

Reference	GREXCHANGE	WebCGM
T13.2 Number of pictures	Minimum of 1 picture per metafile. Maximum of one picture per metafile, except in symbol library metafile (See discussion of symbol library) or when reduced resolution raster images are included.	No limit <i>(deprecated in Release 2.0)</i>
T14.1 Colour	Greyscale is considered a special case of colour. The colour class is defined in record 3 of the graphics declaration file and is reflected in the required ColourClass parameter of the METAFILE DESCRIPTION element. <i>(Reference to Graphics Declaration file should be deprecated in GREXCHANGE)</i>	Grayscale is considered to be a special class of colour.
T14.4 Graphical text strings	Selected by basic values of CHARACTER CODE ANNOUNCER. The CO character NUL (code value) is permitted and has no effect. String parameters of graphical text shall contain no control character (7/8 bit codes: 1-31 and 128-159) <i>(May be a difference if ATA is not interested in adopting Unicode)</i>	The C0 character NUL (code value) is permitted and has no effect. String parameters of graphical text shall contain no control character (7/8 bit codes: 1-31 and 128-159). ISO/IEC 2022 switching is not allowed in graphical text. A valid WebCGM metafile may use for graphical text: only the character sets: the collection of four character sets which comprise ISO Latin1 and Symbol (see CHARACTER SET LIST); Unicode UTF-8; and UTF-16.
T14.5 Nongraphical text strings	The permitted character sets are [ISO 8859-1:1987] LHS No. 1 and [ISO 8859-1:1987] RHS No. 1	The permitted character sets for non-graphical text are ISO Latin 1 (LHS & RHS), and UNICODE UTF-8, and Unicode UTF-16. Only one of these three shall be used throughout any particular WebCGM metafile instance. According to the CGM standard, the default SF character set, at the beginning of the 'metafile id' parameter of the BEGIN METAFILE element is ISO Latin 1. If the metafile is to use UTF-8 for SF parameters, then the following 4-octet ISO 2022 sequence shall occur as the first 4 octets of the 'metafile id' parameter: ESC 2/5 2/15 4/9

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	<p>Any character set accessed by [ISO/IEC 2022] switching techniques shall be in the character set list (defined in this profile)</p> <p>Nongraphical text strings are considered to be case insensitive.</p> <p><i>(May be a difference if ATA is not interested in adopting Unicode)</i></p>	<p>If the metafile is to use UTF-16 for SF parameters, then the following 4-octet ISO 2022 sequence shall occur as the first 4 octets of the 'metafile id' parameter: ESC 2/5 2/15 4/12</p> <p>Otherwise, the use of ISO 2022 switching is prohibited in non-graphical text string. NOTE: Section 6.3.4.5 of CGM:1999 allows the switching to UTF-8 (variable length multi-byte), and allows the use of 8-bit access to the ISO Latin 1 set.</p> <p>Any character set used in the metafile which is accessed by ISO/IEC 2022 switching techniques shall be in the character set list (defined in this profile).</p> <p>See 3.1.1 for additional restrictions to the character repertoire for those WebCGM non-graphical strings which may be part of the WebCGM URI fragment.</p>
<p>T15.1 BEGIN METAFILE</p>	<p>For illustrations, the first 32 bytes of the metafile identification field shall contain the graphic descriptor and match the gnbr defined in the ATA TEXT specifications [Section 4-2]. The field shall be padded with ASCII spaces, if necessary to fill all 32 bytes. The 33rd byte shall be an ASCII space (to maintain compatibility with earlier versions of this requirement). For symbol libraries, bytes 1-6 shall contain the string SYMLIB and bytes 7-32 shall contain a symbol library name that is contained in the SYMBOL LIBRARY LIST element of the referencing metafile .</p> <p><i>(The requirement for metafile identification may be deprecated by ATA)</i></p>	
<p>T15.2 BEGIN PICTURE</p>	<p>There shall be 1 illustration per metafile. For reduced raster resolution images of first picture</p>	<p>The picture identifier shall follow the rules for non-graphical text, clause 9.5.4.6 and T.14.5.</p>

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	<p>additional pictures are allowed. Reduced raster resolution images shall have the picture identifier of the first picture concatenated with the string RRn, where n is the reduced resolution image number. For symbol library metafiles, an unlimited number of pictures is allowed.</p> <p><i>(Reduced raster images may be deprecated by the ATA)</i></p>	
T15.5 BEGIN PROTECTION REGION	<p>Permitted</p> <p><i>(Is it useful?)</i></p>	<p>Prohibited</p> <p><i>(Align?)</i></p>
T15.7 BEGIN COMPOUND TEXT PATH	<p>Permitted</p> <p><i>(Is it useful?)</i></p>	<p>Prohibited</p> <p><i>(Align?)</i></p>
T15.9 BEGIN APPLICATION STRUCTURE	<p>The application structure type parameter is restricted to a string values of grgroup, gobject, para, subpara, and layer.</p> <p>Note: The application structure of type grgroup is being deprecated. In its place an attribute is being added to the gobject application structure type to control interactivity. Application structures of type gobject may contain other application structures of type gobject, or para.</p> <p>Application structures of type para may contain application structures of type subpara.</p> <p>Application structures of type layer may contain application structures of type gobject or para.</p> <p>Note: The application structure of type layer should not be confused with the ATA definition of layer through the use of the CGM Escape Element. The application structure of type layer is made available for structuring the illustration into groups of logical structure that may be accessed and controlled independently.</p> <p><i>(Use of the WebCGM DOM and companion file should help align this)</i></p>	<p>The value of the structure type parameter must be chosen from the list of valid structure types listed in the Section 3.2.1. Structures are sensitive to placement and are allowed according to the rules defined in Section 3.2.1, and placed in the metafile according to the content model defined in the XML DTD fragment in Section 3.3.</p>
T16.2	"ProfileId:ATA	ProfileId:WebCGM

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METAFILE DESCRIPTION	GRAPHICS.GREXCHANGE” <i>(This should cause no problems with cascading profiles)</i>	
T16.13 FONT LIST	List of recommended fonts: Times-Roman Times-Bold Times-Italic Times-BoldItalic Helvetica Helvetica-Bold Helvetica-Oblique Helvetica-BoldOblique Courier Courier-Bold Courier-Oblique Courier-BoldOblique Symbol OCRB If other fonts are used, the FONT PROPERTIES and RESTRICTED TEXT elements are required. The OCRB font is encoded to the ISO Latin1 character set and has a width metric of 1.06 when compared to a character height of 1.0. The space character in the OCRB font is the same width as all the other characters. For future new art, fonts other than OCRB should be considered. <i>(Difference here with inclusion of OCRB, but it could be deprecated?)</i>	List of recommended fonts: Times-Roman Times-Bold Times-Italic Times-BoldItalic Helvetica Helvetica-Bold Helvetica-Oblique Helvetica-BoldOblique Courier Courier-Bold Courier-Oblique Courier-BoldOblique Symbol The list of recommended fonts is intended to be a list of required minimum interpreter font capability and a recommended maximum font capability for generators. If other fonts are used, the FONT PROPERTIES and RESTRICTED TEXT elements are required. Font names are considered case insensitive.
T16.14 CHARACTER SET LIST	<i>(May be a difference if ATA is not interested in adopting Unicode)</i>	"94-character G-set", 4/2 (ISO 8859-1 LH); "96-character G-set", 4/1 (ISO 8859-1 RH); "94-character G-set", 2/10 3/10 (Symbol LH); "94-character G-set", 2/6 3/10 (Symbol RH); "complete code", 4/9 (UTF-8) "complete code", 4/12 (UTF-16)
T16.19 COLOUR MODEL	shall be 1 <i>(ATA could be aligned)</i>	Shall be 1, 6, 7, or 8. Values 6, 7, and 8 are the registered values for RGB-alpha, sRGB, and sRGB-alpha
T16.23 SYMBOL LIBRARY LIST	See discussion of symbol library in text for mechanism for accessing.	See discussion of symbol libraries in Section 4.17.

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	<i>(Unsure about how to address this one)</i>	Symbol Library names shall be valid URLs according to RFC-2396. URLs used as Symbol Library names shall not contain non-null fragment specification. If a WebCGM URL in full generality is of the form "<base-URL>#<pict-part>.<obj-part>" (see 2.3.6), then valid URLs for Symbol Library names are either of the form "<base-URL>", or "<base-URL>#". A URL which consists only of "#" refers to the metafile itself in which this Symbol Library reference is contained.
T18.3 AUXILIARY COLOUR	Permitted	Prohibited <i>(WebCGM 2.0 might align here?)</i>
T18.4 TRANSPARENCY	Permitted Interpreter behavior of this element is not implementation dependent as noted in [ISO/IEC 8632:1999] Interpreters shall implement the requirements as specified in the description of the element in the standard.	Prohibited <i>(WebCGM 2.0 might align here?)</i>
T18.13 PROTECTION REGION INDICATOR	Permitted <i>(Is it useful?)</i>	Prohibited <i>(Align?)</i>
T18.14 GENERALIZED TEXT PATH MODE	Permitted <i>(Is it useful?)</i>	Prohibited <i>(Align?)</i>
T19.5 RESTRICTED TEXT	For v3 metafiles the RESTRICTED TEXT TYPE shall be boxed-cap. <i>(ATA should probably relax this requirement and align)</i>	
T19.22 HYPERBOLIC ARC	Permitted	Prohibited <i>(WebCGM 2.0 might align here?)</i>
T19.23 PARABOLIC ARC	Permitted	Prohibited <i>(WebCGM 2.0 might align here?)</i>
T19.24 NON-UNIFORM B-SPLINE	Permitted	Prohibited <i>(WebCGM 2.0 might align here?)</i>
T19.25	Permitted	Prohibited

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NON-UNIFORM RATIONAL B-SPLINE		<i>(WebCGM 2.0 might align here?)</i>
T19.28 BITONAL TILE	2 (T6)	0, 1, 2, 5, or 6 <i>(Are all these needed for bitonal tile?)</i>
T19.29 TILE	2 (T6), 6 (Run Length), 7 (JPEG), or 9 (PNG)	0, 1, 2, 5, 6, 7, or 9 <i>(Are all these needed for tile?)</i>
T20.20 ALTERNATE CHARACTER SET INDEX	NOTE: Every referenced index shall correspond to a defined entry the CHARACTER SET LIST or GLYPH MAPPING. This includes implicit reference to the default index value. <i>(Error in GREXCHANGE)</i>	Every referenced index shall refer to an entry in the CHARACTER SET LIST. This includes implicit reference to the default index value.
T20.42 RESTRICTED TEXT TYPE	2 In v3 files the use of this element is required <i>(This should probably be relaxed in GREXCHANGE)</i>	1..6
T20.44 EDGE CAP	1...5 <i>(Align – based on error in Model Profile)</i>	1..4;
T21.1 ESCAPE	A value of -4000 is used to define layers. Layer definitions shall be numeric and shall be limited to a maximum value of 256. There are no defined meanings to the content of a layer, and the interpretation of this ESCAPE shall not be required for the correct display of the intended picture <i>(Need to figure out what to do with the ATA layer escape mechanism)</i>	
T24.1 APPLICATION STRUCTURE ATTRIBUTE	Several differences <i>(Use of the WebCGM DOM and companion file should help align this)</i>	Several differences <i>(Consider including the concept of parablock in WebCGM 2.0)</i>