps included within a GTDB database.
Number of Stage 3 Specific Textures	I	11	0..2147483647	The total number of Stage 3 Specific Texture maps included within a GTDB database.
Number of Stage 4 Generic Textures	I	11	0..2147483647	The total number of Stage 4 Generic Texture maps included within a GTDB database.
Number of Stage 4 SMC/FDC Textures	I	11	0..2147483647	The total number of Stage 4 SMC/FDC Texture maps included within a GTDB database.
Number of Stage 4 Specific Textures	I	11	0..2147483647	The total number of Stage 4 Specific Texture maps included within a GTDB database.
Number of Stage 5 Generic Textures	I	11	0..2147483647	The total number of Stage 5 Generic Texture maps included within a GTDB database.
Number of Stage 5 SMC/FDC Textures	I	11	0..2147483647	The total number of Stage 5 SMC/FDC Texture maps included within a GTDB database.
Number of Stage 5 Specific Textures	I	11	0..2147483647	The total number of Stage 5 Specific Texture maps included within a GTDB database.
Number of Stereo Mates (NITF)	I	3	0..127	Number of images that overlap a given image.

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Fieldname	Type	Length	Range	Description
SLOD Count	I	3	1..16	The number of Simulator Levels of Detail defined for the GTDB.
SLOD ID	I	3	0..16	The unique identifying number for a Simulator Level of Detail (SLOD) within a GTDB.
SMC/FDC Look Up Table Existence Flag	B	1	T, F	Parameter flag indicating the existence of a look up table for the values in SMC/FDC textures. When this flag is true, SMC/FDC textures file shall contain pointers into a look up table.
SMC/FDC Texture Existence Flag	B	1	T, F	The flag indicating the existence of SMC/FDC texture within an area block.
SMC/FDC Texture Resolution	R6	12	0.0..1.93428e+25	Approximate resolution of SMC/FDC texture in units of Meters/texture.
Source Agency/Project (NITF)	S	16	--	Name of the agency or project that created the digital source, e.g., "SOFATS", "P2851", etc.
Source Date (NITF)	S	6	YYMMDD	Date the digital source was created, where YY = Year, MM = Month, DD = Day.
Source Feature Descriptor Code	S	5	--	The Feature Descriptor Code used to define which features will have specific thinning applied.
Source ID (NITF)	I	10	0..2147483647	Unique identifier of an entry in the data source table.
Source ID Number	I	6	0..32767	The unique identifying number of a data source used to populate the SSDB.

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Fieldname	Type	Length	Range	Description
Source Level of Detail	E	5	LOD_0,LOD_1, LOD_2,LOD_3, LOD_4,LOD_5	The Level of Detail used to define which features will have specific thinning applied.
Source Name (NITF)	S	20	--	Name of the original source, e.g., "EOSAT", "General Electric", etc.

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Fieldname	Type	Length	Range	Description
Source Simulator	S	4	--	Identifies the particular simulator for which a model was created, if not generic.
Source Type (NITF)	E	1	H, S	Flag indicating hardcopy ("H") or softcopy ("S") source.
South Tile Neighbor ID (NITF)	I	10	0..2147483647	The identifier of the neighboring areal specific image to the south.
Special Environmental Conditions (NITF)	S	80	--	Textual description about any special conditions associated with an image.
Special Environmental Conditions Preference	S	80	--	Textual description about any preference for special conditions associated with an image.
Specific or Generic Texture Flag (NITF, non-NITF)	E	16	SPECIFIC_TEXTURE, GENERIC_TEXTURE	Flag indicating whether a texture is specific (derived from actual photo or satellite image) or generic (synthetic)
Specular	B	1	T, F	Flag indicating whether a feature or model polygon has the quality of being mirror-like. Synthetic default values are generated by P2851 software as a function of Feature Descriptor Code.
SSDB Culture LOD	E	5	LOD_0, LOD_1, LOD_2, LOD_3, LOD_4, LOD_5	The culture Level of Detail in the SSDB from which the GTDB culture is to be extracted.
Stage 1 Specific Textures Storage Size	R10	16	0.. 9.999999999E+99	The total number of bytes for all Stage 1 Specific Textures in a GTDB database.

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Fieldname	Type	Length	Range	Description
Texture Mapping Type	E	16	GLOBAL BASED, MODEL BASED, FACE BASED, VERTEX_TO_VERTEX, NON_MAPPED	Method used in mapping texture onto terrain, culture, and models.
Texture Origin	I2D	13	0..99999, 0..99999	Location designated as the origin within a texture.
Texture Pattern Coordinates	I2D	13	0..99999, 0..99999	Positions within an image that are to be tied to the vertices of a model polygon when performing a vertex-to-vertex texture mapping.
Texture Reference Table Index	I	6	0..65535	A pointer to a texture reference in a texture reference table.
Texture Scale	R2D6	25	0.0..1.93428E+25, 0.0..1.93428E+25	Scale parameters applied to a texture map.
Texture Type ^a (NITF)	E	14	RGB, INTENSITY, MULTI_SPECTRAL, SMC_FDC	The type of a texture.
Thinning Tolerance	R10	16	-9.999999999E+99.. 9.999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.
Thinning Tolerance for Source Level of Detail 0	R10	16	-9.999999999E+99.. 9.999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.

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Fieldname	Type	Length	Range	Description
Thinning Tolerance for Source Level of Detail 1	R10	16	-9.9999999999E+99.. 9.9999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.
Thinning Tolerance for Source Level of Detail 2	R10	16	-9.9999999999E+99.. 9.9999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.
Thinning Tolerance for Source Level of Detail 3	R10	16	-9.9999999999E+99.. 9.9999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.
Thinning Tolerance for Source Level of Detail 4	R10	16	-9.9999999999E+99.. 9.9999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.
Thinning Tolerance for Source Level of Detail 5	R10	16	-9.9999999999E+99.. 9.9999999999E+99	User-defined CDBTP parameter giving the maximum perpendicular error to be introduced by the culture thinning process. A value of 0.0 indicates that thinning should not be performed.

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Fieldname	Type	Length	Range	Description
Three-D Geometric Correction Flag (NITF)	B	5	TRUE, FALSE	Flag indicating whether a texture has been positioned/corrected (orthorectified) in 3D space.
Translation (Model Reference)	I2D		-3240000000.. 3240000000, -6480000000.. 6480000000	A set of coordinates defining vectors for local offset of a model from its nominal position.

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Fieldname	Type	Length	Range	Description
Translation (Subsidiary Model Ref.)	R2D6		-1.93428E+25.. 1.93428E+25, -1.93428E+25.. 1.93428E+25	A set of coordinates defining vectors for local offset of a subsidiary model from its nominal position.
	R3D6		-1.93428E+25.. 1.93428E+25, -1.93428E+25.. 1.93428E+25, -1.93428E+25.. 1.93428E+25	
Translucency	R6	12	0.0..100.0	The degree to which a surface is transparent to visible light, expressed as a percentage. Synthetic default values are generated by P2851 software as a random function of Surface Material Category.
Transmissivity	R6	12	0.0..1.0	Ratio of radiant energy transmitted by a feature or model to the energy incident upon it. Synthetic default values are generated by P2851 software as a random function of Surface Material Category.
Two-D Geometric Correction Flag (NITF)	B	5	TRUE, FALSE	Flag indicating whether a texture has been positioned/corrected (geopositioned) in 2D space.

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TABLE A-III

Fieldname	Type	Length	Range	Description
Type of Reference	E	7	FEATURE, MODEL	When culture has been fragmented onto terrain, indicates whether a particular culture reference record represents a feature or a model.
UL Corner X/Y Image Coordinates (NITF)	I2D	15	-999999.. 999999, -999999, 999999	X/Y cartesian coordinates of the upper left corner of the image.
UR Corner X/Y Image Coordinates (NITF)	I2D	15	-999999.. 999999, -999999, 999999	X/Y cartesian coordinates of the upper right corner of the image.
Use Models Flag	B	1	T, F	User-defined CBATP parameter indicating whether model references should replace culture features, wherever an applicable model is available in the SSDB.
User Option	E	18	VIOLATE_FACE_COUNT, MEET_FACE_COUNT, ABORT_RUN	User-defined CBATP parameter indicating the desired action if there is a conflict between user-specified parameters for culture selection and for maximum culture polygon count.
Use SSDB Terrain Coastlines Flag	B	1	T, F	User-defined CBATP parameter indicating if the program should seed the GTDB polygonization with coastline features stored in the SSDB

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TABLE A-III

Fieldname	Type	Length	Range	Description
Use SSDB Terrain Features Flag	B	1	T, F	User-defined CDBTP parameter indicating if the program should seed the GTDB polygonization with terrain features (non-coastline) stored in the SSDB

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TABLE A-III

Fieldname	Type	Length	Range	Description
Value	I	6	0..32767	The value component of a color defined by the Hue-Chroma-Value model. P2851 normalizes Value to a range of 0 (black) to 32767 (white) instead of the familiar 0-100 percent lightness range. Synthetic default values are generated by P2851 software as a random function of Surface Material Category.
Vertex List Position	I	11	0..2147483647	An index into a coordinate list, identifying a coordinate used as a model, terrain, or culture vertex.
Vertex Normals Flag	B	1	T, F	User-defined CDBTP parameter indicating whether vertex normals should be calculated for terrain polygons.
Vertex-to-Vertex Mapping Flag	B	1	T, F	Parameter indicating the existence of vertex-to-vertex mapping parameters for texture.
Vertical Captured Texel Size (NITF)	R10	16	0.0.. 9.999999999E+99	Approximate ground distance for a texel (expressed in meters) in the vertical y-direction.
Vertical Resolution (NITF, non-NITF)	R6	12	0.0..1.93428e+25	Vertical length of a texel in meters, (e.g., 1.0 M/texel)
Vertical Size (NITF)	R6	12	0.0..1.93428e+25	The vertical size of the entire image, e.g., 1000.0 Meters.