

## RECOMMENDATION ITU-R BT.1664

**Representation of various image aspect ratios into the image of large screen digital imagery<sup>1</sup> applications that use a 16:9 raster**

(Question ITU-R 15/6)

(2003)

The ITU Radiocommunication Assembly,

*considering*

- a) that the advent of large screen digital imagery (LSDI) may lead to some undesirable cropping of the images that have been carefully composed, e.g. at an aspect ratio of 1.66:1 or 1.85:1, when those images are transferred onto an LSDI master with a 16:9 image aspect ratio;
- b) that good engineering practice demands that the creative intent should be preserved;
- c) that the original image composition should be preserved without cropping;
- d) that Recommendation ITU-R BR.1374 – Scanned area dimensions from 16 mm and 35 mm cinematographic film used in television, specifically addresses ways to transfer films to video, as far as image aspect ratios are concerned, by specifying reference values for the dimensions of the area scanned on film during its transfer to television, when the film has been photographed for optical projection,

*recommends*

- 1 that the original composition of programme images should be preserved in subsequent use of the programme;
- 2 that when using an LSDI image system with an aspect ratio of 16:9 for programme presentation, images originally composed with different aspect ratios should be fitted into the 16:9 presentation image in such a way that no part of the original image is cropped, even if this results in blanking some parts of the 16:9 presentation image<sup>2</sup>.

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<sup>1</sup> Large screen digital imagery (LSDI) is a family of digital imagery systems applicable to programmes such as dramas, plays, sporting events, concerts, cultural events, etc. from capture to large screen presentation in high-resolution quality in appropriately equipped cinema theatres, halls and other venues.

<sup>2</sup> The examples given in Table 1 (non-normative) provide an indication of the extent to which programme images in various aspect ratios would fill the 16:9 presentation image.

**Annex 1**  
**(non-normative)**

**Examples of fitting various image aspect ratios into a presentation image with a 16:9 aspect ratio**



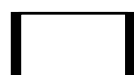
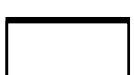
Table 1 provides some non-normative examples of the way images composed with various aspect ratios can be fitted into a presentation image with a 16:9 aspect ratio, without cropping their composition.

The examples assume the use of spherical projection lenses and a presentation raster of an aspect ratio of 16:9<sup>3</sup>. The assumed operating practice is the following one:

- Programme images are adjusted to fill the presentation raster height in examples 1, 2 and 3, and to fill the presentation raster width in example 4.
- The areas in the presentation raster that fall outside the programme images are blanked.

TABLE 1

**Examples of fitting various image aspect ratios into a 16:9 presentation image**

Example	Original image aspect ratio	Presentation	Appearance
1	1.33:1 (4:3)	The 16:9 presentation raster has black areas, 12.5% wide, on each side of the original image	
2	1.37:1 (Academy)	The 16:9 presentation raster has black areas, 11.5% wide, on each side of the original image	
3	1.66:1	The 16:9 presentation raster has black areas, 3.5% wide, on each side of the original image	
4	1.85:1	The 16:9 presentation raster has black areas, 2% high, at the top and bottom of the original image	

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<sup>3</sup> The case of images originally composed for wider aspect ratios can be addressed by horizontally compressing those images into the 16:9 scanned raster through the use of anamorphic lenses. They are subsequently decompressed in projection through the use of complementary anamorphic lenses fitted to the digital projector.