

Terminology of 3D displays

Japan Committee for 3D displays in
IEC/TC 110
(JEITA/3D-PJ)

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Difficulties of terminology for 3D displays and needs for standardization

- Various technologies and methods
- Related to various technical fields
- Ambiguous/double meaning terms
- Historical transition of usage

Adjusting terminology for
whole 3D display technologies

- Clarifying scope of 3D display devices
- Correct and strict technical treatment
- Systematic description based on classified 3D display technologies

Some fundamental and important issues in 3D terminology

- What is the definition of **3D displays**?
- **Stereoscopic** is two-view (with glasses) or not?
- What is the relation between **stereoscopic** and **autostereoscopic**?



Examples of classification of 3D displays/technologies

TABLE 1.1. Classification of Three-Dimensional Imaging Techniques, I

(A) Binocular stereoscopic imaging	Binocular viewers	A-1
	Parallax stereogram	A-2
	Lenticular-sheet binocular stereoscopic pictures	A-3
	Binocular displays using polaroid glasses	A-4
(B) Three-dimensional spatial imaging (Autostereoscopy)	Those using coherent light: holography	B-1
	Those using incoherent light: parallax panorama-gram, lenticular-sheet three-dimensional imaging, integral photography, projection-type three-dimensional displays, etc.	B-2
	Combinations of B-1 and B-2: holocoder-hologram, holographic stereogram, projection-type holography, etc.	B-3

Types of 3D Displays		Technologies	Note
Stereoscopy		Pol. glasses	Multi user
		LC shutter glasses	Time sequential
Non-Glasses 3D	Autostereoscopy (Multi-view binocular display)	Head tracking	One user
		Lenticular lens	FPD, Projection
		Parallax barrier	Barrier strips
		Field Sequential	Time Sequential
		Integral imaging	Hor.& Ver. 3D
	Volumetric display	Varifocal mirror	Vibrating mirror
		Spinning screen	Mechanical motion
		Crossed-beam	High cost crystal
	Holographic display	Electro-holography	

Standardization forum on IMID'08

T. Okoshi, Three-Dimensional Imaging Techniques, Academic Press, (1976)

Grand map of the standardization on 3D displays (JP NC)

Japanese approach for adjusting 3D terminology

- Coverage
 - General and fundamental terms
 - 3D key technologies for 3D display devices
 - Performances and specifications of 3D display devices
- Survey
 - Technical, historical, philological, ...
 - ⇒ avoiding confusion of the 3D terms including other related technical fields
- Harmonization and collaboration with other activities
 - Technical report “Optical Characteristics of autostereoscopic displays” in ISO/TC 159/SC 4/WG 2

Current status

	Terms
General terms	11
3D display technology	28
Apparatus or component of 3D display	15
Performances and specifications	19

Now progress...

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