Interface 7, Off Link Road, Malad (West), Mumbai



High Definition (HD) Live Feed Technical Specifications

<u>Ver 2.0</u>

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1. Overview

All live feeds programs for Sony Pictures Networks India Pvt. Ltd. ("SPN") High Definition ('HD') feeds are required to deliver to the specifications laid out in this document. It is essential that high definition feeds fully meets all the SPN's channel's broadcast specifications.

2. Video Standards for HD

The live feed Video should be of PAL 16:9 HD (1920 by 1080i) pixels and at a frame rate of 25 Frames interlaced with 50 fields.

a. Acceptable Recording Media Formats

Live HD / SDI Feed Video with Embedded Audio Tracks

b. Not Acceptable

• Standard Definition ('SD') to HD up converted content (Like HDV, 16mm, Super 16mm etc.).

3. Guidelines for Live Feed

a. Video

All contents must be shot and produced in the HD delivery format. Framing can be maintained as per the standard HD 16:9 safety markers

4. Live Feed HD Format Specifications

4.1 Live Feed Format for delivery at MSM.

Live Feed Format	HD 1080i/50 (16X9	
Frame Rate	25 frames	
Video Chroma Sampling	4:2:2 or 4 :4 :4	
Video Resolution (sampled width x height)	1920 x 1080 50i	
Video Aspect Ratio	16:9	
Audio Tracks	8	
Bit Rate	24	
Audio Sampling Rate	48 kHz	
Audio Loudness	-23 +/- 1 LKFS	
Audio Sync	+/-10ms	
	Audio track 1 Mix Stereo Left	
	Audio track 2 Mix Stereo Right	
Audio Track Allocation	Audio track 3 Commentary	
	Audio track 4 Commentary	
	Audio track 5 International Stereo (or M& E) Left	
	Audio track 6 International Stereo (or M& E) Right	
	Audio track 7 Director Talk back	
	Audio track 8 Extra	

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4.2 Audio Specifications

It is essential that audio recording equipment be of the highest standard. It is critical that the dialogue /commentary /Voice is clear & audible throughout the program.

4.3 Audio Phase

Where a Clean Effects or M&E mix is supplied, the elements, which are common to both mixes, must be in phase and at a similar level, so as to avoid difficulties with editing or mixing between these tracks.

4.4 Synchronization

The Synchronization must be achieved at the last point at which the content supplier or their facility provider, has control of the signal.

4.5 Compression

While some compression may be needed to contain the dynamics, excessive audio compression of the final mix should be avoided.

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