

Modernize your routing without replacing everything

By Scott Matics, Senior Product Manager
Miranda Technologies Inc.



**“migration has now become
easier with the availability of
controllers with bi-directional
control across new
and legacy routers”**

Discover how you can modernize your existing SD routing infrastructure without replacing everything. By using Miranda’s 3 Step Transition Plan, you can migrate with minimal disruption and cost to a modern routing system for 3Gbps/HD operations, with advanced 5.1 audio processing and fiber connectivity.



A **BELDEN** BRAND

Transitioning to new router technology

Adding new technology into a broadcast plant often requires a transition period, with a blend of legacy and new systems working together, as older equipment is phased out and replaced with new devices. This is especially common with routing systems, which are often kept in operation for 10 years or more.

Often, the key issue behind this need for router longevity, and interoperability across different routing systems, is the CAPEX budget. Even within large organizations, it can be difficult to replace everything at once. Instead, large purchases of infrastructure equipment may need to be made over one, two or sometimes three year periods. For instance, although the immediate requirement may be for more inputs, the budget may only allow for a new router without the control system or panels. Therefore, it's quite common to spread the purchase of the different router elements across more than one budget cycle.

Another approach to tight budgets is to slowly scale up a new router infrastructure. A project may start by purchasing a large frame router which is filled with 25% of its capacity. The next year, the system might be expanded with an additional 25% capacity by adding more cards, and a new control system may be integrated with a legacy controller. Again, this requires a carefully phased transition to a new routing and control environment.

Avoiding disruption to operations

A further key reason for making an incremental migration to new equipment is the need to avoid disruption to mission critical operations. With routing being so fundamental to broadcasters, it can often be advantageous to phase in a new router system using the existing control system initially. This approach brings in extra capacity while minimizing the need for re-training. By making less dramatic operational changes, there's also less chance of on-air errors during an upgrade.

So, for many broadcasters facing the need to upgrade their facilities to 3Gbps/HD and multi-channel audio, there's a clear challenge in terms of how they should best move to a new signal management system, while keeping their existing routing investment and control system.

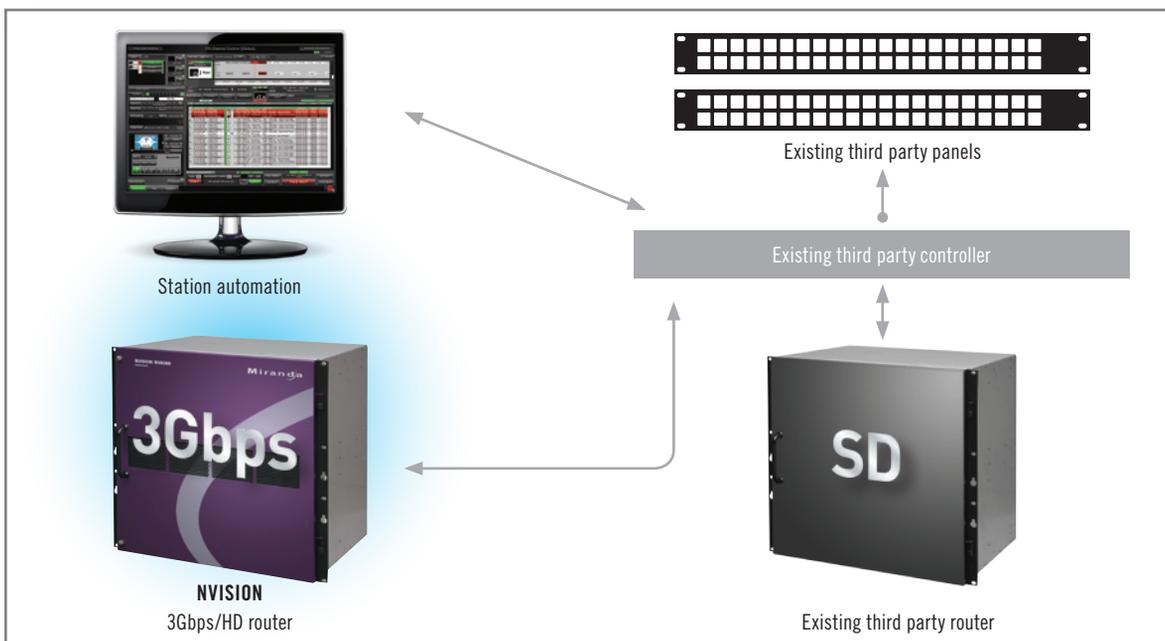
Fortunately, this migration has now become much easier with the availability of controllers with bi-directional operation across new and legacy routers, which allows a seamless and secure transition to a modern routing environment.

3 step transition plan

Let's consider how this migration to new routing technology can be optimized with Miranda's 3 step plan.

Step 1 - Expand matrix, or add 3Gbps/HD/fiber routing, by adding an NVISION router under existing third party controller

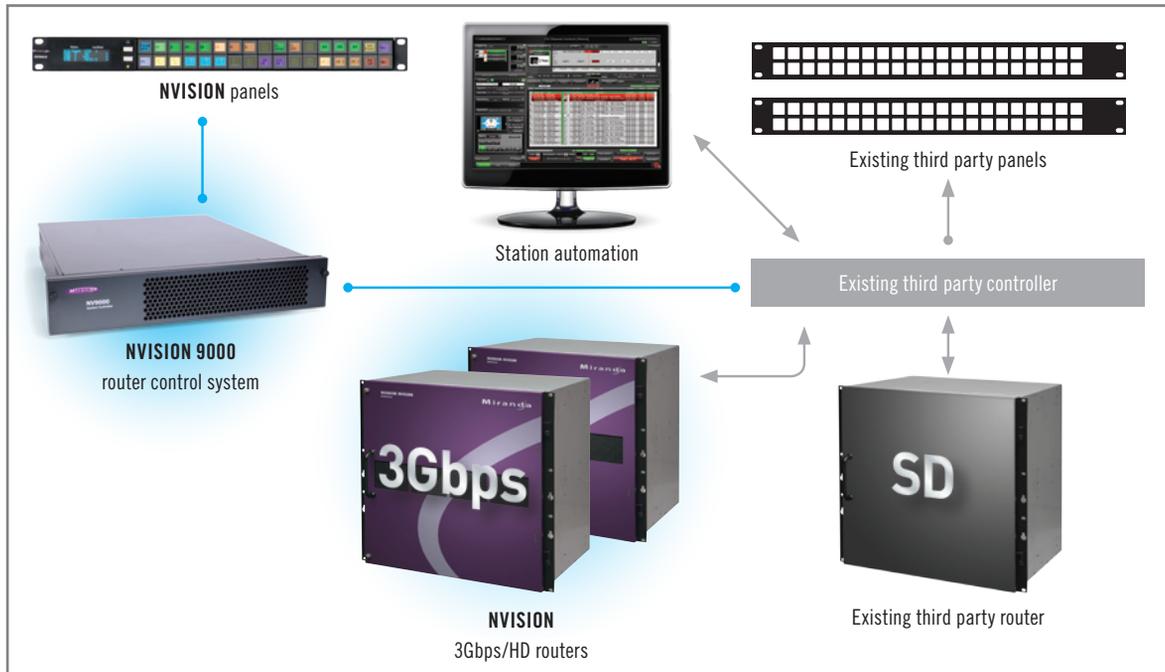
The first phase of migration to 3Gbps/HD routing simply involves adding an NVISION 8500 Hybrid family router to the existing legacy (third party) router infrastructure. Full control of the new 3Gbps/HD router can be performed from the legacy control system.



The NVISION router fits transparently, and offers redundant crosspoints while preserving the investment in the existing control system. This process requires no operational changes or new operator training.

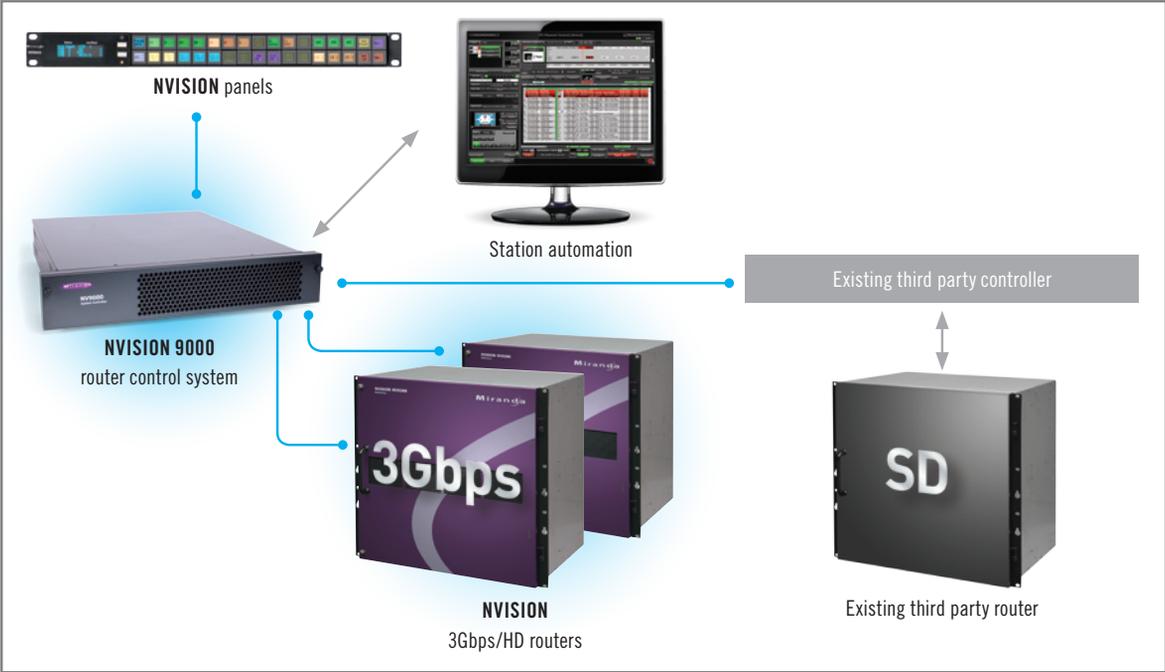
Step 2 - Expand routing capacity and add NVISION controller and control panels

As a facility extends its new 3Gbps/HD routing system, it can add a more advanced NVISION controller and control panels, which can operate under the third party controller. By adding the new control system, the facility can integrate multi-hop tie line control and use virtual sources and destinations. This configuration maintains dual control systems, and still preserves the investment in control panels. Both control systems are linked bi-directionally so that all panels can see all the routers in the system.



Step 3 – Extend NVISION control panel system and place legacy routers under NVISION controller

For a higher level of control flexibility, the facility can subsequently switch over to full NVISION control, with the NVISION 9000 controller and panel system driving the legacy routing infrastructure via the legacy controller. This allows the use of advanced panels across the entire system, and the use of Triple or Quadruple Hop tie lines, along with virtual sources and destinations.

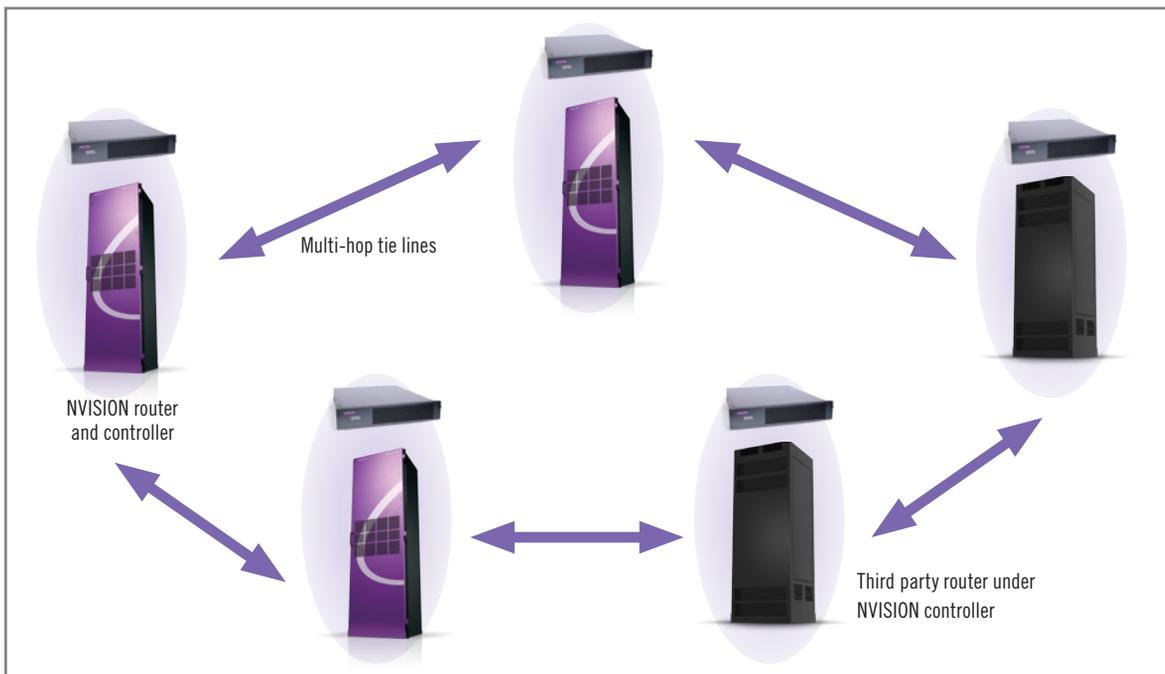


Tie lines

One of the major advantages of this approach to router upgrades is the sophisticated tie line control for connectivity across multiple routers. For example, tie lines can provide Source 1 on Router A to Output 1 on Router B. Tie lines are important when older routing systems are mixed with newer routing systems because this is how the bulk of the connectivity is accomplished.

With advanced tie line control, the controller calculates the most efficient path from router to router, using interconnect cables, and makes the route. To the user, this just requires a destination to be selected and then a source, and the connection happens without the user worrying about the complexity in the background.

In many cases, upgrade systems can involve highly complex connections, such as Source 1 on legacy Router D through newer Router C, through newer Router B to destination 1 on the new Router A. This extreme complexity can be handled by the NVISION controller in a highly elegant manner.



The following types of router can be driven by a NVISION 9000 router control system:

- > Jupiter
- > Euphonix
- > SMS-MCPU Bridge
- > Sony
- > Pesa
- > ISIS
- > Encore
- > Datatek
- > Probel
- > Nexus/Stage Tec
- > Utah
- > Sierra Video

3G bps

Overview of NVISION 8500 Hybrid routers

Miranda's NVISION 8500 Hybrid routers combine exceptional resilience with cost, space and power efficiency, due to the integrated audio processing. Ideal for production and playout applications, they also offer simplified cable management, using high density cabling, direct fiber connectivity, and audio concentrators. The NVISION 8500 Hybrid router range includes five frame sizes, with matrices from 144 x 144 to 1152 x 1152.

The unique, integrated audio processing incorporates de-embedding, shuffling, re-embedding and break-away, and this offers multiple major benefits:

- › Simplified management of embedded audio sources
- › Powerful Dolby E and MADI high-count source management
- › Reduced costs by eliminating peripheral embedding and de-embedding devices
- › Superior audio/video synchronization

www.miranda.com/nvision

About Miranda

Miranda Technologies Inc. (TSX: MT) develops, manufactures and markets high performance hardware and software for the television broadcast industry. Its solutions are purchased by content creators, broadcasters, specialty channels and television service providers to enable and enhance the transition to a complex multi-channel digital and HD broadcast environment. This equipment allows customers to generate additional revenue while reducing costs through more efficient distribution and management of content as well as the automation of previously manual processes. Miranda employs approximately 550 people at its Montreal headquarters and in its facilities located in Wallingford (UK), Grass Valley (California, USA), Paris (France), Tokyo (Japan), Zaltbommel (Netherlands), Dubai (United Arab Emirates), Beijing (China) and Hong Kong. Miranda is listed on the Toronto Stock Exchange. For more information, please visit www.miranda.com.