AS 3656—1989
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Australian Standard®

Computer graphics—Graphical Kernel System for Three Dimensions (GKS-3D) functional description

(ISO title: Information processing systems—Computer graphics—Graphical Kernel System for Three Dimensions (GKS-3D) functional description)

This Australian Standard was prepared by Committee IT/3, Computer Related Graphics. It was approved on behalf of the Council of Standards Australia on 16 December 1988 and published on 26 June 1989.

The following interests are represented on Committee IT/3:

ACADS

Association of Consulting Engineers, Australia

Australian Vice-Chancellors Committee

Department of Defence

Royal Australian Institute of Architects

Telecom Australia

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PREFACE

This Standard was prepared by Standards Australia's Committee on Computer Related Graphics.

It is identical with and has been reproduced from ISO 8805:1988, *Information processing systems—Computer graphics—Graphical Kernel System for Three Dimensions (GKS-3D) functional description.*

For the purpose of this Australian Standard the text of the ISO Standard should be modified as follows:

(a) *Terminology:* The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.

(b) *Cross-references:* The references to International Standards should be replaced by references to Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
646	Information processing systems—ISO 7-bit coded character set for information interchange	1776	Information processing systems— 7-bit coded character set for information interchange
2022	Information processing systems—ISO 7-bit and 8-bit coded character sets—Code extension techniques	1953	Information processing systems—ISO 7-bit and 8-bit coded character sets—Code extension techniques
7942	Information processing systems—Computer graphics—Graphical Kernel Systems (GKS) functional description	2880	Information processing systems— Computer graphics—Graphical Kernel Systems (GKS) functional description
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0 Introduction

The Graphical Kernel System for Three Dimensions (GKS-3D) provides a set of functions for:

a) definition and display of 2D and 3D graphical data;

b) storage and manipulation of graphical data;

c) input of graphically related data.

The main reasons for introducing this International Standard for computer graphics is:

d) to allow application programs involving graphics to be easily portable between different installations;

e) to aid the understanding and use of graphics methods by application programmers;

f) to serve manufacturers of graphics equipment as a guideline in providing useful combinations of graphics capabilities in a device.

In order to reach these main objectives, the GKS-3D design was based on the following requirements:

g) GKS-3D should include all the capabilities that are essential for the whole spectrum of graphics, from simple passive output to highly interactive applications.

h) The whole range of graphics devices, including vector and raster devices, microfilm recorders, storage tube displays, refresh displays and colour displays should be controllable by GKS-3D in a uniform way.

i) GKS-3D should provide all the capabilities required by a majority of applications.

These requirements were used to formulate a number of principles that were used to judge specific design alternatives. Thus it was possible to contribute to the overall design goals while focussing on certain aspects. Five design aspects were identified, each having a group of principles