

A Brief Analysis of NLES Application in News Program Production (Postprint)

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Date: 2023-10-08T00:00:00+00:00

Abstract

NLES (Non-linear Editing System) features digital recording capabilities, exhibits strong usability, and demonstrates excellent compatibility with diversified systems. Moreover, NLES supports open-ended expansion, thereby establishing itself as the preferred solution for news program production. Some advanced NLES adopt cutting-edge media resource mechanisms, featuring integrated authentication permissions and Net connectivity, enabling real-time adaptation to diversified workflows. This fundamentally circumvents inherent difficulties in news program production, earning considerable favor within the news production industry. This article initiates with an analysis of NLES applications in news program production, proceeding to conduct in-depth investigations on this foundation, with relevant content elaborated as follows.

Full Text

Abstract

NLES (Non-linear Editing System) offers digital recording capabilities, strong usability, and excellent compatibility with diverse systems. Its open architecture and extensibility have made it the preferred choice for news program production. Advanced NLES platforms leverage cutting-edge media resource management mechanisms, integrated authentication, and network capabilities to accommodate diverse workflows, fundamentally overcoming inherent challenges in news production. This paper analyzes the application of NLES in news program production, exploring related issues in depth.

Keywords: NLES; news program production; application

1. Composition and Characteristics of NLES

NLES requires support from both hardware and software components. The primary hardware includes computers, sound cards, video cards, and peripheral devices. Video cards collect and transmit analog video signals, performing synchronous analog-to-digital conversion. NLES software primarily comprises 2D and 3D animation software, audio processing software, and image processing tools.

NLES delivers high-quality image signal transmission. Traditional videotape-based editing inevitably degrades signal quality during the news editing process, whereas NLES fundamentally avoids this problem. Signal quality remains stable regardless of the processing method or number of editing iterations. NLES significantly improves news production efficiency. Its storage media—optical discs and hard drives—can store massive amounts of data, enabling convenient material searches. Information is stored in a parallel architecture, allowing non-linear playback of audio-visual materials and arbitrary arrangement combinations. The most notable characteristic is the simplicity of modification and trimming. NLES facilitates flexible creation of special effects and subtitles, streamlining the news editing workflow and maximizing editing efficiency. Additionally, NLES achieves high synchronization between audio and video. Stereo audio input allows for balanced or unbalanced adjustments, simplifying audio signal equalization while supporting digital audio I/O compatibility. During post-production, NLES minimizes production costs. The system structure is relatively simple, requiring only a download station and an NLES setup to ensure comprehensive post-production capabilities. Due to its highly open architecture, NLES supports periodic upgrades and is compatible with most hardware and software.

2. Application of NLES in News Program Production

Before using NLES for news production, relevant materials must be ingested. This involves converting content recorded on videotapes during preliminary filming into computer-processable files—a process known as material upload. DV-CAM equipment commonly used in preliminary filming can conveniently connect to NLES via IEEE1394 interface for lossless capture. Scene-based capture is recommended, where each shot is stored as a separate file to facilitate editing. When capturing with EDIUS software, the automatic scene detection function can be enabled to split footage based on timecode breaks. After all tape materials are imported into NLES, each shot is stored separately as a series of asset files.

Feature programs typically involve large amounts of material, resulting in numerous files after scene-based capture. Locating specific segments becomes difficult if all materials are stored together. Therefore, classification management is essential for convenient retrieval and selection. Category directories can be created in the material library to organize assets accordingly. EDIUS provides

synchronized editing capabilities with real-time playback and DV output for all effects, transitions, and subtitles, offering an efficient editing method for feature production. The editing process essentially involves matching appropriate video images to narration content, followed by necessary special effects, subtitles, and other processing as required.

Controlling rhythm is crucial in editing. Only by mastering rhythm can the plot and visual action of news programs remain coherent, maintaining continuity in both content and form while applying thematic concepts to structure and perspective. Narrative visuals rely on logical principles and shot duration to determine edit points. Precise edit points ensure coherent, stable, and natural visual flow. NLES's greatest advantage in edit point determination is its real-time positioning capability—allowing rough positioning by dragging on the timeline or frame-accurate positioning via mouse wheel scrolling, eliminating the time-consuming search process required in tape-based editing systems and significantly improving editing efficiency.

During material assembly, NLES allows deletion of one or multiple shots at any time or insertion of clips at any position, enabling both insert and assembly editing commonly used in tape editing. These functions facilitate editing modifications, allowing editors to continuously refine their work.

Since all materials in NLES are stored in digital format, copying clips does not degrade image quality as in tape duplication. Generally, there is no need to duplicate materials during editing, as the same clip can be used repeatedly in a program without increasing storage space usage. Applying standard effects to materials does not affect other repeated instances.

NLES establishes professional post-production usernames with independent passwords, creating separate directories for various news program columns under each username. This ensures content independence for each column's materials while enabling news resource sharing. During operation, because numerous journalists are involved in production, communication and handoff methods can become cumbersome. NLES allows setting up separate folders for pending programs and subtitle files. Completed programs from journalists can be directly transferred to corresponding folders, reducing workload for both post-production staff and journalists.

The quality of news programs largely depends on post-production personnel, as music effects, subtitle special effects, and opening/closing sequences are prerequisites for program quality. News production is a complex task requiring not only clip assembly and subtitle-video synchronization but also video-audio mixing. NLES supports multiple subtitle overlay layers and features built-in professional audio processing functions with diverse subtitle effects and filters. These capabilities enable audio adjustments, direct volume control, placement of narration and synchronous sound on different audio tracks, and subtitle insertion during post-production. News programs require extensive subtitles, making accurate addition essential to prevent errors. NLES allows clear identification of

individuals before adding corresponding titles, corner logos, and finally subtitles or lower-thirds.

Many contemporary news programs employ visual and subtitle special effects, whose effective application directly impacts program quality. Common effects include fade-in/fade-out, mosaic, and motion speed adjustments. NLES offers unique advantages in handling these effects. Its built-in filter special effects are outstanding, including 2D and 3D effects for targeted color adjustment, geometric transformation, keying, and image control. With hundreds of built-in special effects that are easy to use and adjust on demand, post-production staff can create appropriate effects based on program characteristics, ensuring smooth curve transitions.

When processing subtitle modules for news columns, production personnel typically build fixed subtitle units for each program. With NLES, only minor adjustments are needed based on previous templates. NLES features convenient editing and modification functions—single-screen subtitles can be modified by simply pressing the T key and saving after changes. For more complex subtitles, independent adjustments can be made using software functions.

News program production consumes substantial storage space. As data and materials continuously accumulate and occupy hard drive space, NLES operation speed decreases. Therefore, periodic cleanup of unnecessary materials and news segments is required. This not only creates sufficient space for new stories and materials but also maximizes NLES operational speed. To prevent file loss, important files should be systematically backed up and transferred to backup hard drives.

In practice, NLES demonstrates significant advantages in news production but also has inherent limitations. During application, if data and materials continuously occupy large amounts of hard drive space, the cleanup process requires importing and exporting content, which consumes considerable operation time. Improper operation may result in loss of work files and data.

In summary, conventional videotape editing affects signal transmission quality in ways that cannot be avoided, whereas NLES fundamentally circumvents these issues. Signal quality remains stable regardless of processing method or editing frequency. NLES minimizes production costs during post-production with a relatively simple system structure requiring only a download station and NLES setup to ensure comprehensive post-production capabilities. Its highly open architecture supports periodic upgrades and compatibility with most hardware and software. With comprehensive technological development, computer multimedia software continues to evolve with rapid product iteration. Currently, NLES has become more complete and mature, gaining widespread application in news program production. Therefore, news editors must continuously learn NLES technology, deepening professional expertise and skills while mastering and utilizing NLES to maximize its potential in news production.

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Source: ChinaXiv — Machine translation. Verify with original.