



Information processing systems — Computer graphics — Programmer's Hierarchical Interactive Graphics System (PHIGS) —

Part 1: Functional description

TECHNICAL CORRIGENDUM 2

Systèmes de traitement de l'information — Infographie — Interface de programmation du système graphique hiérarchisé (PHIGS) —

Partie 1: Description fonctionnelle

RECTIFICATIF TECHNIQUE 2

Technical corrigendum 2 to International Standard ISO/IEC 9592-1:1989 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 24, *Computer graphics and image processing*.

Page 6

Subclause 3.23

Change to read:

3.23 character height: An aspect of *text* which specifies the height of an upper-case character.

Subclause 3.25

Change to read:

3.25 character spacing: An aspect of *text* which specifies the fraction of the *character height* aspect to be added between adjacent character bodies in a string.

Subclause 3.27

Change to read:

3.27 character width: An aspect of *text* which specifies the width of a character. The actual width depends on the width to height ratio specified by the designer of the font to which the character belongs.

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Subclause 4.5.1

Penultimate paragraph, third and fourth sentences, change “fill area” to “fill area or fill area set” in three places.

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Subclause 4.5.5

End of the second full paragraph, replace the final sentence with:

“Character spacing is specified as a fraction of the character height aspect.”

Final full paragraph (ending in 'rotated and sheared'), delete “and sheared” from the parenthetical phrase.

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Subclause 4.5.7

Add the following text to the final paragraph:

For certain combinations of TEXT PATH and TEXT ALIGNMENT, concatenation is not meaningful. For example, if the TEXT PATH is set to LEFT or RIGHT, horizontal text alignment of CENTRE is not meaningful for concatenation since this depends on the contents of the subsequent string. For text paths UP and DOWN, horizontal text alignment of LEFT or RIGHT is not meaningful nor is vertical alignment of HALF.

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Subclause 4.5.8

Item d), change “a pointer” to “an index”.

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Subclause 4.5.15

Add a new paragraph before the final paragraph as follows:

The order of precedence of the filters is invisibility, then highlighting, then pick. When a primitive is eligible for both invisibility and highlighting, the invisibility attribute will apply.

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Subclause 4.6.3

Item J, add a new first element to the list of functions as follows:

SET VIEW REPRESENTATION 3.

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Subclause 4.7.2

Replace the second paragraph and matrix equation with the following:

A modelling transformation is specified by defining a 4×4 (for 3D) or 3×3 (for 2D) transformation matrix and a composition type as a structure element. On traversal, graphical output structure elements become output primitives as the composite modelling transformation is applied. The composite modelling transformation is formed from the hierarchy of component modelling transformations in the current structure path. This maps homogeneous coordinates in a modelling coordinate system to the world coordinate system as follows:

$$\begin{vmatrix} C_x \\ C_y \\ C_z \\ C_w \end{vmatrix} = \begin{vmatrix} C_{11} & C_{12} & C_{13} & C_{14} \\ C_{21} & C_{22} & C_{23} & C_{24} \\ C_{31} & C_{32} & C_{33} & C_{34} \\ C_{41} & C_{42} & C_{43} & C_{44} \end{vmatrix} \times \begin{vmatrix} MC_x \\ MC_y \\ MC_z \\ 1 \end{vmatrix}$$

and the homogeneous world coordinates are mapped to cartesian coordinates by

$$WC_x = \frac{C_x}{C_w}, WC_y = \frac{C_y}{C_w}, WC_z = \frac{C_z}{C_w}$$

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Subclause 5.2

REDRAW ALL STRUCTURES, change item b) to read:

b) If the control flag is set to **CONDITIONALLY**, the display surface may be cleared if the 'display surface empty' entry in the workstation state list is **NOTEMPTY**. (If the display surface is not cleared, the implementation may use knowledge of the current state of the display to optimize its actions, but it must produce a correct image.) If the control flag is set to **ALWAYS**, the display surface is cleared regardless of the setting of the 'display surface empty' entry. If the display surface is cleared, the 'display surface empty' flag is set to **EMPTY**.

REDRAW ALL STRUCTURES, change item f) to read:

f) All structures posted for this workstation (i.e., contained in the 'list of posted structures' in the workstation state list) are redisplayed. If the current state of the 'display surface empty' entry in the workstation state list is **NOTEMPTY**, the implementation may use knowledge of the current state of the display surface to optimize its actions. Typically, the redisplay of the structures causes the 'display surface empty' entry in the workstation state list to be set to **NOTEMPTY** if the set of structures posted to the workstation is also not empty.

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Subclause 5.2

UPDATE WORKSTATION, change item a) to read:

a) The display surface may be cleared if the 'display surface empty' entry in the workstation state list is **NOTEMPTY**. (If the display surface is not cleared, the implementation may use knowledge of the current state of the display to optimize its actions, but it must produce a correct image.) If the display surface is cleared, the 'display surface empty' flag is set to **EMPTY**.

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UPDATE WORKSTATION, change item e) to read:

e) All structures posted for this workstation (i.e., contained in the 'list of posted structures' in the workstation state list) are redisplayed. If the current state of the 'display surface empty' entry in the workstation state list is NOTEMPTY, the implementation may use knowledge of the current state of the display surface to optimize its actions. Typically, the redisplay of the structures causes the 'display surface empty' entry in the workstation state list to be set to NOTEMPTY if the set of structures posted to the workstation is also not empty.

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Subclause 5.3

CELL ARRAY 3, effect section, add the following to the end of the second paragraph:

If a colour index is not present in the colour table on the workstation, index 1 is used on that workstation. This also applies to index values less than 0.

CELL ARRAY 3, change the final word of the text of error 117 from "zero" to "one".

CELL ARRAY 3, remove error 113 from the list of errors for this function.

CELL ARRAY, effect section, add the following to the end of the second paragraph:

If a colour index is not present in the colour table on the workstation, index 1 is used on that workstation. This also applies to index values less than 0.

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Subclause 5.3

CELL ARRAY, change the final word of the text of error 117 from "zero" to "one".

CELL ARRAY, remove error 113 from the list of errors for this function.

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Subclause 5.4.2

SET CHARACTER EXPANSION FACTOR, third paragraph of the effect section, insert the following as the beginning of both the second and third sentences in this paragraph:

"For STRING and CHARACTER precision text, ..."

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Subclause 5.4.2

SET CHARACTER HEIGHT, fourth paragraph of the effect section, insert the following as the beginning of the paragraph:

"For STRING and CHARACTER precision text, ..."