SMPTE ENGINEERING GUIDELINE

Image Identification, Alignment, Transport and System Guidance for Stereoscopic (S3D) or Multi-Camera Array

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Approved
August 24, 2016

Foreword

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SMPTE EG 2076-2 was prepared by Technology Committee 32NF.

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Introduction

This section is entirely informative and does not form an integral part of this Engineering Document.

Stereoscopic (S3D) or Multi-Camera Array imaging systems deliver two or more images to a downstream process that can be used for stereoscopic display, light field computation or a Multi-View display.

To maintain the fidelity of S3D or Multi-Camera Array images it is critically important that the spatial and temporal alignment of the images be maintained at all times. Loss of alignment between the images will result in the degradation or complete destruction of the stereoscopic or Multi-Camera Array for post processing and ultimately the viewer.

This document highlights the methods and specific issues to be aware of when dealing with S3D or Multi-Camera Array images within a system. This document does not address audio or control systems as they relate to S3D or Multi-Camera Array images.

1 Scope

This Engineering Guideline provides an overview of the identification, synchronization and transport of Stereoscopic (S3D) or Multi-Camera Array motion picture and television images over SDI transport systems.

2 Conformance Notation

This Engineering Guideline is purely informative and meant to provide tutorial information to the industry. It does not impose Conformance Requirements and avoids the use of Conformance Notation.

Engineering Guidelines frequently provide tutorial information about a Standard or Recommended Practice and when this is the case, the user ought to rely on the Standards and Recommended Practices referenced for interoperability information.

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 left eye
Le

Abbreviation for Left Eye.

3.2 right eye
Re

Abbreviation for Right Eye.

3.3 three dimensional
3D

Acronym for Three Dimensional. Adding depth as the third visual dimension.

3.4 stereoscopic 3D
S3D

Acronym for Stereoscopic 3D.

3.5 S3D Image Content

Stereoscopic Image content, which results in the viewing of a scene with the perception of depth to the observer**.**

3.6 Stereoscopic

Relating to the use of binocular vision to create the perception of depth in an image.

3.7 Multi-Camera Array

Two or more cameras aligned to capture a single scene coincident in time for downstream light field image processing.

3.8 Coincident in Time

With respect to dual image signals for stereoscopic television, this means that not only are the two image signals "genlocked", but that they represent the same moments in time for the image displayed.