

# Thinking inside the box

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**B**roadcast television, while around for many years, is sophisticated and growing in complexity. As such, broadcasters face many challenges and are inundated with options that help them manage all their challenges. One commonly discussed solution to a broadcaster's need to reduce complexity and quickly add new channels and services is the increasingly popular "channel in a box" solution.

While many of the solutions on the market provide similar functionality, one area where most of the available solutions trail the customer needs is centralized control and monitoring. Miranda, a Belden Brand, a global provider of integrated solutions for production, playout and delivery systems for television broadcasters and multi-system operators is well known, trusted and widely used around the world. Thinking outside the box to address key challenges is what differentiates Miranda and our iTX integrated playout platform. The difference in this particular case is that our out-of-the-box thinking is all about putting what really matters to broadcasters back into the box.

This paper will outline many of the important functions commonly needed in an integrated playout solution – and explain how an integrated monitoring solution can be effectively incorporated to ensure remotely installed systems are operating at peak efficiency.



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A **BELDEN** BRAND

## What's in the box?

Many vendors are jumping on the channel-in-a-box bandwagon, even though some could be described as being a bit late to the party. Many of these solutions are actually based on very traditional legacy systems with a single box being added to handle server and graphics functions while still relying on central systems using outdated protocols. This approach makes it difficult to make the systems fault tolerant and ultimately results in lots of additional boxes being added to manage multiple devices and lists... rendering such systems anything but a single-component solution.

Some channel-in-a-box solutions are from vendors who do not have a track record in broadcast and are often based around OEM video cards that are used to decode and scale video. In our view, video decoding and scaling are critical capabilities that are too important to entrust to an outsourced third party.

As a result of these practices, what we tend to see from the majority of channel-in-a-box vendors is that their channel-in-a-box solutions never seem to do quite enough to meet the entire range of a channel's requirements. This forces broadcasters to start bolting cards and other devices around the original box, which rapidly unravels the rationale for having a true channel-in-a-box solution in the first place. The requirement for more and more bolt-ons essentially forces the channel back out of the box again, which means that broadcasters end up using multiple, sometimes incompatible systems. Many end up with no choice but to maintain traditional "top down" automation mode operations, which most broadcasters, managers and business owners know is just not sustainable within the cost models most broadcast organizations operate within today.

And it's a real problem. When the channel-in-a-box "solution" that's supposed to make sense of everything doesn't quite do everything it should, it often ends up costing more than the system it was meant to replace.

## Master control options

A major drawback of many integrated systems is that traditional master control switchers are obviated – but they're still desired for many broadcast functions, particularly during live broadcasts. Miranda has introduced iTX Master Control, which leverages decades of master control experience with our Imagestore master control and branding products, and combines them with the power of the integrated solution that we have in our iTX playout platform.

The idea is to run many, many integrated channels with iTX. Then, for national or premium channels that carry lots of live content, a master control panel is integrated, with multiple size panels available. Imagestore-750 or Imagestore Modular master control and branding processors are also utilized, both of which are trusted devices that sort out a lot of problems when you're taking content, particularly live content like sports, to air. For example, if an outside broadcast is supposed to be providing Dolby audio and it turns out they're not, the combined iTX/Imagestore technology can create a stereo-to-Dolby up-mix to provide a Dolby source until you can determine why the outside broadcast is not giving you what they promised.

The combination of integrated playout with a physical master control panel provides the choice of running manually or in automated mode while maintaining a modern, scalable integrated playout system in either mode - an option that many operators, rightly, still want.

This important ability of an integrated system to handle live content, while also being able to scale, is vital for anyone wishing to launch new channels in a growing market. But launching those channels, with those capabilities, has to come at a price that makes sense. Combining complementary products to form tightly integrated solutions makes economic and operational sense and is one of the greatest benefits available to adopters of an integrated playout platform.

## Effectively promoting your brand

In a competitive market, your channels have to stand out and this is where on-air branding becomes a critical component. Miranda provides a wide range of branding solutions with Vertigo XG graphics, which has a rich heritage in broadcast graphics with more than 1300 channels on-air worldwide today. This very same Vertigo XG graphics engine now resides within the iTX playout system. It's the same top-end graphics solution that's running on-air graphics every day for many of the world's most demanding broadcasters, and it's all tightly integrated into the same chassis as the playout system.

Miranda takes the professional approach to graphics in an integrated platform a step further, offering the ability to render graphics just in advance of playout. Vertigo XG graphics are great for real-time requirements like sports, news, and stock market data where the data needs to be changed immediately. However the vast majority of broadcast graphics are not changed within 30 minutes of their on-air time, so why pay for a top end graphics system to sit idle for 80 percent of the time in each and every broadcast channel chain?

Through a partnership with Adobe, Miranda's integrated After Effects™ with iTX to create the iTX Render Service, which enables a broadcaster to pre-render graphics just ahead of playout and remove any need for customized template tools (or the training required to create them) or any further manipulation. Broadcasters don't have to compromise on the look and feel in any way.

## Keeping control with integrated monitoring

How does a broadcaster know that the rendered graphics, and the content they support, are being seen and experienced at their best possible quality all across the country, or even the entire world?

The answer is monitoring. Building a scalable and tightly integrated system is really only a key first step - how do you monitor that it's actually working and delivering without having to hire a small army of people to manage it?

Miranda's iControl monitoring platform uses a "playlist aware" approach to proactively monitor the system for proper health and functionality. Operators no longer have to sit back and wait for errors to happen. With iControl they are proactively alerted that there might be a fault, or directed to a point in the signal chain they should watch because iControl is monitoring from one end of the chain to the other no matter how vast that chain may be.

What is meant, exactly, by playlist aware monitoring? For example, a broadcaster may add subtitling to international programming. Sometimes, it's only added during prime time hours. The problem is that during hours when subtitling is not being added, alarms will occur that alert the broadcaster that "there are no subtitles." Of course there aren't. There aren't supposed to be any!

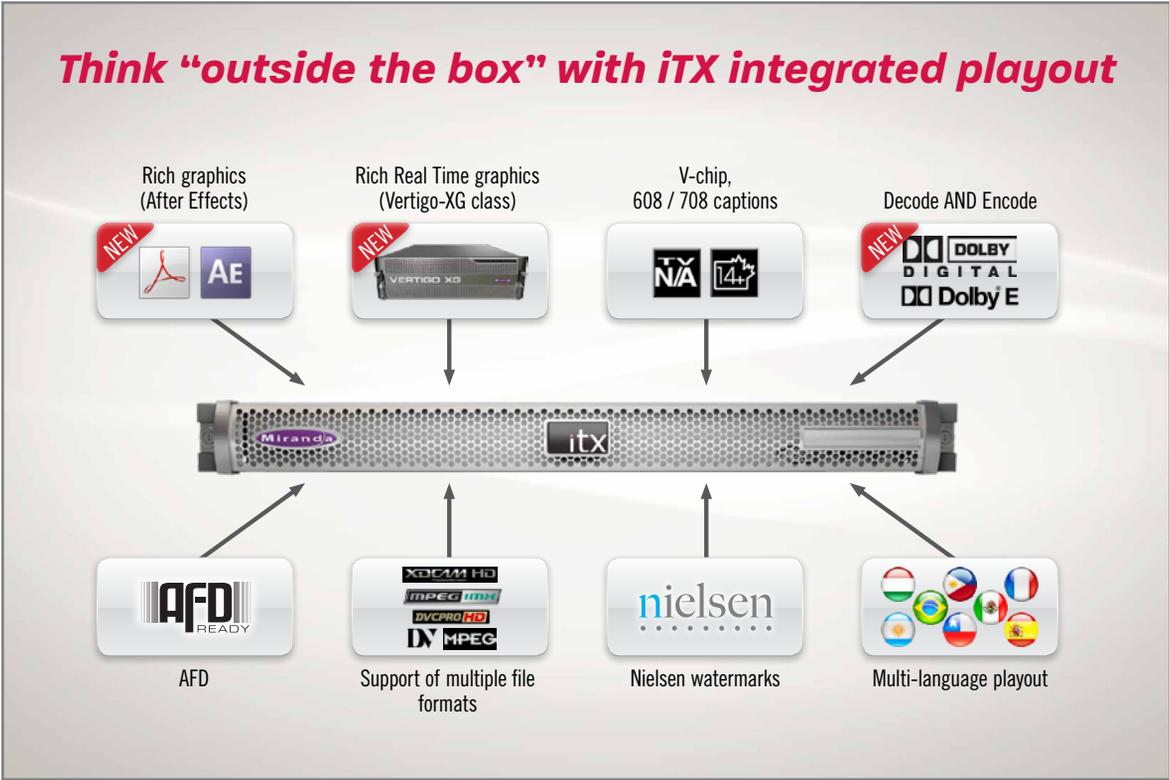
Using playlist aware monitoring, a monitoring system that knows not only what's occurring, but also what's supposed to be occurring, iControl automatically suppress these types of alarms so they are not raised when the playlist is not calling for that function. This applies to all sorts of things, from subtitles to advertising triggers – even to graphics. The elimination of false positive alarms is a major cost and time saver, allowing broadcasters to scale their operation without the associated growing pains.



Of course, in order to monitor a system, you need to see what's going on. Miranda's Kaleido multiviewers tie it all together by showing operators what they should be looking at throughout their system rather than sitting in front of a sea of images hoping that they'll spot something that's wrong.

Taken all together, many problems are solved, enabling customers – particularly in complex areas where they're trying to manage multiple time zones and multiple variants – to actually run high-quality channels efficiently, at a cost that allows them to make a profit.

After all, that's why broadcasters are in business. It's also why Miranda is unique in the market today. Miranda is always thinking "outside the box" to find the best ways to use external boxes as part of a single, tightly-integrated system, to ensure that broadcasters don't have to run the risks of figuring it out for themselves.



## About Miranda

Miranda Technologies 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 700 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. In July 2012, Miranda Technologies was acquired by St. Louis-based Belden Inc., a worldwide leader in cable, connectivity and networking solutions. For more information, please visit [www.miranda.com](http://www.miranda.com).