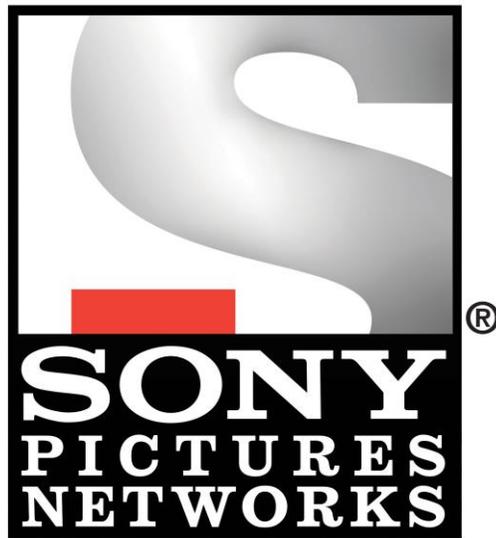# SONY PICTURES NETWORKS PRIVATE LIMITED

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

Standard Definition (SD) CONTENT
Technical Specifications

SONY PICTURES NETWORKS PRIVATE LIMITED

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

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1. **Overview**

    All programs for transmission on the Sony Pictures Networks India Private Limited ("SPN") Standard Definition ("SD") channels are required to deliver to the specifications laid out in this document. It is essential that standard definition programs fully meet all the SPN's channel's broadcast specifications.

    The SPN's channels use of proprietary compression formats for Video & Audio encoding should not be considered to be an endorsement of these products or that the implied compression techniques will always be acceptable for program mastering. Video & Audio encoding should be used with care and multi-generation copying should be avoided.

    As technology is growing and changing it is expected that changes and updates will occur regularly in the technical specification document.

2. Video Standards for SD

Video acquisition should be through a camera with a native resolution of 720 by 576 pixels and at a frame rate of 25 Frames interlaced with 50 fields.
This should be ideally at a bit rate of no less than 50Mbit/s intra frame.

a. **Acceptable Recording Media Formats (At the time of writing)**

IMX 50 encoded quicktime
Xdcam Discs with IMX 50 compression

b. **Acceptable nonlinear post production codecs (At the time of writing)**

    IMX 50

c. **Not Acceptable**
    - DV PAL, DVCam, DV LP,SP or any source acquired at 25 mbps with color space 4:2:0.
    - Any non SD shooting format that is not defined in above specifications

3. Guidelines for Shooting/ Filming

a. **Vision/Video**
    All contents must be shot and produced in the native delivery format. All SD framed content (4:3) must maintain safe action within the 4x3 center cut-out safe action area. Any relevant action, which is outside the 4x3 centre cut-out safe action area, is not acceptable.

b. **Video Safe Area**

This consideration should be given for content produced in Standard Definition and/or being delivered for Standard Definition 4:3 transmissions. Such safe areas should be maintained as indicated below.

- Action Safe Area – 90% of active width and 90% of height
- Caption Safe Area – 80% of active width and 80% of height
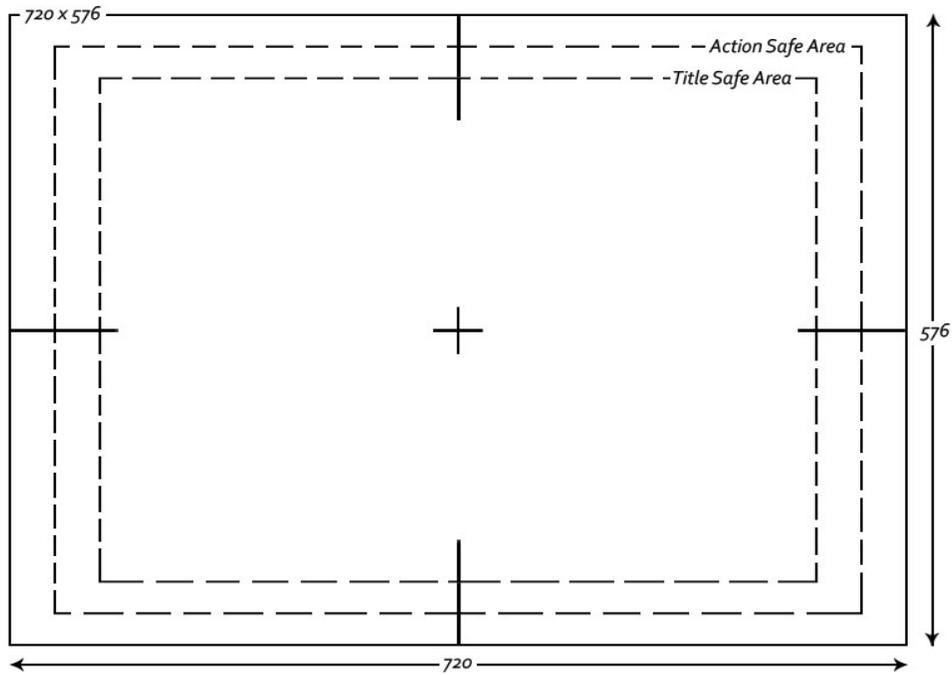
4. SD Format Specifications

4.1 File Format for delivery

File based content shall be delivered through the network/ Fire 800 disks (ntfs or mac os formatted) or XDCAM Bluray discs and SxS cards . Please note that these Hard Disks should be completely free of any virus else penalty will be applicable. Producer to be responsible for making the content readable and get it transferred onto our system (in case hard disk can't be read by our systems) and also to keep a copy of the content till transfer confirmation of footage is received.(in case of file corruption etc).

Naming Convention:

[series name]_[episode production number]_[codecbitrate master type].[extension] with each segment a separate file on the drive
Example: parvarish_14_imx50tx.mov NOTE – NO SPACES, PUNCTUATIONS, OR SPECIAL CHARACTERS

Timecode:
Timeline to be applied to the files so that EACH program starts at 01:00:00:00

File Format	IMX 50	
File Container	QuickTime	
Frame Rate	25 frames	
Video Stream Bitrate	50Mbit/s	
Video Chroma Sampling	4:2:2	
Video GOP Structure	Long GOP	
Video Resolution (sampled width x height)	720 x 576 50i	
Video Aspect Ratio	4:3 full frame / Letterbox	
Audio Tracks	4	
Audio Coding	PCM	
Audio Sampling Rate	48 kHz	
Audio Loudness	-23 +- 1 lkfs	
Audio Sync	+10ms / -20ms	
Audio Track Allocation	Audio track 1	Stereo Left
	Audio track 2	Stereo Right
	Audio track 3	Dialogs
	Audio track 4	M&E

4.2 Audio Specifications

It is essential that audio recording equipment be of the highest standard. The recording quality is vital, as distortion etc. at the time of recording cannot be fixed and could cause the completed program to be rejected. It is important that dialogue is clear and audible throughout the program.

4.3 Audio Phase

All audio tracks must be recorded with the correct technical phase relationship throughout the program, including the reference tone signals recorded for line-up before the start of the program.

In particular the stereo tracks must be fully mono compatible such that, when Left and Right channels are summed to a single mono track, there is no significant change to the audio level or fidelity. 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 Video Down Conversion

When there is a requirement to down convert the content which is in High Definition, it is mandatory that the channel programming team and channel technical team agrees on the format to be delivered. Depending on the content format/quality available a informed decision would be taken whether to go with center cut or letter box or any other format.

4.5 File Based Delivery

A. TX Master (MCR)
File format: IMX 50 with Quick time container (.Mov (PAL 4:3)) with 4 Audio tracks,

Audio track 1	Stereo Left
Audio track 2	Stereo Right
Audio track 3	Stereo Left
Audio track 4	Stereo Right

B. Library Copy (Unmix master)
Specifications as per point 4.1 above. All Unmix masters have to be clean with respect to the crawls, scrolls, channel logo contest or any other extra content that may make the episode dated.

C. Run Sheet:
With start time, finish time and breaks duration of 20 seconds to be frame accurate.
Source faults, video and audio level information and Operator / Editor Name to be duly mentioned, printed & signed. Also the run sheet needs to be emailed to the concerned SPN staff. (format of the same is attached along with this document)

D. Preview Copy:
                DVD – With TCR

5. Points for Preparing Transmission Copy

- The content should be delivered in file format only.
- The PROGRAM must be frame accurate to begin at 01:00:00:00.
- BREAKS: Frame accurate 20 seconds black to be maintained in between 2 consecutive segments.

a. The labels on the Hard Disk, XDcam disc, must contain only the following information:

- Name of the PROGRAM
- Episode No:
- Episode Name (where applicable):
- No. of BREAKS:-
- Duration of PROGRAM (Excluding BREAKS)
- Type of master (mix/ unmix)

b. TECHNICAL SPECIFICATIONS for SD

FOR VIDEO

1. Luminance level should not exceed 100% with +2% tolerances (i.e., 102%)

Note: Video, Composite 1 volt peak to peak with 0.7 volts of video and 0.3 volts of sync pulse.

2. Maintain black level as per requirement of the scene or shooting material. Avoid excessive black crushing.
3. Video signal should be free from ringing, smear and echoes. Colour rendition (skin tones) shall be natural.
4. The program should be in the standard 4:3 full screen or 4:3 letterbox with proper creative approvals.
5. Video quality should be without noise and with good picture details. RF level of the recorded signal should be proper as per international specification between 3 and 4 on RF meter.
6. Average picture level should be 54%.

FOR AUDIO

1. Over shooting, hum, distortion etc. should be avoided during audio recording. Dialogue, music & effects must be properly mixed and that Audio is synchronous with the visuals.
2. In case of dubbed programs dialogue, music and effects should be synchronized with the picture.
3. Audio signal should not contain hum, distortion or sibilance. Wow or flutter should not be objectionable.
4. Overall sound quality shall be pleasing and free of noticeable noise or spurious signals (eg. Hum, buzz, distortion, wow, flutter, or excessive sibilance).
5. Microphone placement shall have ensured that the effect of location acoustics and environmental noise are minimal.
6. Tonal balance, bass to mid range to treble, shall be pleasing and natural.
7. Sound shall have been appropriately captured so that all programs shall maintain correct spatial relationship between pictures and sound, for both stereo and multi-channel audio.
8. All audio channels shall be in phase from beginning to end unless artistic considerations require otherwise. The program should generally remain 'in-phase' to provide mono compatibility.
9. Use of excessive limiting/compression in order to conform to audio peak level requirements, should especially be avoided.
10. The audio shall be free of excessive limiting/compression (pumping or peak distortion).
11. Dynamic range of the audio tracks shall not be excessive. They shall be suitable for a large variety of domestic listening conditions. Upon domestic decoding, the surround sound shall be suitable for a large variety of domestic listening conditions.

IMPORTANT:

The above TECHNICAL Guidelines are to be followed strictly. Transmission content having dropouts, scratches, glitches incorrect aspect ratio & video resolution, video flicker & jerks, poor Video Quality, audio out-sync, hiss, jerks & drop outs will be totally rejected.

6. **Specifications for submission of INTERNATIONAL TRACKS and GRAPHICS**
Submission of INTERNATIONAL TRACKS

a. All submissions is to be done either on DVD or Hard Disk
b. Opening Montage-mixed track on both the channels
c. Opening montage-unmixed track-vocal on channel 1 and International tract on channel 2.
d. Extra music tract created for any sequence.
e. Break bumper music
f. Happy version (mixed and unmixed track) of jingle/song
g. Sad version (mixed and unmixed track) of jingle/song
h. Any special songs created for that particular serial should be submitted both in mixed and unmixed format.
i. End Credit music track if created separately (mixed and unmixed)

Submission of GRAPHICS
Basic Requirements:

    a.   All submissions is to be done on Hard Disk
    b.   Opening montage of graphics (if any) with background and without background.
    c.   Opening montage video without supers
    d.   Break bumper graphics with and without background
    e.   Animation created for opening montage
    f.   End credits, graphics, scroll and credit titles with and without background.

Technical Specifications:
ANIMATIONS

All animations which are intended for use and application during the post production process will need to be provided as one consolidated uncompressed QuickTime Movie file as well as a sequence of Targa image files. All files should have a pre-multiplied alpha channel where appropriate.

All animations/graphics that will be applied by automation at play-out will need to be provided as a sequence of Targa image files and all files should have a pre-multiplied alpha channel where appropriate.

TECHNICAL SPECIFICATIONS
QuickTime Movie Files for Graphics
- Uncompressed
- 4:2:2
- Animation
- Millions of Colours
- 25 Frames per second
- HD - 720 x 576 pixels
- Progressive Scan
- Pre-multiplied alpha channel

    Targa Files (wherever required)

- Uncompressed
- 32-bit
- Millions of Colours
- SD 720 x 576 pixels
- Pre-multiplied alpha channel

7. Other Submission

a. Synopsis & dialogues Scripts (in English) of each episode with appropriate stills / photographs should be sent over to the Executive Producer of the Program along with the Rough Cut. The following must accompany all clips & other deliverables being submitted to Sony Pictures Networks India Pvt. Ltd.:

- List of credits (cast and crew) with each episode
- Final dialogues script
- Soft copies of the synopsis & dialogues scripts to be provided to the Operations Department separately.
- International Tracks for every episode has to be delivered. In-case songs are specially composed for the program or episode then it's International Track on DVD, Lyrics in soft & hard copy also needs to accompany the episode.

Copyright permissions should have been obtained for all music tracks, archival material and stock footage used. A copy of the letter should be submitted

8. Technical Rejection Policy:
There shall be no technical rejection charges for the first two technical rejections of the mixed masters. An amount of Rs._____ (Rupees _____ only) would be deducted from the consideration towards the episode, from the third technical rejection of the episode onwards. In case of minor correction we shall follow the above pattern, however if the PROGRAM has been supplied to us late and there is not enough time to revert back, then Sony Pictures Networks India Pvt. Ltd. shall endeavor to make the corrections at its end and shall bill the producer accordingly for such corrections. The minimum amount charged shall be Rs._____(Rupees _____ only) per such correction.

Disclaimer

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