Post-Production Scheduling Guidelines v.01.1

23 March 2021

South African Guild of Editors
A non-profit company, #2007/006516/08
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1. INTRODUCTION

SAGE has compiled these Post-Production Scheduling Guidelines as a handy reference for producers.

The essentials and considerations for post scheduling and the workflow pipeline are included.

Please note the guidelines on rates, hours and overtime on its website that constitute what SAGE considers best practice for post-production:

https://www.editorsguildsa.org/pages/279-Rate_Card

SAGE recommends that producers consider the services of an experienced post-production supervisor who will be able to highlight all the creative, technical, budget and scheduling considerations of post at the start of the production scheduling and budgeting process.

A further proviso is that picture and sound finishing after picture lock has many variables dependent on budget constraints, timelines, deliverables, and the creative vision of the project to name a few. Producers should get costs and timelines from properly briefed post facilities or service providers before scheduling and budgeting this important stage of post-production.

2. THE ESSENTIALS FOR CREATING A POST-PRODUCTION SCHEDULE

The Post-Production budget is informed by the creative and financial considerations of post-production before work on the project even begins. You will need a production schedule to create an accurate post-production schedule. In order to accurately budget your project you will need to ask some basic scheduling questions such as:

- When does production start shooting?
- When must you deliver?
    - The delivery date will mostly likely have no resemblance to the air or TX date. The delivery date needs to consider the time required for Translation and Dubbing for Localisation, as well as QC.
- Will production and post-production overlap?
- Do you need to schedule time in production and post-production for a title sequence?
- Will there be visual effects?
- What marketing and promotional materials do you need to consider during production?

2.1 SCHEDULE FIRST, BUDGET NEXT

It is most important to consider whether you are on a short turnaround for anything. This will affect the budget. Without knowing your project workflow you cannot determine the timeframes needed for the various stages of post-production.

Check your Broadcaster's Technical Specifications when determining your post-production workflow:

- Choice of Main Camera
    - Is this choice of camera compatible with your choice of editing and grading Non-Linear Editing (NLE) systems?
    - Does shooting RAW work for your budget and timeframes?
- Choice of Secondary Cameras, such as Drone and Go-Pro

  - What technical considerations need to be taken into account so that repetitive metadata created in these camera formats does not cause technical troubles in the workflow pipeline?
- Choice of Audio Recording Devices

2.2 WORKFLOW PIPELINE

Proficiency tests need to be done at each step, it is not just about the compatibility of equipment and software, but also understanding the length of time tasks will take under different scenarios. The proficiency tests would most likely be coordinated by the post-production supervisor and involve an assistant editor, an editor, the sound department, as well as grade and online service providers. The tests should be done using footage from camera tests shot with the camera intended for the production. Doing tests with footage from a camera you don't intend using will not give you the accurate time frames you need for your budget.

"Bigger is not always better", so know which active frame capture size (8K, 4K, 2K or HD) best works for your production and post-production budgets and channel technical deliverables. Without a proficiency test it is impossible to circumvent technical challenges that could occur in post-production due to the incompatibility of camera or audio firmware with the choice of NLE or Audio and Colour Correction systems. Identifying issues and finding solutions before production could have cost savings, in the region of R500 000 for a series, for additional time needed at the ingestion and preparation of footage, as well as, editing and during the conform.

A post-production workflow will also probably need the services of IT at some point, either as part of the NLE system hire or as support to make sure all NLE systems, FTP, intranet and internet systems are maintained and supported, and this must be factored in. Do not assume that editors can function as built-in IT support.

2.3 WHY IS POST-PRODUCTION INVOLVED IN A PROJECT FROM PRE-PRODUCTION?[1]

Oftentimes the editor sees the footage for the first time while watching the dailies and then must make sense of all the disparate images they receive. This is counter-intuitive to an art form which is collaborative in its process.

Editors are storytellers and involving the editor in pre-production allows them a clear understanding of the director's vision and how they intend for the story to unfold visually. It provides an opportunity for the editor to offer creative and technical input to avoid sometimes-costly mistakes. For example, if the director is planning an extended take, an editor will be able to see opportunities for alternate shots that cut into the take in case it does not work dramatically or the timing of the shot is not right for the rhythm and pace of the film. The editor can also point out places where insert shots and cutaways can be used for dramatic effect. The synchronised efforts of the cinematographer and editor will result in a better film, regardless of the size of the budget.

While it's easy for the cinematographer to pass off problems to the editor, doing so can create problems that are detrimental to the finished film. You don't want to have to salvage a scene through clumsy editing, especially if the editor could have identified these potential editing problems ahead of time.

Ultimately the final product is in the hands of the editor who brings an objectivity and will help the director to "kill [the] darlings" during post-production. The editor will cut shots and scenes that the director can't bear to part with but need to go for the benefit of the film.

[1] https://www.premiumbeat.com/blog/effective-pre-production-collaboration-between-the-cinematographer-and-editor/

Post-production includes many roles such as:

Post-production Supervisor	Supervising Sound Editor
Editor	Sound Editor
First Assistant Editor	Music Editor
Second & Third Assistant Editor	Sound Designer
Post-production Runner	Foley Editor
Online Editor	Re-recording Mixer
Subtitler	ADR Dialogue Editor
Colourist	Audio Assistant

Please see the useful SAGE document Post-Production Roles for descriptions of the various roles

2.4 FIX IT IN PRE-PRODUCTION

This attitude starts in pre-production and it is crucial it is maintained on-set. Don't spontaneously change your workflow when you arrive on-set. Allowing the DOP or director to change the active frame capture size (8K, 4K, 2K or HD) will ripple into all the cost decisions you have made in pre-production.

The use of correctly labelled clapperboards and audio tracks accompanied by the correct corresponding paperwork allows the assistant editor to organise and prepare the project for the editor, instead of problem solving which audio belongs to which visual. DIT, Sound and Camera reports are important.

3. WORKFLOW & SPECIFICATIONS

"Post-production workflow is not a black art that only a few understand" Alex Ferrari

But it's important to know that a workflow for a feature film can look very different to the workflow for a series. What should be considered at the various stages of a project to get the job done correctly, efficiently and cost effectively:

3.1 CHANNEL & STUDIO SECURITY POLICIES & PROTOCOL

- Physical security
- Firewalls
- Watermarked Exports and Turnovers
- Password Protected transfer services such as Aspera and PIX

3.2 PRE-PRODUCTION

- Determine your camera selection based your Broadcaster Technical Specifications, as well as:
    - The frame rate based on your Broadcaster Technical Specifications
    - The active frame capture (HD, 2k, 4k, 8k) based on your Broadcaster Technical Specifications
    - The recording codec based on your Broadcaster Technical Specifications
- Determine a camera naming convention and keep to it
    - It's either Camera A, B, C or 1, 2, 3. It can't be numerical one day and alphabetical the next
- Determine your Sound Gear as well as a naming convention and keep to it
- Determine your Non-Linear Editing (NLE) system
- Determine your Colour Correction system

3.3 PRODUCTION

- Camera Setup
- Production Sound
- Onset Data Management
- Colour Pipeline
- Production Paperwork
    - Camera reports
    - Sound reports
    - Continuity reports
- Dailies Workflow
    - Data BackUp: Insurance requires 3 copies at 3 different locations
        - Hard drives: remember that they have a shelf life and they will die without reason
        - LTO
    - Transcoding
        - Decide if the transcodes will be created by a DIT or if they will be created in post-production
        - Make sure you have sufficient GPU power in the system dedicated to this process for a reasonable turnaround time.
        - Agree on the CODEC for the transcodes. The NLE will dictate this decision.
        - Decide how post-production will receive the transcodes: uploads or hard drive?
        - Decide if the LUT will be burnt-into the transcodes or applied in the NLE
        - Discuss the assignment of reel names for your footage with your Online Editor and Colourist for when the project is conformed for colour correction.

Use a clapperboard and label it correctly! It assists the assistant editor in tracking and tracing information between the Sound, Camera and Continuity departments. Consider it a useful tool in managing your pipeline. Without the information provided in a clapperboard and the relevant paperwork from the various departments, it is extremely time consuming and sometimes impossible to trace where a technical problem originated on-set. An assistant editor will also require additional time to sort through incorrectly labelled and badly organised footage so that they can make sense of it before the editor starts cutting.

3.4 POST-PRODUCTION

- Spotting Sessions are required at the various steps of the Post-Production workflow
- Post-Production Media Management & Preparation
    - Dailies screeners for producers and or channel are created by the Assistant Editor
    - Decide if you want to receive only a selection of the dailies or everything. How are they being distributed? These decisions have different time implications.
    - Synchronisation of visual and audio media
    - Create merged clips or multi-cam clips and label the clips (non-destructively) according to the slate information.
    - Organise the project for the editor as per the editor's preference.
- Picture Edit
    - Allocate sufficient time in the sourcing, procuring, clearing, costing and converting of Documentary archive or stock footage needed for a production.
- Music
    - Composed to Picture (with or without scratch tracks during Editorial)
    - Licensed from a music library
    - Licensed use of Copyrighted music from Artists and Record labels
- Sound Edit
    - ADR
    - Foley
- Visual Effects (VFX) and or Graphic Effects (GFX)
- Picture Finishing
    - Conform: the process of replacing lower-quality media in an edit or a shot with higher-quality media, usually camera-original files
    - Colour Correction (Grading)
    - Online Edit
    - Subtitling
        - Check your technical specifications for the placement of your subtitles to avoid clashes with channel bugs, logos etc.
- Final Mix
- QC
    - Studios such as Netflix use a 2 vendor QC process to ensure the quality of the Final Master and by extension the user experience of the programme. Once Vendor A has completed their QC it is verified by Vendor B who completes a second "blind" QC for comparative purposes.
    - Netflix QC process takes into consideration that their media is available across approximately 1600 Devices all with varying colour calibrations and technical specifications. Think about HBO's Game of Thrones (803) "The Long Night" and the subsequent controversy of the episode being "too dark". And then you'll reconsider everything you thought QC was and should be.
- Mastering of Picture and Sound Deliverables
    - Digital Cinema Package (DCP)

- Do you need a DCP? Yes, if you are going to film festivals and will have a theatrical release. But understand the technical specifications for the framing and the specified frame rate a film festival or studio requires for their conversion process of your DCP.
- UHD is not 4K so again understand what the technical specifications asked for by the broadcaster.
- Dolby Atmos or 5.1 or stereo (interleaved or not)

- International versions will require delivery in different frame rates. NTSC (23.98fps; 29.97fps) or PAL (25fps) You will need to know what your final commissioned duration is:
  - Conversion of 23.98fps footage to 25fps creates a shorter duration in 25fps. So you may need to shoot additional scenes to meet the duration requirements of your international version.
  - Conversely you'll create "Lifts" when creating your 23.98fps versions from 25fps timeline. Lifts are normally self-contained scenes that will cause the least ripple effect into the music and soundscape of the project.
  - 25fps to 29.97fps drop frame conversion will maintain the same duration, but there is a chance that it might be 1/2 frame shorter or longer, but that depends on the converter and there is no way to control it.
  - Cut-to-Clock (CTC) versions and seamless versions
- Delivery
- Archiving of Media Assets

3.5 FUTURE PROOFING

For the next technology (in case of new encoding profiles, devices, codecs and resolutions etc.) or the future sale of a project to new distributors at a later date, you must consider future proofing. This means keeping an LTO archive of the media as well as the project files, EDLs, XMLs and various deliverables of the Picture Lock timeline for both video and audio.

Archive and backup are words that can be commonly interchanged, but in storage they're actually very distinct processes with different objectives.

- An **archive** is a primary copy of files that aren't needed immediately. They're typically stored on a less-expensive, highly reliable and durable medium so that the original storage device can be reused. Typical applications include retaining permanent records – such as compliance – and data management. Content, such as music and video, is also typically archived for later use. Archives are rarely overwritten.
- A **backup** is a secondary or tertiary copy of original data. It's primarily used to restore data in the event of an emergency, such as a disk failure or disaster recovery. Backups are typically overwritten with new data at a later time, allowing for reuse.[2]

And of course you will need to consider remote working and Cloud-based workflows and tools to enable efficient collaboration in a COVID-19 world.

[2] https://www.lto.org/solutions/applications/

4. WHAT TO CONSIDER WHEN DETERMINING THE POST-PRODUCTION SCHEDULE

- Start by determining your Delivery date. This will most likely have no resemblance to the TX date (when your project airs on the channel or streamer).
    - The Delivery date will need to also consider the time required for Mastering of Picture and Sound Deliverables, Translation and Dubbing for Localisation, as well as, QC.
- The Delivery date may determine the number of editors needed for a project.
    - The number of editors needed in turn may determine the choice of software.
- Understanding the advantages and limitations of different NLE systems will be crucial in making an informed decision. This area is where your proficiency tests will become valuable.
- The amount of collaboration between editors the project requires, such as, the sharing of media across episodes could also influence decisions on the project preferred NLE system. Tighter turnaround times may require more collaboration than more generous turnaround times.
- The level of involvement by a Series Producer and or Series Director, Show-runners, Channel Executives, Commissioning Editors etc.
- What resources and tools will be made available to the post-production team to assist the creative process
    - Content Directors using Cut Notes
    - Translation and transcription of interviews including interviews conducted in English
    - Availability of software such as Script Sync and PhraseFind (for AVID) or other Transcription Integration Tools for quick access to information in transcriptions and or scripts.
- Understanding a single camera workflow vs. multi-camera workflow.
- Preparations for the correct NLE system
- Uploads and download speeds to FTP sites: Aspera or PIX
- Elements needed for International Localisations:
    - Textless Master files must be completely free of all text (e.g. - without words, show title/logo, numbers, abbreviations, units of measure, etc.).
    - Programs with factoids and/or popups, the Textless Master files should include the on-screen graphic without text. Additionally, this shot should also be provided without text and without the graphic element at the end of the textless master.
- Preparation and Creation of promotional materials

4.1 PICTURE

A good producer who understands editing will want more time in the edit suite as they know how this time can re-shape and create a sharper more compelling story, which will elevate the production value. Do your editor and yourself a favour - the better the Editors Cut the happier everyone will be down the road. Also consider your liability with regard to exploitative representations of people especially in reality shows. Editors need sufficient time to view all the material and producers need to take caution when instructing editors to use Frankenbites that convey an alternate meaning from the original intention.

- The first day of the Editors schedule is the first day of cutting, not prepping nor the organising of footage, projects etc.

- Subtitling is not the Editor's responsibility, so discuss the workflow between the Editor and Subtitler should subtitles be required before Picture Lock. Also consider that translation is a separate responsibility to creation of the subtitles.
- There is a difference between making changes after a viewing, and doing a recut or major restructuring, which obviously requires more time.
- Determine the number of days for the:
    - Copying of media to the server and or hard drives
    - Organisation and preparation of the project for the Editor
    - Syncing of audio and visual
    - Merging and creation of multi-clips
    - Edit schedule based on the shoot ratio (see conversion table below)
    - Subtitling
    - Preparation and labelling for VFX
    - Conform of the project
    - Exports of cutting copies for sound, online, grade and VFX

This is where your workflow pipeline proficiency test helps determine the timeframes you will need for each step of the process. It must be noted that if your proficiency tests are not performed with the servers, hard drives and systems you intend to use for your project you will not get an accurate indication of the time needed for the various steps. Computer speeds and the choice of cabling between systems all influence the outcomes.

4.2

A CLASSIC CONVERSION FOR STRAIGHTFORWARD OFFLINE EDITING PER CAMERA		
This **Excludes** all Project Preparation and Organisation, Viewings, Exports, Subtitling and the Editing of Promotional Materials		
Option 1	**1 finished minute equals 1 hour of editing: 24 minutes will take 24 hours (3 days)**	This depends on the genre and complexity of the edit.
Option 2	**Total hours of footage times 3:** 20 hours of footage will be 60 hours, divided by 9 for an average day, equals 6.66, which rounds off to 7 days.	This is *only* for scripted formats.

4.3 VISUAL EFFECTS

Visual Effects (VFX) are difficult to schedule in the abstract. You need to know how many and how complicated the shots are. You also can't determine how many clean ups you may have in pre-production. If you are on a tight delivery schedule, VFX may need to begin before picture lock, which may require the Editor to Picture Lock specific sections of their timeline ahead of Picture Lock.

4.4 SOUND

- Determine the number of days for the:
  - Sound edit, sound design, foley and ADR before turnover to Final Mix. Understand when you will get hit with a short turnaround fee and budget for it.
  - Final Mix days will be based on the complexity of the soundscape for the show.
  - Dolby Atmos, 5.1 and or Stereo (interleaved or not)
  - Dubbing

5. SCHEDULING THE PICTURE EDIT FOR NON-FICTION

UNSCRIPTED TV [3] can be on any subject, from natural history, religion and music, to dating, interior design or learning a skill. It's programmed on primetime TV, daytime TV and children's TV, as well as, streaming platforms like Netflix and YouTube. The term 'unscripted' really means 'without actors', because every TV programme has a narrative and script.

TV DOCUMENTARIES are shot in a limited time frame for a specific broadcaster. TV Documentaries most often use a guiding voice over or script, which assists in reducing the editorial time needed.

FEATURE DOCUMENTARIES often require years of filming and months (sometimes years) of editing, which is often done in fits and starts, as funding comes in from various sources. Editing can occur over a period starting at 3-5 months and spread over 1-2 years. The time it takes to review the footage and to find the story can only be estimated. Therefore the main point of departure is the shooting ratio. Documentaries such as Miners Shot Down, Dying for Gold would be considered Feature Documentaries.

6. GLOSSARY

- DIT aka Digital Imaging Technician
- Non-Linear Editing (NLE) systems for video are AVID, Adobe Premiere Pro, FCP X, DaVinci Resolve. Pro Tools, Adobe Audition, Reaper, Nuendo and Logic are NLE systems used for audio editing.
- A Post-production Supervisor helps a producer achieve as much as is possible in the edit process without going over budget. On films that involve using complex CGI (computer-generated images), they make sure the producer is aware of all the creative and financial considerations of post-production before work on the film even begins. Post-production supervisors help hire staff for the edit, like sound editors and title designers. They work closely with the production accountant, supplying accurate information for the cost reports. They usually continue to work on the production until all the elements needed for the completion of the film are delivered. This includes the music and effects version, which allows the dialogue track to be replaced with different languages.
- The Editor puts together (cuts) the pictures (rushes) as they come in from the set (or lab, if the drama is being shot on celluloid). Films tend not to be shot in the order in which the story unfolds, so editors might be working on scenes from the end of the film before the beginning. Their job is to take scenes in non-story order and edit them bit-by-bit into a whole. In pre-production, editors work closely with the director to decide how to make the most of the script. Once filming starts, they look at the rushes each day, checking technical standards and the emerging sense of story

[3] https://www.screenskills.com/careers/job-profiles/unscripted-tv/

and performance and editing it into a series of scenes. By the time the film wraps editors will have spent hours reworking scenes and cutting them together to create a rough assembly. During post-production, the editor and director will work closely to refine the assembly edit into a director's cut, which must be approved by producers, until they achieve picture lock (known as final cut). After that, the music and sound are added to the mix, a process that editors will oversee.

- A First Assistant Editor: is responsible for the day-to-day running of the cutting room, leaving the editor free to concentrate on editing the film. Their primary task is to communicate with other departments, like production, camera and sound. They check camera sheets when the rushes arrive and note any technical problems. Sometimes the editor asks the first assistant to do an assembly cut.

- Second & Third Assistant Editors: First assistant editors might be helped by several assistants, depending on the size of the production. The assistants label files and do simple cutting, editing and sound syncing. They read oscilloscopes and audio meters, TV and video signals, are familiar with technical specifications for different broadcasters and understand compression.

- A Post-production Runner keeps the edit suites tidy, makes tea and arranges meals. They sometimes work on reception, answering the phone and making clients and guests feel welcome.

- A Supervising Sound Editor is responsible for all sound post-production. They are the picture editor's main point of contact for everything concerning the production soundtracks. They manage the team that looks after each part of the sound of a film or TV drama. This includes those responsible for dialogue, additional dialogue recording (ADR), sound effects, background sounds and Foley. Their role varies according to the budget of the production. On lower budget films they start work when the picture editor has achieved picture lock – the point at which the director or executive producer has given the final approval for the picture edit. On bigger budget films, they start work before shooting begins and appoint specialist sound editors to supervise separate teams for each area of work. After picture lock, supervising sound editors attend a "spotting session" with the director and other sound editors. They discuss any concepts for the overall feel of the sound (naturalistic or stylised) check every sound effect and line of dialogue to see what's needed. They will then have a hands-on role in creating the overall soundtrack for every discipline. They are responsible for the sound budget and for organising the sound workflow – from sound editorial, Foley recording, ADR sessions, pre-mix to final mix - and making plans for any special requirements. After the final mix, supervising sound editors usually oversee the creation of the different deliverables, including a music and effects version, which allows dialogue to be replaced with dialogue in different languages.

- A Sound Editor works through the film methodically, making notes of any lines that need re-recording. Depending on the size of the production, they will pass that over to the ADR mixer or dialogue editor (see below) or they will do that work themselves. Sound editors then sync up the Foley, ADR and sound effects to the picture creating tracks to be used in the pre-dub. Then the tracks are mixed so they have a consistent quality and dynamic range, ready for being heard in cinemas and on TVs. By combining the tracks, it brings them tonally closer together, making it easier for the final mix of three tracks: dialogue, music and effects, which accompany the finished film.

- A Music Editor intensifies the emotional impact of a film by creating the soundtrack. They contribute mood, atmosphere and the occasional catchy theme tune. They usually start work while the film is being edited. They work with the director to decide on the purpose of the music, find a style to suit the story and mark the points in the film where music is required (spotting). Then they develop the temp (temporary) score. Music editors then work closely with a composer, who is usually appointed by the director, and who composes the music using the temp score as a template. The temp score is also used by the film editors to achieve the right tempo with the cut. Music editors often

act as a bridge between the sound and picture teams. They attend all recording sessions, helping with any revisions and design a 'click track', which is used to help the musicians achieve synchronisation with the movie. Working with a specialist music mixer, they create different mixes, lay down the tracks and fit them exactly to the picture, ready for the final mix or dub.

- Sound Designers previously known as sound effects editors (SFX), are concerned with all the sound effects whether that be gunshots, clocks, doors closing, dog barking (spot effects) or rain, wind, traffic, birdsong (atmosphere effects), or special effects such as aliens talking.

- A Foley Editor adds subtle sounds that production microphones often miss. These often relate to movement, such as footsteps, fights, fist banging on a door, or pouring wine, shards of glass falling from a broken window. The process gives scenes added realism. They note every Foley effect that is required and work out how to create that sound in special studios. They create the sounds with Foley artists in front of a projected picture and may try several different ways get the right effect. After the studio recording, Foley Editors fit all the Foleys to the images in perfect sync.

- A Re-recording Mixer mixes a soundtrack for preview sessions. They work at large mixing consoles smoothing out sound and adding a temporary music soundtrack prepared by the music editor. After previews, when the film or show has been re-cut, re-recording mixers further pre-mix the sound and reduce the number of tracks in preparation for the final mix. In the final mix, the soundtrack is refined in consultation with the director and mixed to industry standards.

- An ADR Dialogue Editor reviews the original sound files of a production to spot technical or performance-related problems and analyse whether they could be replaced by an alternate take. Working on a digital audio workstation (DAW), they use editing software to cut between a number of takes to create crisp clean lines of dialogue. If this isn't possible they will use additional dialogue recording (ADR). This is where actors come in for a voice recording session, watching themselves on screen and re-voicing as accurately as possible. After newly recorded ADR has been edited into the original track, ADR mixers work to make all background or ambient sound smooth.

- An Audio Assistant looks after the audio suites, checking they are tidy and ready to be used. They help with voiceover recording and find and order special effects from libraries. They help with selecting and mixing dialogue, music and special effects.

- The Online Editor is responsible for delivering the final product according to the correct technical specifications required. Online editing often refers to the process of adding the final titles, graphical elements and inserting the visual effects shots, as well as preparation for colour grading and audio mixing. If the colourist and online editor is the same person, then grading and colour correction will also happen during this process. If the offline cut comprises proxies or low resolution visuals, the shots will now be replaced with the relevant high resolution footage, which is known as conforming. Conforming can also happen when moving between different systems, such as from editing software to a colour grading specific software. If required, the online editor will do compositing, which involves the combining of separate visual elements into a single image. The online editor is also responsible for ensuring that the technical specifications for broadcast delivery are met. It is during this stage that colour bars, countdown clocks and slates are added, as per the broadcaster/client's requirements. The online editor will often receive the mixed audio tracks to put them into the project and prepare this for play-out or export. The online process can be as short as a

day, or take a few weeks, depending on the number of tasks to be performed and the duration of the final programme.

A Subtitler makes it possible for films to be enjoyed by audiences all over the world and by the deaf and hard of hearing. They translate all the dialogue, music and sound effects of a film into two-line written captions that appear on the screen, either in the language in which the film is made or in a foreign language. After carefully watching and listening to the whole film, they write captions with accurate time codes that describe music and sound effects as well as the dialogue and voice-overs. The captions have to be punctuated and spelt correctly and should be on the screen long enough to be read easily. Translating subtitlers translate the dialogue and write subtitles in the language for a particular audience. Once they have done that and checked that all spelling is correct and that captions don't obscure characters' faces, the files are sent to the mastering house (transferring the final soundtrack onto the film in all the various formats). It can then be distributed to cinemas offering subtitled screenings or to cinemas around the world.

A Colourist contributes to the mood and look of a film by defining the colour grade. They work with the director and director of photography to decide the palette. When colourists receive the files in the edit, they stylise the colour in line with the vision of the director and director of photography. They match the shots, balancing colour saturation and luminance so no one shot stands out in the sequence. They also offer creative solutions to picture-related problems, and are also responsible for ensuring the film complies with the law around luminance levels and chroma.