

# APPLICATION NOTE

## **Solutions for Disaster Recovery Using Grass Valley Integrated Playout Systems**

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In mission-critical broadcast playout environments, the best practice is to hope for the best, but plan for the worst. To mitigate the possibility of a facility failure, a cost-effective and easily managed system needs to be deployed. A Grass Valley Integrated Playout System is an excellent solution to address such a requirement.

# Introduction

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When almost the entire revenue model for broadcasters is dependent on playing out commercial content, everything should be done to protect the revenue stream. All of the systems in the playout center should be as redundant or robust as possible and processes for managing individual failures should be in place.

While almost every broadcaster has redundancy in their main broadcast systems, very few properly plan for the loss of their broadcast facility.

There are also levels of contingency to consider. Many call the entire topic Disaster Recovery, however if the main facility is unavailable for any length of time (more than 1-2 days), the real consideration should be Business Continuity.

A solution is required that will allow the business to continue functioning, maintaining revenue streams with little or no visible change to the viewer.

## Replicating Current Playout Systems and Automation is Expensive

The first aspect in a disaster recovery project is the replication of the current infrastructure, which at first glance is the most obvious solution. However, this will often lead to an expensive, resource-heavy solution, causing many Disaster Recovery projects to be abandoned on the grounds of capital and resource costs.

The hardware, software licenses, and premises to mirror a traditional playout system are invariably seen as prohibitively expensive. The workflow processes to maintain and test a duplicate traditional facility will take staff away from their regular job of maintaining the live business.

## Emergency Tapes Provide a Very Limited Service

A much lower-cost solution is the use of a hosted solution provided with tapes or files which are played out in the event of a catastrophe. Although this can be effective for short-term outages, it does not maintain the current revenue stream—and for a longer outage the repetition of content and the change in the presentation of the channel will have a detrimental effect on the brand.

## How Can a Disaster Recovery Solution Be Delivered Cost Effectively?

Although a cheap solution will often be the key driver for the business, a cost-effective solution will deliver a far better result:

- Costs as little as possible to build
- Maintains the revenue stream
- Is easy to implement and maintain, with minimal change from the current workflow
- Maintains branding and channel style

Finding the sweet spot between these conflicting requirements is the challenge. A cheaper solution will not provide the same customer experience as a fully mirrored solution and may not preserve the revenue stream.

# Is There a Middle Ground?

The most cost-effective solution to provide proper disaster recovery and business continuity is to build an integrated playout solution (IPS) that can operate seamlessly between the main and remote sites.

## Solution Types Comparison:

	Traditional	IPS	Pre-determined "Emergency" Tapes/Files
Cost	Expensive, same cost as main playout system  Moving large essence files can increase costs of connectivity  >1:1	Less than traditional playout, can be licensed at a low level and upgraded when required  Solution can play transcoded media reducing cost of connectivity/storage  Estimated ¼ of traditional	Low cost  1:100
Revenue Generation	Existing revenue streams maintained	Existing revenue streams maintained	None, or very labor intensive to maintain
Workflow/Ease of Use	Mirror of current workflow, large files/tape-based content workflows difficult to replicate and expensive to manage	Well designed, this will be fully automated and transparently fail over in the event of a disaster. Can be managed by a minimal team	Will be separate from standard workflow and therefore will require manual intervention
Brand Consistency	No change, providing branding of main system is kept synchronized with backup system	No change, very flexible dynamic generation of graphics needs minimal maintenance and configuration.	Very limited, static branding

An integrated playout solution provides the best overall fit of benefits versus cost to the business.

# Introducing Grass Valley Integrated Playout Systems

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The Grass Valley™ K2 Edge™ systems are purpose-built for multi-channel, integrated, managed playout. Whether two channels or hundreds, K2 Edge brings all of the components of integrated playout together in a unified system: media playout, channel graphics, asset management, and playout management.

Multi-channel, integrated, managed playout is the next evolution in the program playout market segment. While traditional playout solutions take advantage of IT-based technologies to control separate components, it is only when all of the applications—asset management, channel design, and media playout—are designed to work together from the ground up, can one realize further workflow efficiencies.

While there may be benefits for some facilities investing in a Disaster Recovery solution containing traditional playout automation, it is too expensive and unnecessarily complex for many commercial broadcasters.

A fully integrated system offers tremendous benefits:

- Lower initial capital cost
- Reduced total cost of ownership through streamlining the playout workflow
- Each tool (server, graphics, master control, and the playout management system itself) is seamlessly integrated and purpose-built to work together
- A simpler transmission chain (with fewer devices and integrations) means less to go wrong, adding reliability to critical backup systems

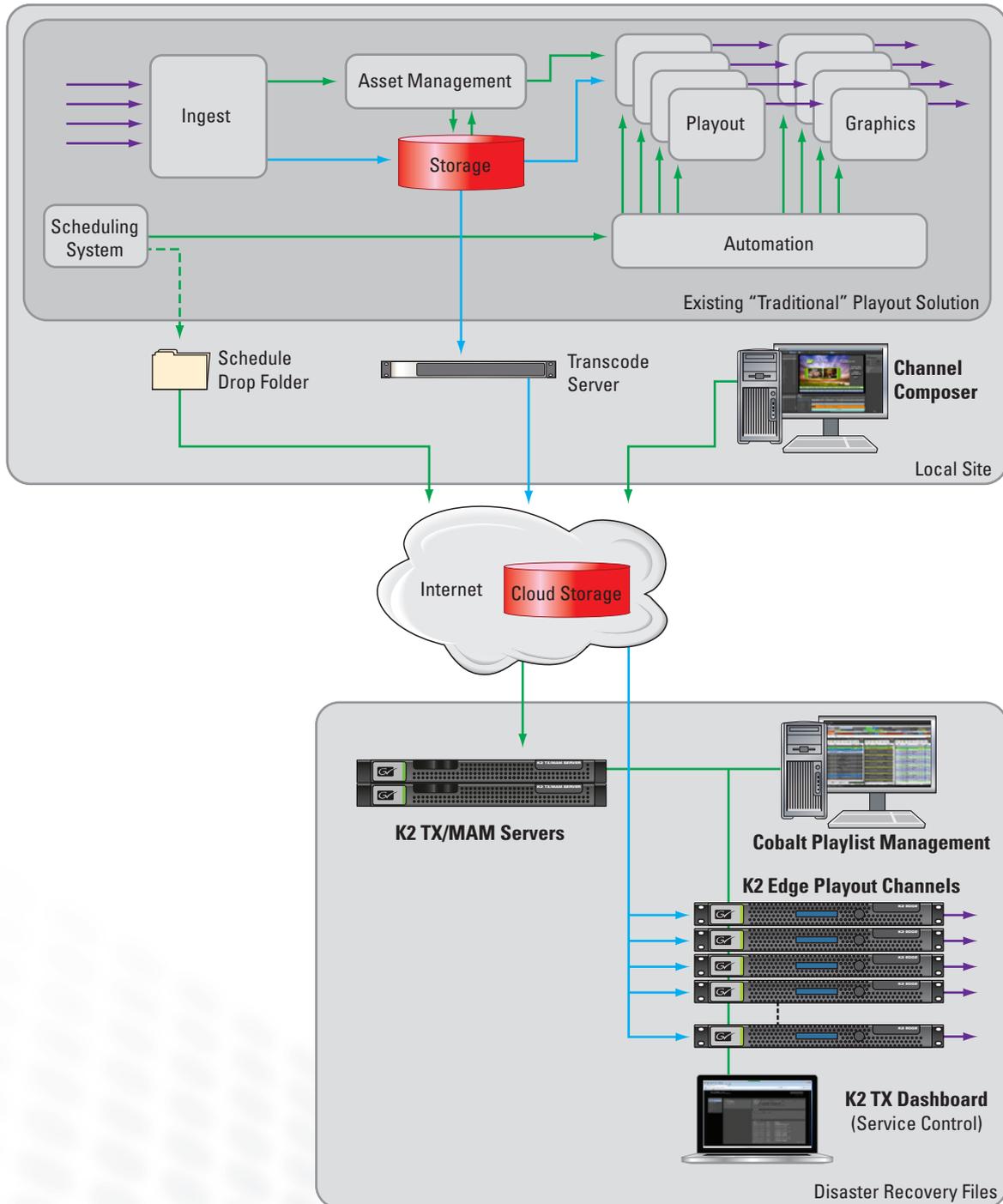
A Disaster Recovery solution needs to be integrated as simply as possible into playout workflows and automated so that, when required, schedules and content are ready to go. A K2 Edge-based Disaster Recovery solution can be customized to suit various requirements.

The K2 Edge system can be monitored from a current master control room, from a remote backup facility, or any site with access to a WAN. An integrated playout solution is easier for operators to control as all of the critical transmission chain components exist within one solution. Training of operational and maintenance staff is also simplified compared to a traditional, complex, integrated playout system.

The K2 Edge system is fully integrated and built from the ground up. It is not a “lite” version cut out of a high-end playout system. With K2 Edge, you’ll see immediate benefits, both on-air and on the bottom line.

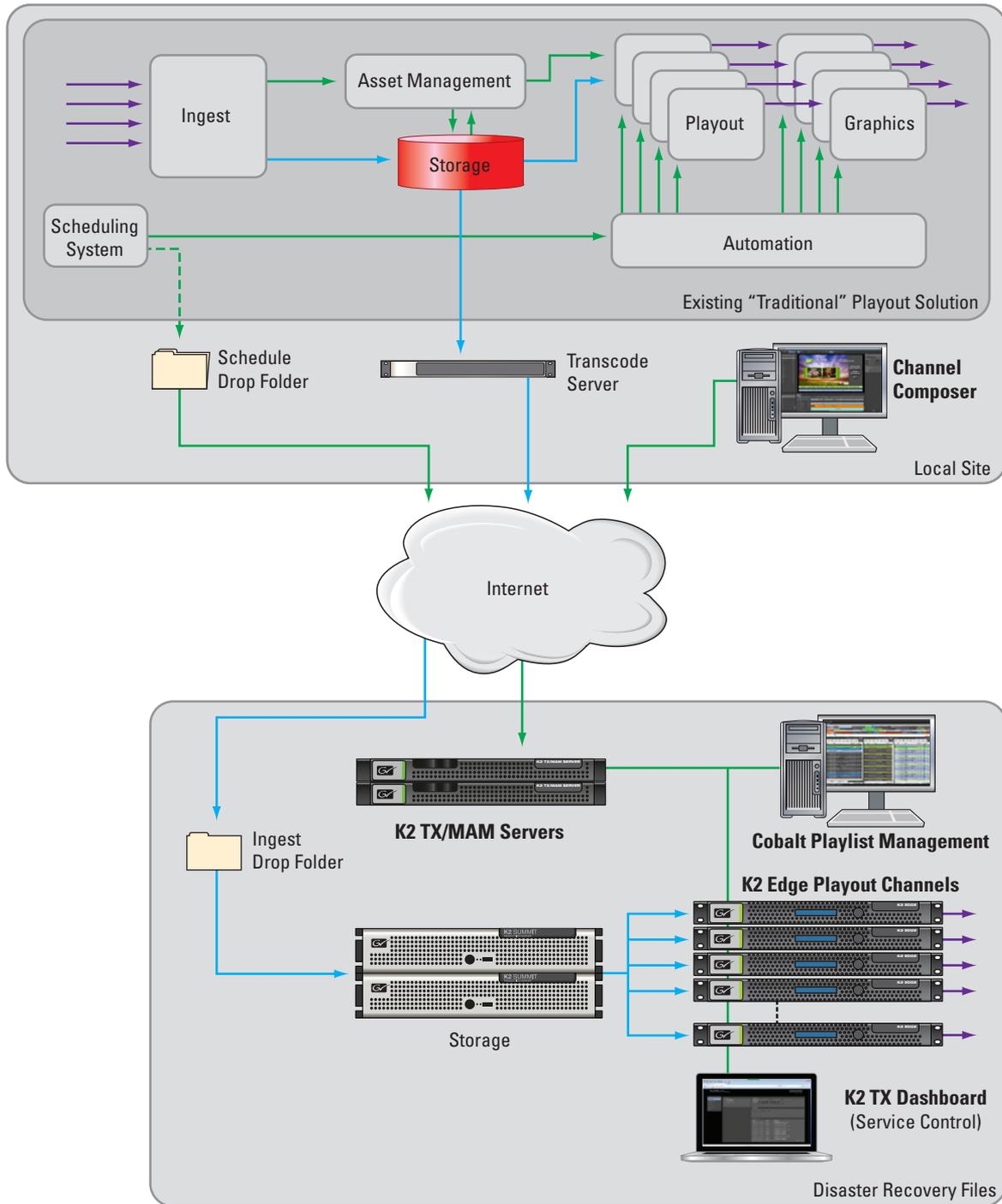
# Disaster Recovery Solution Examples

## 1) Simple Remote Disaster Recovery Site Accessing Cloud Storage



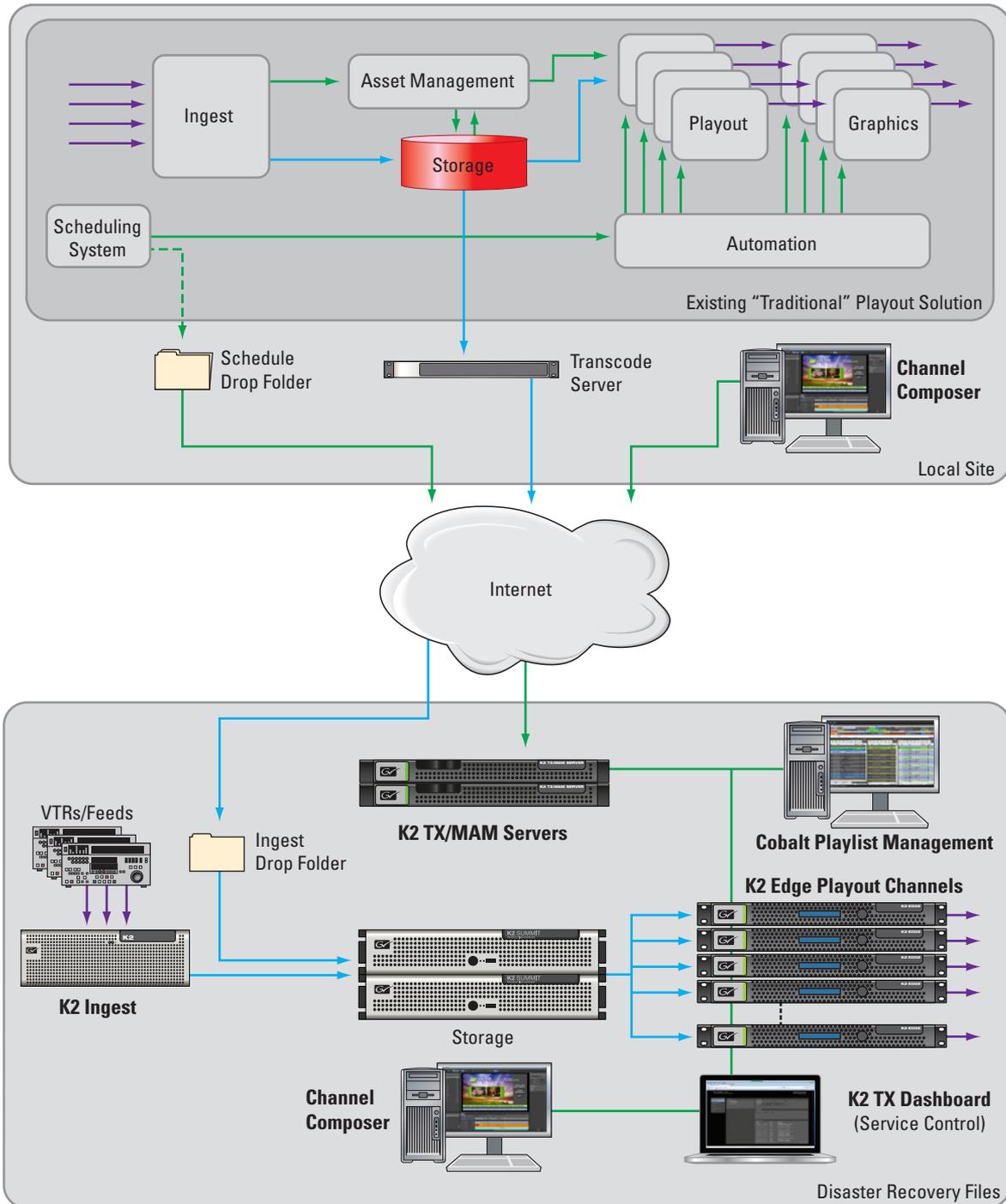
# Disaster Recovery Solution Examples (cont.)

## 2) Remote Disaster Recovery Site with Storage



# Disaster Recovery Solution Examples (cont.)

## 3) Full Business Continuity with Off-site Ingest Capability



# K2 Edge Integrated Playout Systems Components

As part of the K2 media server brand, K2 Edge is focused on integrated playout where all of the needed functions—media playout, channel graphics, asset management, and playout management—are included in one tightly integrated system.

Integrated playout is not just about adding a PC to an existing automation system for clip playout. It requires a more integrated approach, especially in the area of on-air channel design with the management of all on-screen elements.

The K2 Edge Integrated Playout System is comprised of:

## K2 Edge Playout Servers

K2 Edge playout servers use a robust and proven Linux-based, high-availability architecture for mission-critical 24/7 playout applications. The K2 Edge server contains Grass Valley-designed video interface hardware.

## K2 TX/MAM™ Servers

Each K2 Edge system includes the Grass Valley K2 TX/MAM asset management system with a central database. The K2 TX/MAM standard IT server uses a web-based GUI to control all assets including video clips, audio clips, captioning, metadata, and graphic elements on discrete playout nodes.

Standard functionality of the K2 TX/MAM asset management system includes:

- File ingest
- Trim, soft part segments
- Low-resolution proxy quality control
- Secondary essence management
- Closed-caption/subtitles
- Customizable metadata
- User rights management
- Transmission dashboard
- FTP interface to optional storage solutions

## Cobalt™ Playlist Management Software

Each K2 Edge system includes Grass Valley Cobalt playlist management software. The Cobalt playout application manages all on-air events, and for increased reliability, runs completely independent from the database.

- Schedules are imported manually or automatically
- Schedule importer links event with formats by rules
- Formats can be added, deleted, replaced manually
- All secondary events created in Channel Composer™ (see below) are visible
- References to database fields and import fields are populated
- Timing of all secondary events are visible
- References and timing can be manually changed
- Multiple channels can be operated at once
- Main and backup are automatically run in sync

## Channel Composer

As an innovative approach to creating the on-air look of a channel, Grass Valley Channel Composer is available as a software tool that manages the import (from traditional graphics design tools such as Photoshop, Premiere, and After Effects) of 2D and 3D graphics, creating layouts, and linking graphics templates to data sources for real time on-air presentation.

A powerful, fully integrated channel graphics composition and management tool, Channel Composer runs on Windows and Mac platforms and is integrated with the K2 TX/MAM server where templated graphics and a data stream can be defined and then referenced together as “live” integrated elements in the on-air playlist.

Channel Composer is also used to export the complete channel design as a single package (channel-pack) to the central database and becomes active from a certain date for a specific channel.

Channel Composer is not meant to be a complete graphics design tool for the channel as it is highly integrated with the real-time aspects of the K2 Edge system, rather than a free form design environment that creative staff would be used to.

# Building a Solution with Grass Valley

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K2 Edge is available in three levels of capability:

- K2 Edge Express—for entry-level channels with minimal graphics needs
- K2 Edge Pro—for main-line channels with more sophisticated graphics such as picture-in-picture
- K2 Edge Elite—offers switching for up to four HD sources and multichannel 2D and 3D graphics, complete with DVE moves including credit squeeze

K2 Edge grows with any operation. It can easily be migrated, via a software license, to any of the levels.

Grass Valley also offers a range of Professional Services to help with understanding and detailing requirements, analyzing and improving workflows, designing and managing the installation of systems, and to train staff effectively.

Please contact a local Grass Valley office to discuss the design and configuration of an Integrated Playout System based on K2 Edge.

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## GLOBAL SERVICES

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Grass Valley Global Services specializes in the defining of, deployment of, and support of today's dynamic file-based workflows, based on Grass Valley and third-party solutions. With Grass Valley Global Services, you can achieve your operational goals in the most efficient and cost-effective way possible with a partner you can trust.

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