

Record motion pictures in different formats to get the best possible quality coinciding with less storage space

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Abstract:

When shooting digitally, one of the most basic decisions a director of photography needs is to select the recording format, whether in a raw format such as RED raw, ARRI Raw, Cinema DNG, or a compressed format such as QuickTime or MXF. Most digital cinema cameras have the ability to do both. Smaller cameras also record raw video data, such as those manufactured by Black magic, Canon, Nikon, and Sony. Quality is considered one of the most important production elements of the image. If the director of photography uses a digital camera that records in RAW format, he must know that there is no single and specific format for the raw data. Rather, the format and extension of the file produced by the camera varies according to the manufacturer and model of the camera, and he must consult the Director of Photography Post-production operators to know the full workflow of the camera he is using. RAW camera recording in which light data is recorded directly from the sensor into a special file and some may use various compression methods to make these large files more editable in post-shooting and others may not. The advantage of RAW media is that it records everything the camera sensor sees, providing more color detail with the most image data to work with in post-production and this usually affects what ISO or aperture settings we use and how we monitor those the image and how to record the default camera metadata that is written to each raw file but the fact remains that you can change this metadata when you start editing raw clips. One of the main advantages of compressed primary media formats is their small file size, which facilitates the storage space and bandwidth requirements needed to work on a project. However, RAW formats have drawbacks where it is difficult or impossible to edit directly, necessitating conversion to a different format in a second step and possibly re-editing later when it is time to edit, adding time and complexity to the post-production process. Furthermore, recording in raw formats results in large amounts of data that needs to be stored and backed up and requires a certain amount of post-production knowledge to integrate seamlessly into a particular workflow which is why cameras usually offer the option of recording in other formats. **Statement of problem:** Companies produce cameras with a single sensitive chip and try to employ modern technology to obtain an appearance and quality that is close to the cinematic film, including the development of different recording formats. Although RAW files are characterized by high quality, the high space is abused, which results in problems in storage as well as processing, which makes DOP turn to Shooting in different log formats, and recently new formats have appeared that combine the features of Raw and reduce storage space, such as Pro Res RAW and Tico RAW. Unfortunately, there is not much information about the preference of using these systems or not, and whether they retain information without loss in exchange for a small space that facilitates recording and processing? **Objective:** The research aims to provide a comprehensive scientific study on image compression methods and how to get the best results by studying modern methods that combine the advantages of the raw and log formats for moving images. **Hypotheses and questions:** What are the new RAW formats and what are the differences between them? What is the difference between the log format and the raw format, and how is each format different from the other? - If the recent developments of recording the different formats and their development are studied, we can judge the preference of using any of them to obtain the best possible quality in addition to the speed of information transfer, ease of editing and giving a cinematic appearance to the moving digital image **Methodology:** The research follows the descriptive analytical approach to study the features of both Raw and Log formats, determine the role of each of them in the imaging process and their impact on the quality of the motion picture, and study and analyze the results of the questionnaire. **Results:** Results show the research sample opinion agreement regarding the questions the opinions of the sample that the majority agreed on the importance of the director of photography's knowledge of the development taking place in recording in the different formats, and the sample's opinions agreed in agreement with 80% that the shooting format in the Raw format is better than the shooting format in the Log format for shooting motion pictures (video - cinema), but preference was given to the log format 86% for ease of handling in both recording and editing processes, and sample opinions agreed on the importance of using modern formats for RAW format, as it came with 90% for Pro Res Raw format, compared to 83% for Tico Raw format And the sample 53% disagree that shooting in log format leads to the loss of a large part of the data that we may need again in the editing and modification processes. After the theoretical study and the conduct of the questionnaire, the student reached the following results: 1 - Raw file

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format is the optimum format for high quality image and better editing ability. 2 - The Log format will continue to be used, but it must be developed. 3 - The Tico Raw format reduces space and transfers information while maintaining quality, by converting the Raw format to JPEG xs. 4 - Join hands to agree on common and uniform standards so that there is a single file format for storing Raw information

Keywords:

RAW, log, Gamma, codecs, Tico raw, JPEG xs

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