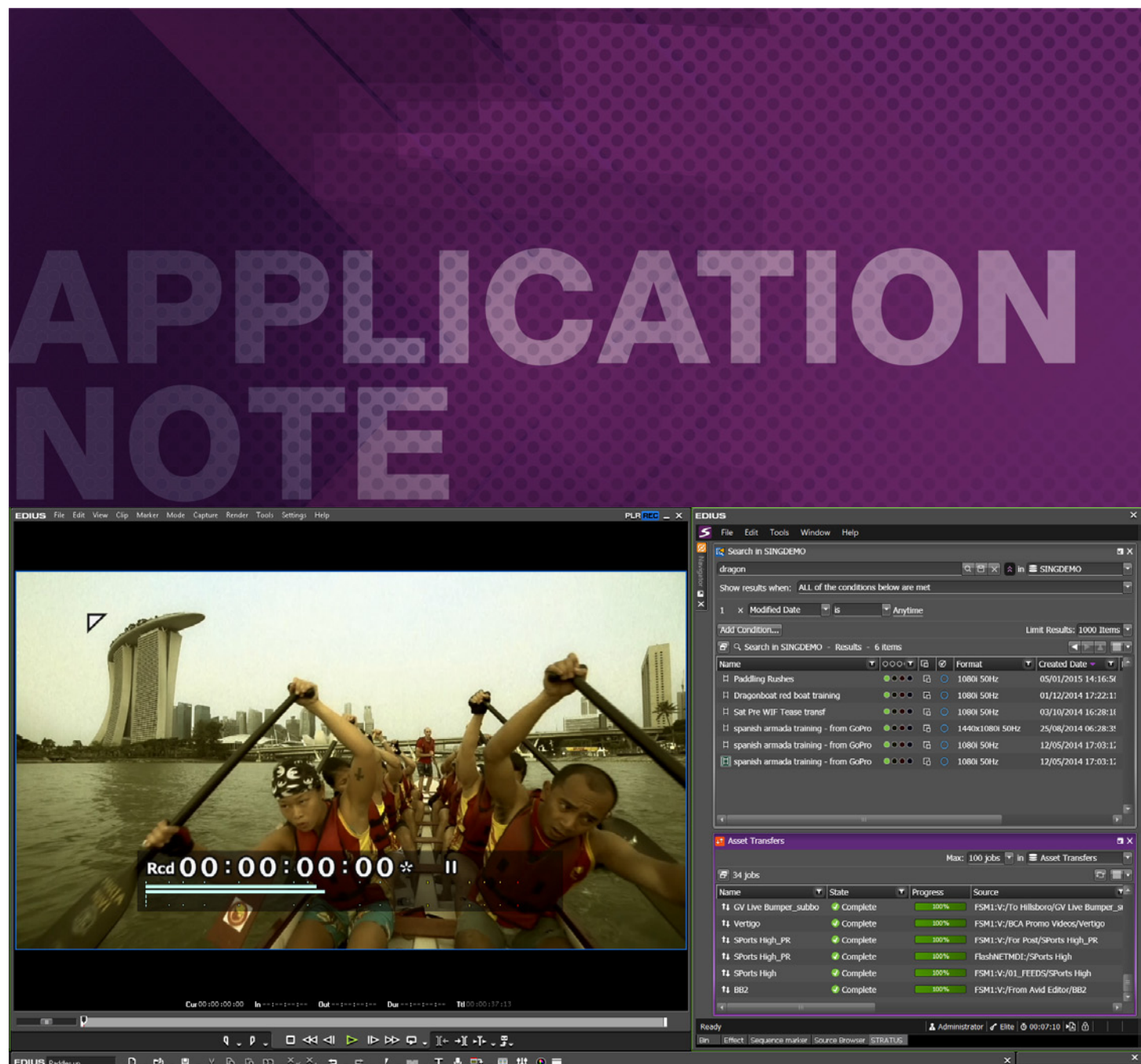


GV STRATUS for Postproduction Workflows

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The screenshot displays the GV STRATUS application interface. The main window shows a video player with a rowing team in a boat, with the Marina Bay Sands building in the background. The video player has a timeline at the bottom showing 'Cur 00:00:00:00' and 'In 00:00:00:00'. To the right of the video player is a search results panel titled 'Search in SINGDEMO'. It shows a search for 'dragon' with 6 results. Below the search results is an 'Asset Transfers' panel showing a list of assets and their transfer status.

Name	State	Progress	Source
GV Live Bumper_subbo	Complete	100%	FSM1-V:/To Hillsboro/GV Live Bumper_s
Vertigo	Complete	100%	FSM1-V:/BCA Promo Videos/Vertigo
Sports High_PR	Complete	100%	FSM1-V:/For Post/Sports High_PR
Sports High_PR	Complete	100%	FlashNETMDL/Sports High
Sports High	Complete	100%	FSM1-V:/01_FEEDS/Sports High
BB2	Complete	100%	FSM1-V:/From Avid Editor/BB2

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Introduction

GV STRATUS, from Grass Valley, a Belden brand, is modular production asset management (PAM) system and toolset that embraces ingest, editing, distribution and content management in a single, collaborative platform. Easy to use, consistent and versatile, GV STRATUS

tools can be configured for many types of user and media facility. This Application Note describes the tools, components and capabilities of the platform, and how it can be adopted specifically for postproduction workflows.

Workflow Overview

The flexibility and customization options offered by the GV STRATUS toolset provide the ideal platform for collaborative workflows, file sharing and asset management within a postproduction environment. Working together with any or all of the leading nonlinear editing applications, GV STRATUS will add value to any postproduction environment by providing efficient content management, workflow automation and storage optimization, including user permissions.

In this document we will describe in detail how GV STRATUS can maximize efficiencies for postproduction environments such as film production, promo creation, documentaries, and short- and long-form programming. We will then look at the integration between GV STRATUS and the various different nonlinear editing (NLE) tools, including Grass Valley EDIUS, Adobe Premiere Pro CC, Avid Media Composer and Apple Final Cut Pro.



Content Management

Postproduction requires large amounts of raw material to be easily located and classified. Grass Valley offers robust video storage with varying degrees of performance and redundancy, from standalone reduced-scale servers (such as K2 Solo 3G and K2 Summit 3G) all the way to quite extensive K2 SAN and NAS architecture.

Storing & Finding Material

Managing hundreds of hours of raw footage is always a challenge, and this is where GV STRATUS can maximize efficiencies by providing a comprehensive asset management platform to efficiently store, classify and administer valuable media assets, from raw footage to regularly used (and protected!) openers, closers, backgrounds and final masters.

GV STRATUS allows producers and media managers to create bins and sub-bins within the K2 storage. Additionally, for content that is distributed across various bins, such as content shared across different productions or episodes, assets can be grouped within a specific set of folders, so that it is easy to locate all the material that an editing team may require, with a single push of a button.

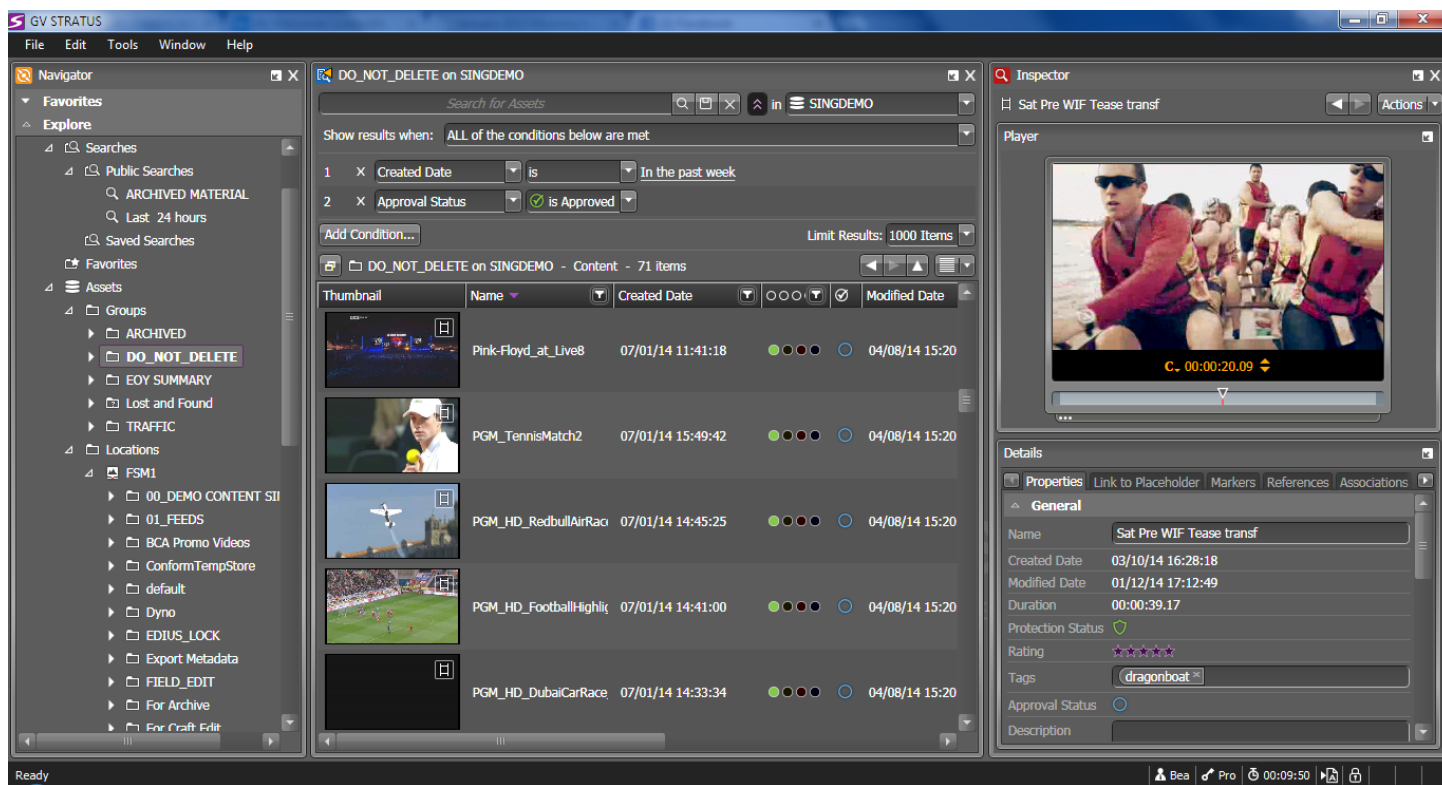
Equally, saved searches allow users to build their own filters based on the most useful criteria, such as “creation date” ranges, or specific flags (e.g., “for review”), or even specific keywords within a description field. Once a complex search is built and saved, the user can deploy it quickly and easily at any point.

User Permissions

From version 4.0 onwards, GV STRATUS has provided the ability to set user permissions for individual users and groups to access content per folder, or per asset, at different levels: read-only, read and write, read/write/delete, and even no-access (meaning they do not even see the folders or assets in question).

This allows a postproduction facility to simultaneously work on productions for multiple clients, protecting content that should only be used by editors working with a particular client.

Producers, supervisors and media managers can also determine who can modify asset metadata or delete media when needed.



Metadata: Saving Time During The Production Process

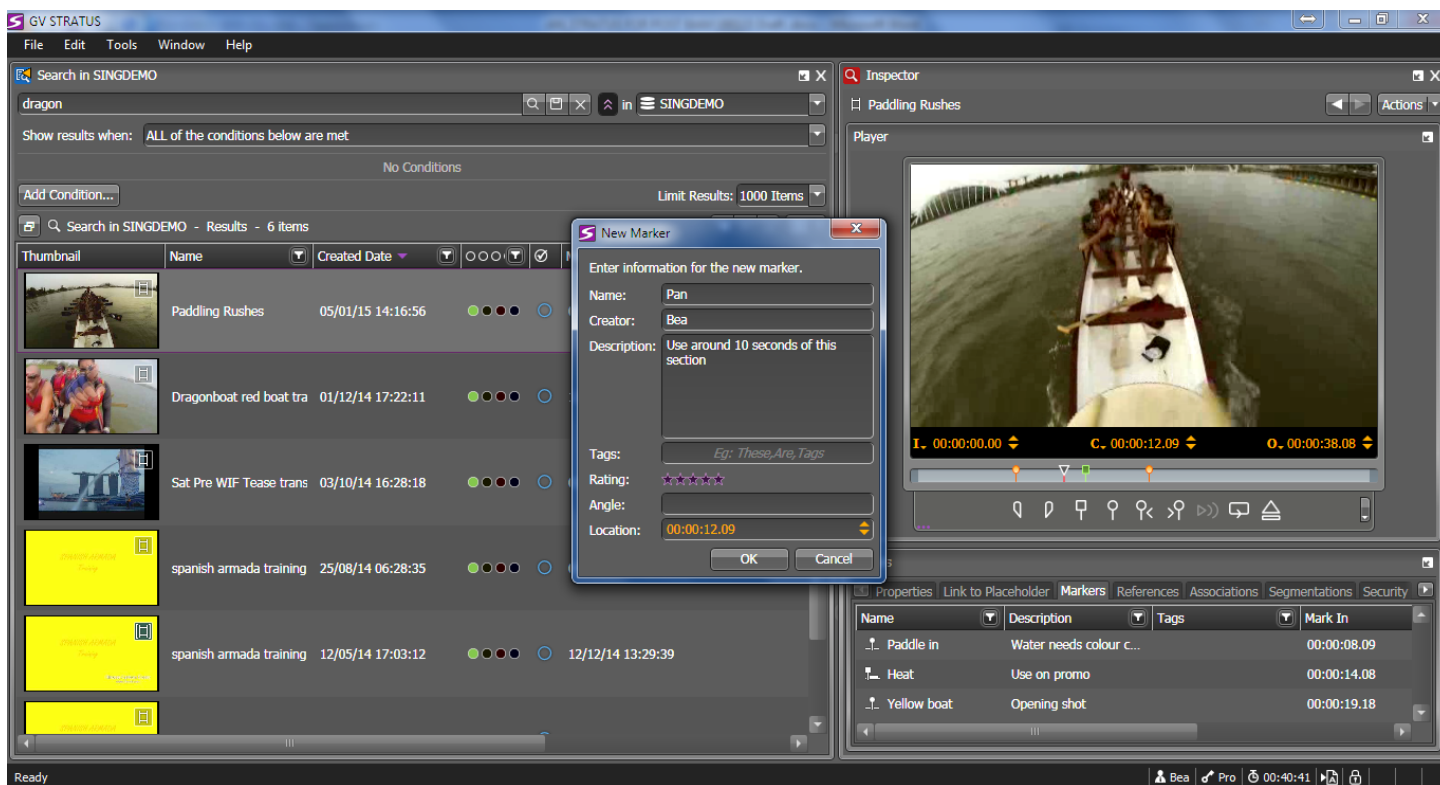
With the various tools offered by GV STRATUS, production teams (assistants, producers, loggers, etc.) can access video assets such as rushes and partially edited sequences, at any point of the workflow. For example, while rushes arrive in the facility and are being ingested/imported into the K2 storage, it is possible to browse and add metadata to the media as the files are being recorded (known as a growing file).

A producer, for instance, might want to log the rushes, adding markers and comments, describing the content, entering keywords and tags that will later speed up the process for editors to find the precise content they need, rather than spooling through hours and hours of raw material.

As well as the basic markers and keywords that can be added via the Inspector, GV STRATUS offers an Advanced Logging tool which allows users to customize their own logging panels and metadata tags. Refer to the “Review/Approval Workflows” section below for more details.

All this valuable metadata helps editors later in locating the content they need, and quickly get to the relevant timecode points where producers have entered markers and keywords. This marker information is also transferred to all the NLEs that GV STRATUS interfaces with (EDIUS, Adobe Premiere Pro CC, Avid Media Composer and Final Cut Pro), considerably reducing the time that a craft editor needs to spend locating the right content.

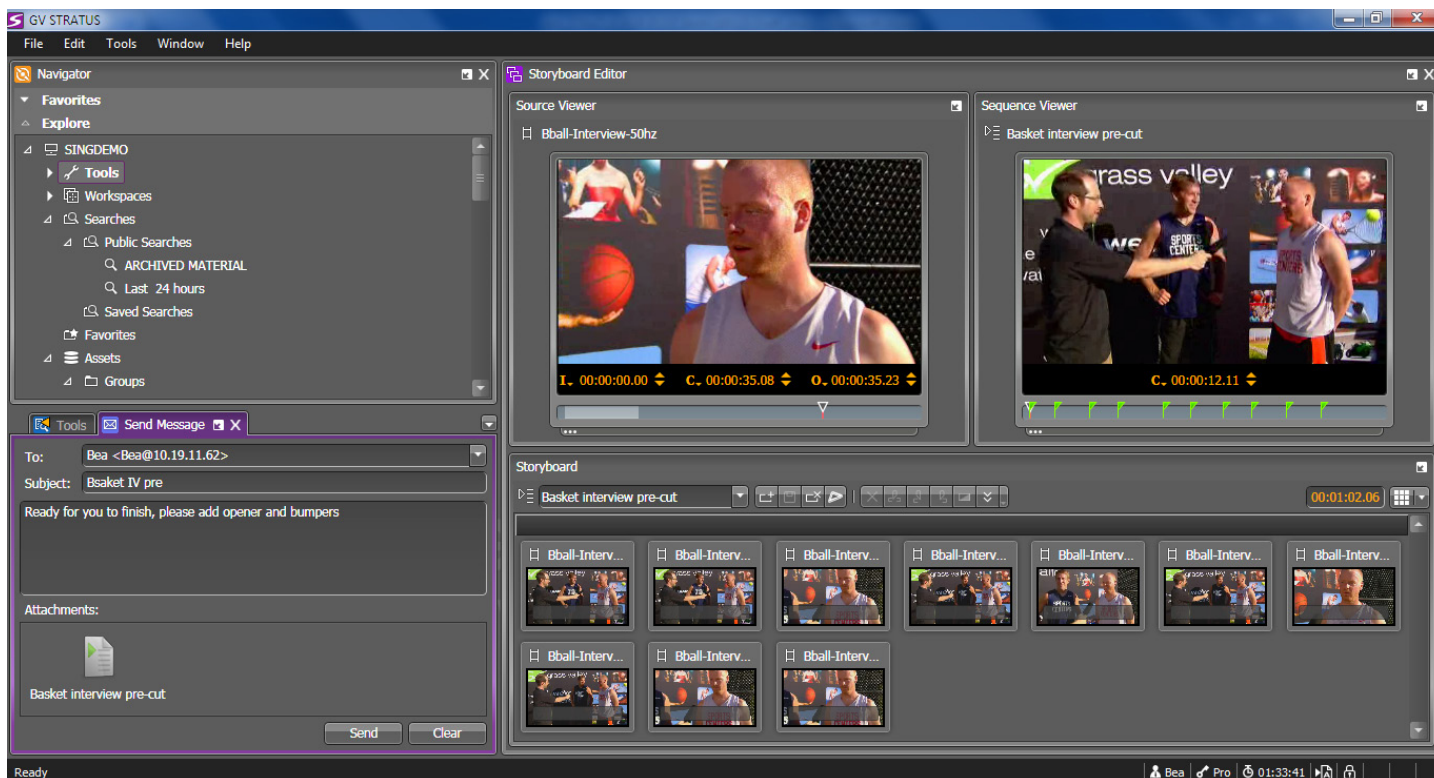
Of course, GV STRATUS searches can be as generic or as specific as desired, and by entering a simple word, all metadata fields, including markers and description text can be searched. Boolean searches combining “and”, “not” and “or” as well as text strings are also supported.



Pre-editing To Save Time

Greater efficiency can be introduced by using the sub-clipping and storyboard editing tools within GV STRATUS. A producer or assistant editor can pre-select material and create sub-clips from long clips of rushes. For example, from a three-hour interview, a producer can pre-select the main highlights and either create sub-clips, or even build a rough cut sequence of how they would like the editor to cut the interview.

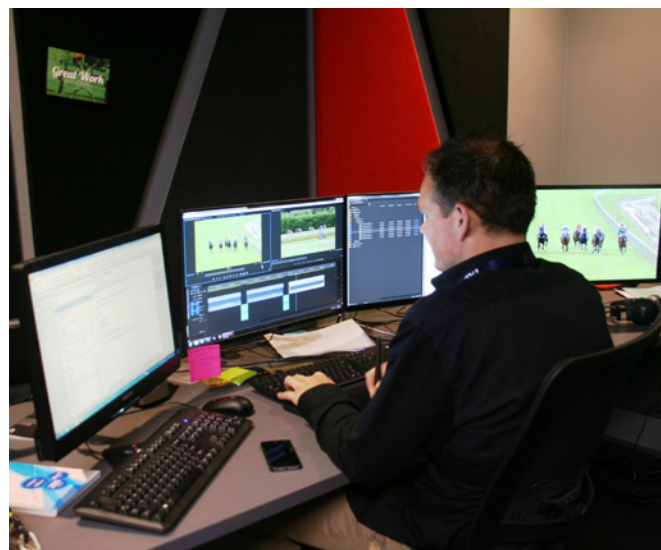
Using the GV STRATUS messaging tool, once the producer has completed the pre-editing work, they can easily send a message to the editor, including a link to their rough cut. This pre-production work, in the form of sub-clips or storyboards, can be opened by the craft editor in the NLE as a sequence, with all of the edit points and references back to the master clip(s). This facilitates the editing process enormously, involving the craft editor only when their high-end editing skills are required.



Collaborative Workflows: Ingest Once, Use Many Times

GV STRATUS provides flexible tools to allow teams to collaborate and work simultaneously on the same material. Producers, assistants and editors can all easily locate material for the same production, program or episode, and perform different tasks simultaneously without interfering with each other's work. While video rushes are being uploaded to the shared K2 storage, a production assistant can start annotating and cataloging scenes, while a producer can make shot selections (as described above), and an editor can start creating their editing project and putting aside content for their final master.

One craft editor may be working on a trailer or a promo, whereas another may be working with the voiceover talent, in a separate edit suite, to lay the voice tracks. The powerful asset management and collaboration workflows supported by GV STRATUS introduce speed and efficiency to the production process by ingesting once and allowing many simultaneous uses.



Editing Workflow & Tools

Grass Valley is committed to providing flexibility and choice to its customers, and proof of this openness is the support and integration with all of the leading NLEs: Grass Valley EDIUS, Adobe Premiere Pro CC, Avid Media Composer and Apple Final Cut Pro.

There are detailed Application Notes describing our workflow and integration with each NLE, available on the www.grassvalley.com website. Also, the online GV STRATUS Topic Library provides configuration and operational instructions to work with these third-party tools. For the purposes of this Application Note, we will briefly describe how GV STRATUS can add significant value to the postproduction process, irrespective of your choice of NLE.

EDIUS

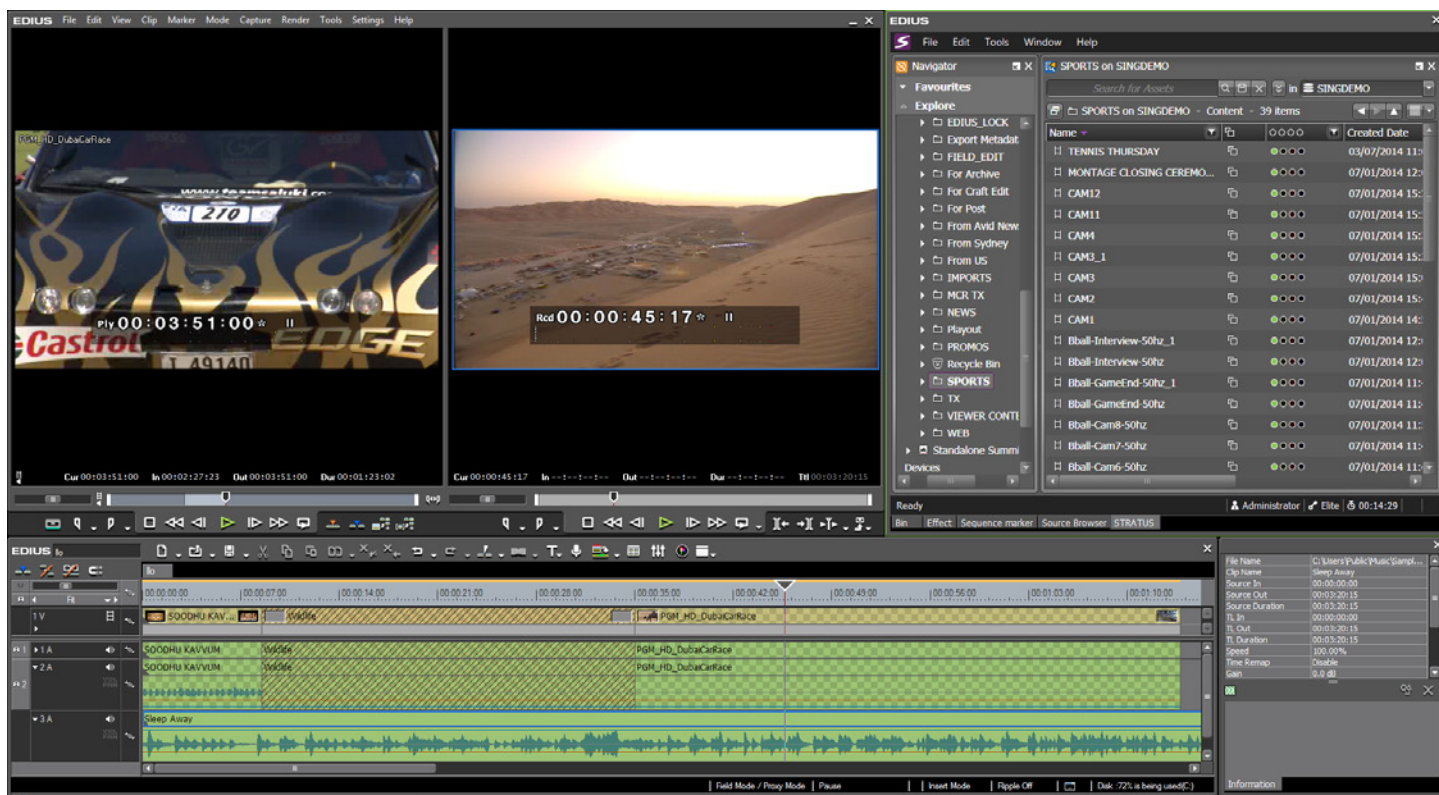
EDIUS is a multiformat, multilayer NLE with a high level of effects capability and the fastest system performance of any editor in a K2 infrastructure. EDIUS can access and edit-in-place media on the K2 SAN, and can publish finished materials to K2 for playout.

When working together with GV STRATUS, Grass Valley EDIUS is unique in that it can be deployed as a low-resolution editor or as a

high-resolution editor. This provides users with an extremely efficient and powerful way to perform craft editing of a sequence, but in low-resolution proxy mode. Because EDIUS is seamlessly integrated into the GV STRATUS environment, users have a completely consistent experience, from an initial pre-edit to finalizing a craft edit, including effects, audio, voice over, titles, etc.

EDIUS users can:

- Connect directly to the K2 SAN and edit-in-place
- Edit “growing” files (files currently being recorded)
- Open sequences from the GV STRATUS storyboard editor
- Use local files such as audio and still pictures and render them as part of the final edit
- Open sequences from the GV STRATUS storyboard editor
- Send finished pieces to K2 for playout via the GV STRATUS render engine
- View and use annotations created by other users in the system



EDIUS editing low-resolution proxy assets.

All GV STRATUS tools are available to users within EDIUS, consolidated into a single workspace, so that they can find content, load it in the EDIUS player window, edit in proxy mode, and then send the job to a GV STRATUS render engine. For example, if a producer has created a pre-edit sequence in the Storyboard Editor (as described above), users can launch the sequence in EDIUS for further editing in proxy mode, thus minimizing the need for storage bandwidth.

All GV STRATUS metadata entered during the preproduction process can be searched and viewed in EDIUS, and GV STRATUS markers are viewable and updated in real time on the EDIUS timeline.

EDIUS users can also use GV STRATUS tools to find content and drag-and-drop material from the K2 shared storage to the bin, viewer or directly to the timeline. Edited pieces can be sent to the K2 for playout. The timeline can be published as a K2 program (playlist), or as one file (K2 clip). The file can be played out of the K2 after approximately seven seconds from when the start of the media arrives, and also while a transfer is in progress.

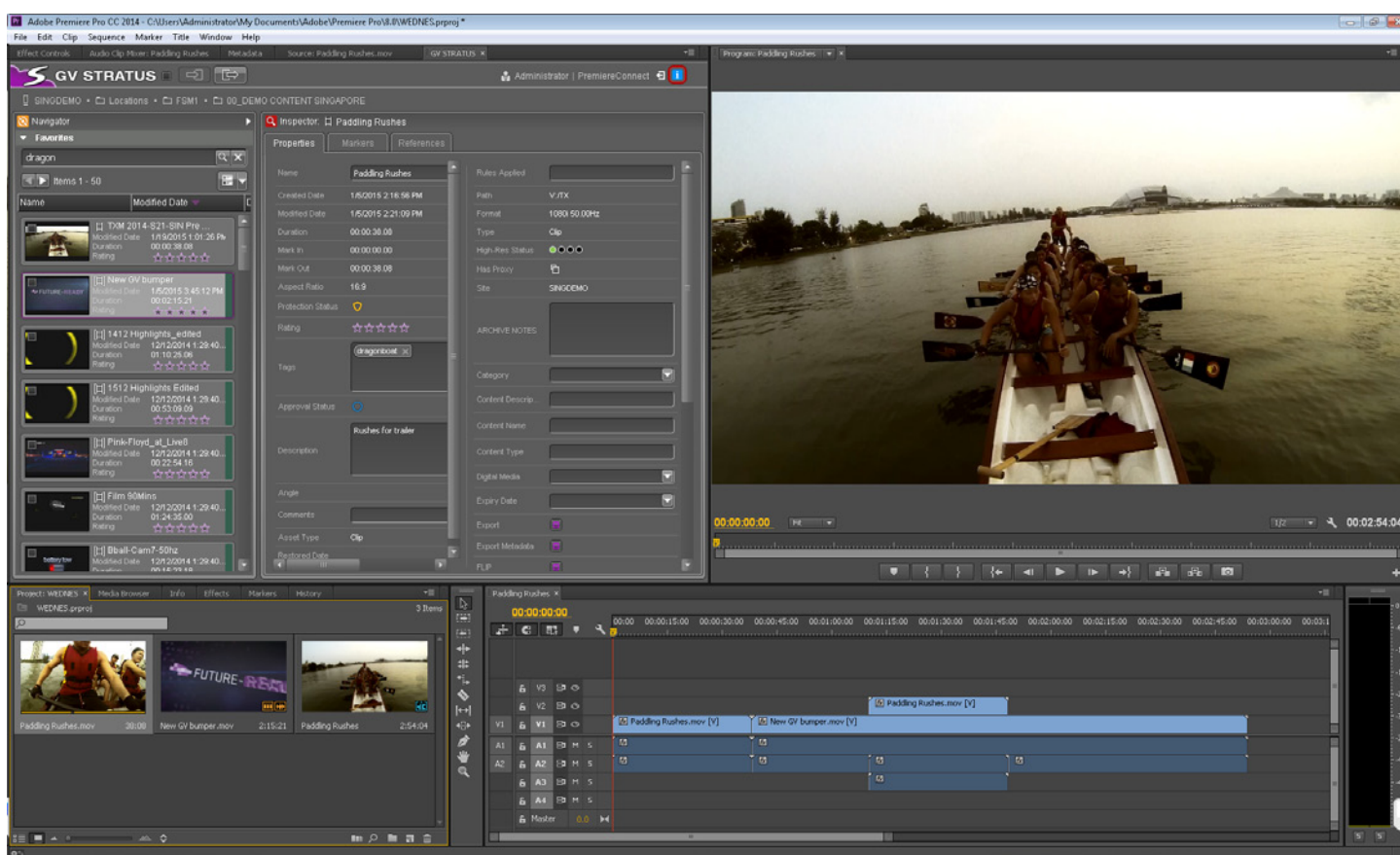
Adobe Premiere Pro CC

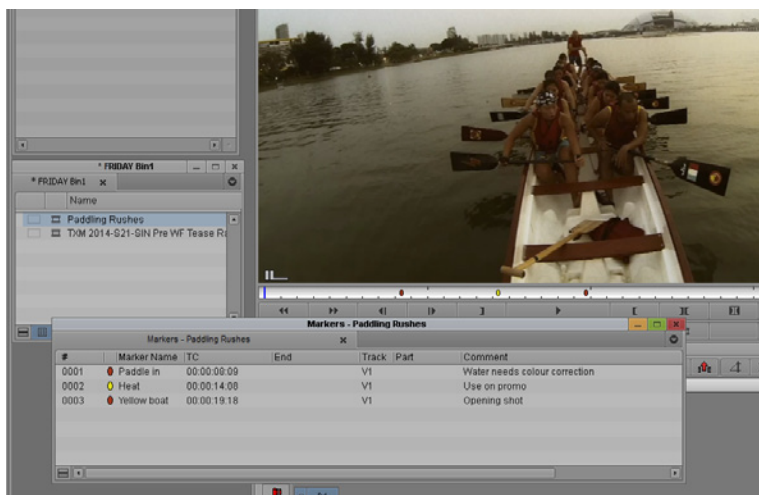
When Adobe Premiere CC is integrated with the GV STRATUS system, users can launch the GV STRATUS interface as a plug-in within the NLE. Content is accessed in high resolution and directly off the K2 storage, without the need to transfer media files for editing. The user will therefore be editing-in-place, online on the K2 shared storage.

The GV STRATUS plug-in interface includes the Navigator and Inspector tools, enabling users to access clips and metadata stored on K2. This allows for consolidation of editing operations into a single, integrated workspace. From here, users can:

- Search and navigate GV STRATUS assets
- View and modify asset properties, including metadata tags that can trigger automated rules, such as archiving, transcoding and exporting requests
- Import K2 clips, sub-clips and sequences to the active bin
- Add K2 assets to an Adobe Premiere project timeline
- Edit timelines with any mix of Adobe and K2 files, including K2 growing files
- Send finished pieces to GV STRATUS/K2 in K2-friendly format for payout

Markers and keywords added to media assets with GV STRATUS will also be available in the Premiere project bin. For more details and step by step operations, consult our GV STRATUS/Adobe Premiere CC Application Note and GV STRATUS Topic Library.



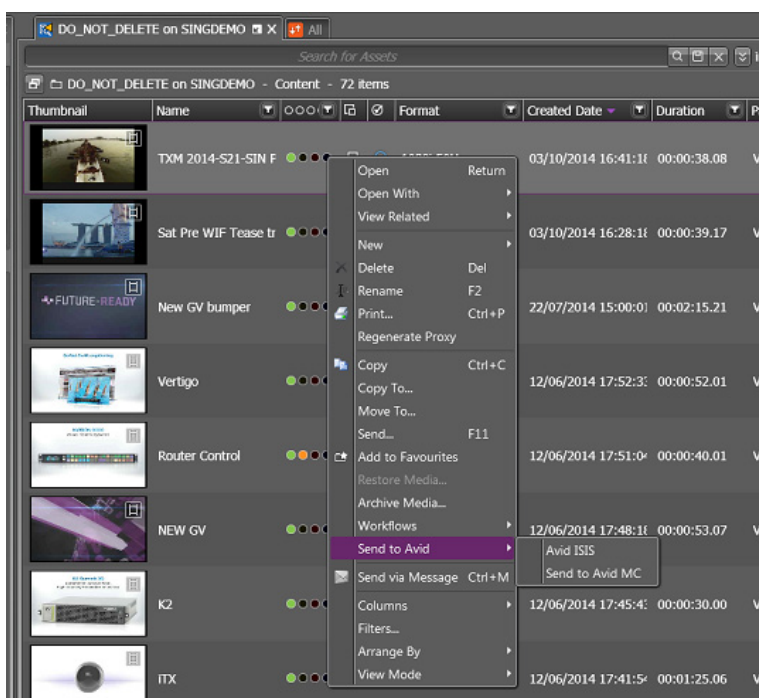


Avid Media Composer

GV STRATUS's integration with Avid editors facilitates two powerful workflows. One workflow is to edit-in-place in the Avid editor, directly on the K2 storage. This is achieved using the AMA K2 plug-in, which allows users to navigate to the K2 bins and link to the relevant media.

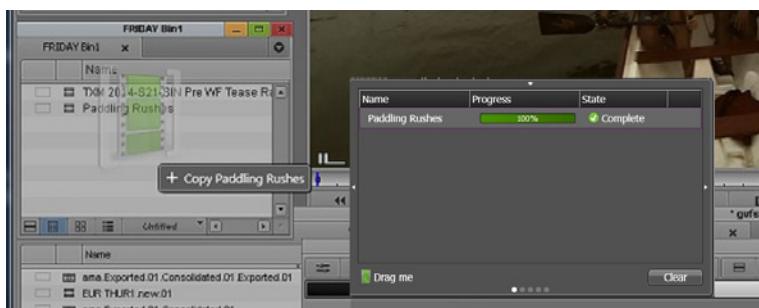
Edit-in-place mode is typically used for fast-turn production, allowing editors to:

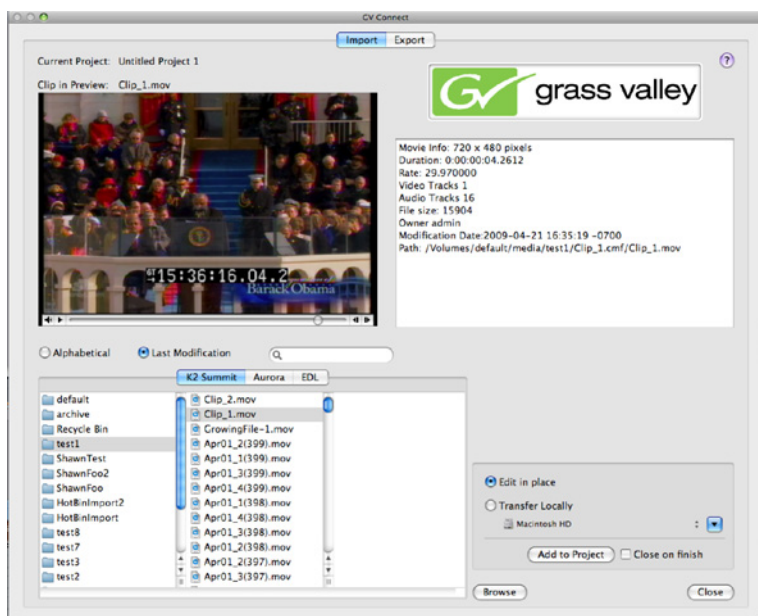
- Access K2 assets without moving, importing or transcoding media
- Edit K2 files on the timeline, just as in an all-Avid environment
- Publish completed work as K2-playable files
- Work with material that is currently being recorded on the K2 system (growing files)
- See GV STRATUS asset metadata, such as markers and keywords



Alternatively, a user may prefer to transfer content from the K2 storage to Avid-managed storage (either standalone or on Avid shared storage). To achieve this, GV STRATUS provides extensive transfer (with transcode) tools which allow the selection of clips and sub-clips from GV STRATUS, to be sent to Avid, edited and then sent back to K2 storage as a completed edit. If transcoding is required between the two systems, this can be automatically done during the transfer too.

For more details and step by step operations, consult our GV STRATUS/Avid Application Note and GV STRATUS Topic Library.





Apple Final Cut Pro 7

Final Cut Pro 7 is well integrated into the GV STRATUS/K2 system via a plug-in that can be opened within the FCP user interface.

Users can:

- Connect directly to the K2 SAN and edit-in-place
- Edit “growing” files (files currently recording)
- Transfer selected files onto FCP storage for editing
- Open sequences from the GV STRATUS Storyboard Editor
- Send finished pieces to K2 for layout

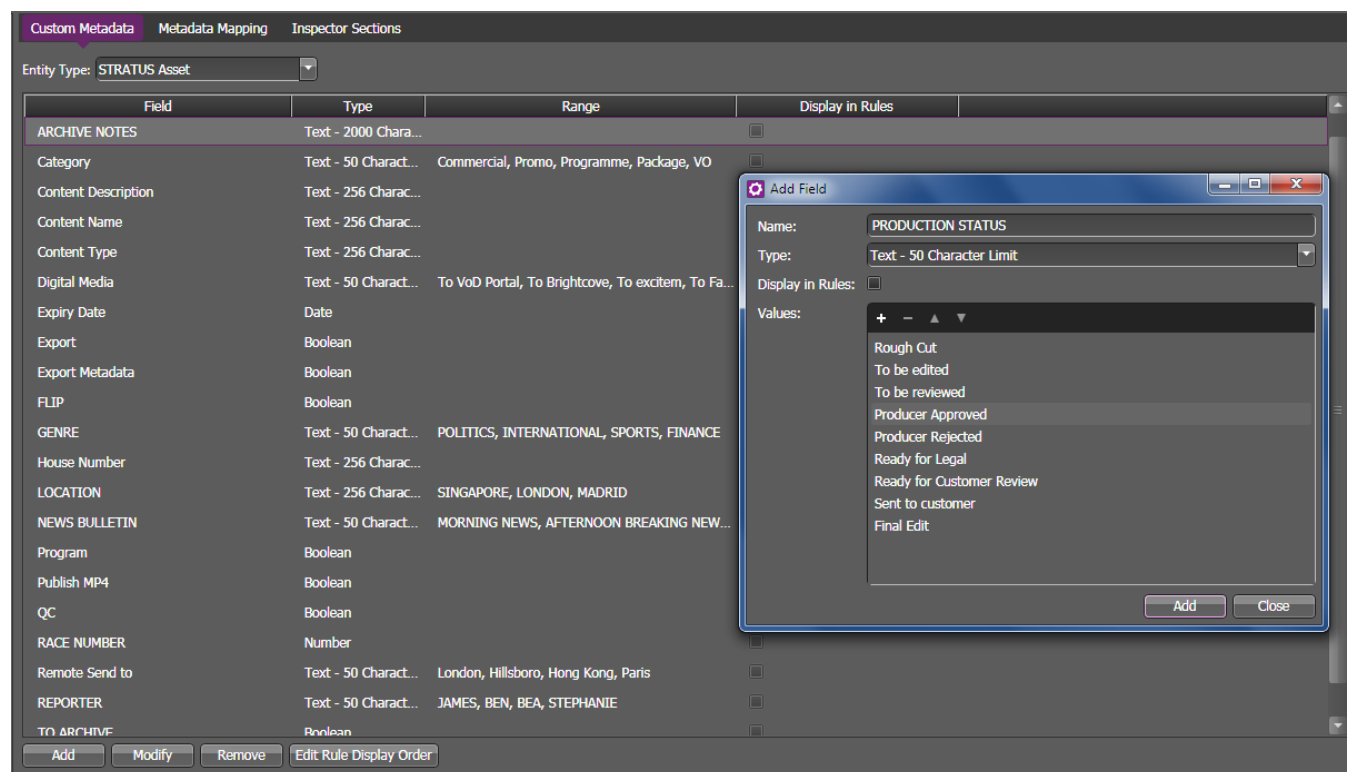
Using the FCP Connect software option, and choosing Tools in the menu bar, the FCP editor selects GV Connect. This is the import/export window for FCP with the K2 system. For Import, the editor navigates to a folder on the K2, selects a file and previews the video in the K2 Connect window. Then they select either [edit-in-place] or [transfer local]. With edit-in-place, no media is copied, transferred or moved — the clip is instantly registered into the FCP bin. On export, the sequence is published as a QuickTime movie to the designated K2 folder, where it is registered on the K2 storage after the transfer is complete. It is then ready for play-to-air.

For more details and step by step operations, consult our GV STRATUS/Final Cut Pro Application Note and GV STRATUS Topic Library.

Review / Approval Workflows

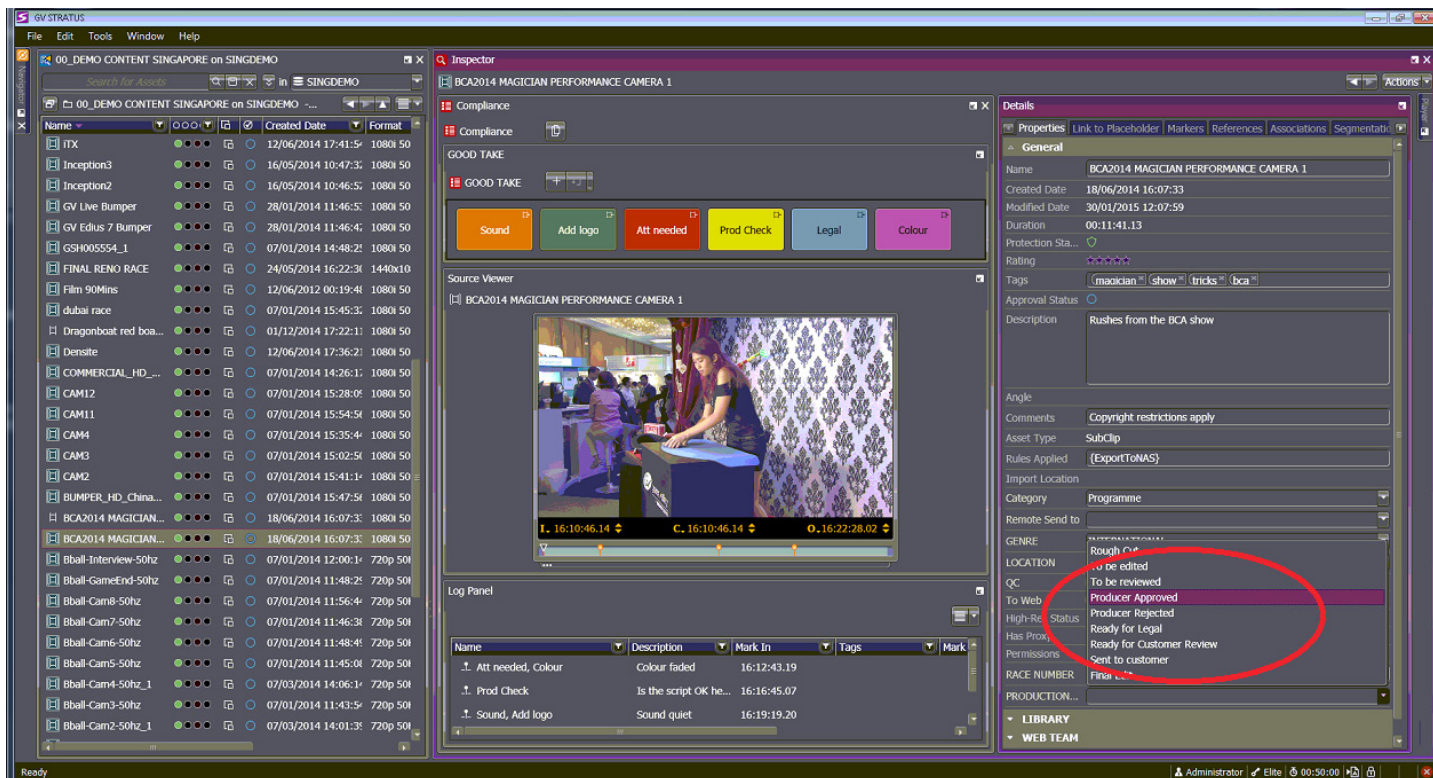
An essential part of any postproduction workflow is the review and approval process, whereby producers and assistants may need to regularly review progress of the final edits for a movie, trailer, episode or documentary. Often technical quality control checks are needed, or legal compliance reviews.

By deploying custom metadata fields, users can tag content for review, and pass/fail as needed. Custom fields can give the producer a choice of drop-down options (such as “ready for voiceover,” “producer checked,” etc.), or check boxes that display the status of a piece of content through every stage of the workflow.



Custom metadata editor on GV STRATUS Control Panel.

The Advanced Logging tool within GV STRATUS gives users the ability to create highly customizable, easy-to-use logging panels that can be saved, reused and shared among users, depending on the needs of each production. These panels allow the user to quickly add markers and notes at significant timecode points, facilitating communication between departments, and enriching the value of the content from the content acquisition stage, through to final archive.



Automated tasks can then be associated to each status flag or marker, for example:

1. If a producer approves the initial cut, it can be move on to the “Audio” bin, so that the audio editor can work on it. An email notification can be sent when the status changes, so that the audio team is aware of a new item waiting for their attention.
2. If a producer rejects the initial cut, an email notification is sent to the video editor, to make the necessary changes.
3. A production assistant can search for all “approved” edited sequences, then type up additional notes in a “compliance” field, or “customer notes” field, and then immediately export it (using workflow rules with transcode) to a shared folder for compliance or to an external customer, in low resolution.

These are just some examples of possible workflows that a post-production facility may want to implement with GV STRATUS. Options are flexible and extensive, and will depend very much on the requirements of each production. Grass Valley’s workflow consultancy and training services can help implement the most suitable workflow tools and rules.

Additional Benefits

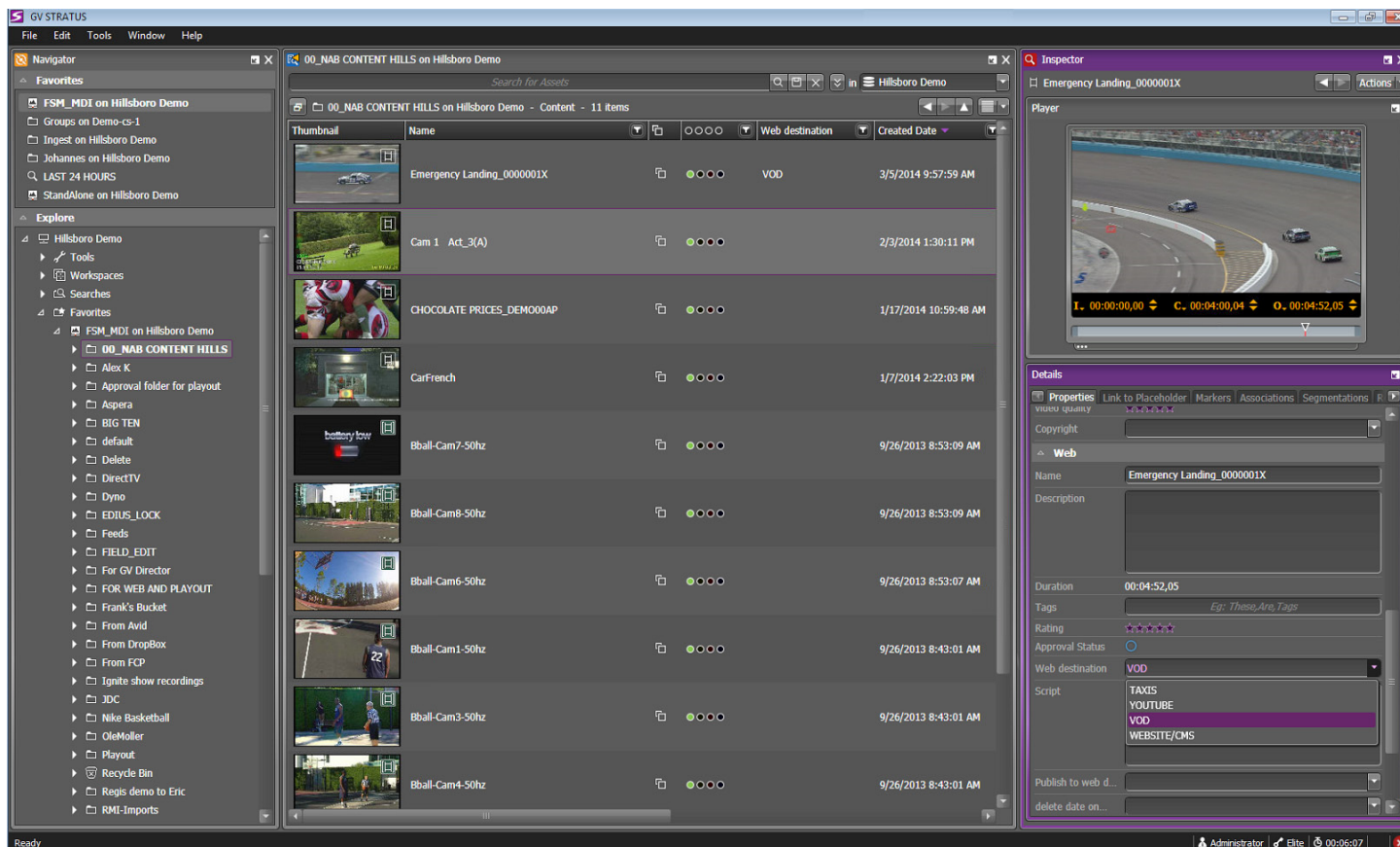
As well as the main preproduction, editing and finishing workflows described above, the addition of GV STRATUS to a postproduction environment can offer other benefits, depending on the extent and complexity of each facilities' needs.

Some examples are:

- Extensive workflow management and automation: with the GV STRATUS Workflow Engine, it is possible to set up workflow rules that will automate routine tasks and free up users from repetitive and time-consuming jobs such as archiving and restoring content, deleting unnecessary material and sending final content to external destinations as needed. By setting up a workflow criteria such as creation date, metadata flags (e.g., "ready for archive"), or according to folder location (e.g., "send to client"), GV STRATUS will automatically trigger jobs in the background and inform users by email notification if needed.
- Postproduction facilities often need to send copies of their final edits to external clients for review, or legal compliance. With GV STRATUS it is easy to export copies to shared external locations, even remotely located and connected via wide area network. Large files in high resolution can be automatically transcoded to a more manageable compression to speed up the export process, if needed. Equally, file delivery acceleration software such as that provided by Aspera (FASP protocol) can be seamlessly integrated into the automated GV STRATUS workflow allowing optimized and secure remote transfers.

- Finished productions can be automatically uploaded to a webpage or video-on-demand location, again, with a simple click of a button and workflow rules that will automate the process of uploading media to a pre-set destination.
- A producer or editor could even be working from their home office and access content via wide area network connection to the production facility. This allows not only searching, streaming and viewing remote assets, but even remote editing with low-resolution proxy copies or transferring high-resolution media to local storage before editing, then conform back to the shared K2 storage at the production facility for final review and packaging.

More details about each of these different workflows and requirements can be found on our GV STRATUS Topic Library, GV STRATUS Blog (<http://k2san.blogspot.com>) and The GV STRATUS YouTube channel (<https://www.youtube.com/user/randregV/videos>).



Summary

With its rich set of tools, workflow automation capabilities and multiple configuration options, GV STRATUS can add unparalleled efficiency and speed to postproduction requirements, and highly enhance collaborative workflows. Thanks to Grass Valley's emphasis on openness and integration, GV STRATUS works well together with the main non-

linear editing tools available in the market, giving producers, editing professionals and content creators the choice and flexibility to implement the most suitable workflows for their needs. Thanks to its easy-to-learn and easy-to-configure user interface, GV STRATUS can truly boost creativity in postproduction environments.

References

- GV STRATUS Topic Library
- GV STRATUS and Adobe Premiere CC Application Note
- GV STRATUS and Avid Application Note
- GV STRATUS and FCP Application Note
- Numerous EDIUS Application Notes



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