



## Application Note

# Channel in a Box

Integrated playout solutions harnessing  
IT-based automation technology

March 2011

In today's cost driven environment, broadcasters are increasingly looking for affordable playout solutions that will easily integrate within their existing workflows, they need to simplify playout, they need to reduce the cost and complexity of their playout systems and they need to maintain performance and reliability in these critical operations.

Building on over 40 years experience in real-time broadcast technology and multi-channel delivery, Snell has developed a new concept in highly cost-effective master control and multi-channel playout solutions.

Snell's Channel in a Box solutions are turnkey broadcast playout systems that allow channels to be brought to air more quickly and at lower cost than ever before. Built on the industry leading Morpheus automation software and the Integrated Content Engine, ICE, these playout solutions provide Snell trademark quality and service to a range of applications including:

- Station Master Control
- Remote Channel Launch
- New distribution platform introductions, such as IPTV

The essence of Morpheus builds on the principles of utmost versatility and flexibility combined with the ability to support a myriad of different workflows, production environments and content distribution platforms.

Furthermore, Morpheus has the ability to future-proof your business – over time it can grow and accommodate new distribution platforms in response to changing market demand. Already, many of the world's leading broadcasters, facilities and playout centers have placed Morpheus at the heart of their operations.

As we progress further into the digital multi-screen world, these same broadcasters are relying on Morpheus' ability to anchor their production operations and support a growing diversity of distribution channels that feed their core media consuming audience.

Snell Channel in a Box packages, utilizing the company's Integrated Content Engine (ICE), are tailor-made for smaller scale operations where cost is an issue. They combine the best of IT technology with Snell's broadcast know-how to deliver a unique software-based multi-function system to manage the delivery of a wide range of programming and channel types.

From news, to sports and multi-language playout, ICE offers a dynamic solution that can be adapted to the diversity of workflows differing in size and scope. Whether standard or high definition, ICE provides superb value for money without ever compromising the quality, reliability and resilience of the broadcast output.

### **A new approach to playout automation: Why integrate all the broadcast functions in a single unit?**

Each ultra compact 3U ICE unit supports four SD video channels, two HD (720p and 1080i) channels, or a combination of HD and SD channel operations. Punching well above its weight, an ICE unit integrates a video server, graphics, switchers, channel branding, captioning and subtitling in a single rack.

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Simple to set up and configure, ICE can be implemented as a complete self-contained channel within your broadcast operation. It provides an affordable stepping in point for start-ups, and importantly it possesses the flexibility and scalability to grow and develop in line with your business plan.

Guaranteed frame accurate operation coupled with constant signal timing ensures ICE can seamlessly integrate into a live broadcast video system whilst also managing file-based workflows. Its resilient architecture, including RAID 10 media storage, meets the demanding requirements of mission critical broadcast applications, and this can be enhanced by Morpheus' extensive range of redundancy options for playout.

By integrating all these functions in one compact unit, Snell has succeeded in reducing operational complexity for the user. This single unit approach is easier to install, enabling ultra-fast deployment.

Its 'drop in' capability means that whenever you need that extra channel, with ICE that is exactly what you get – quickly, easily and at a surprisingly reasonable cost in monetary, manpower and support requirement terms.

Throughout ICE's operational life, its users will enjoy further benefits from this straightforward approach, not least that a reduced component count means that there are fewer points of system failure.

Aligned with this simplicity in design is a significantly reduced training requirement. Users need only learn ICE and not all of the discrete systems that you would find in larger, more costly playout automation systems.

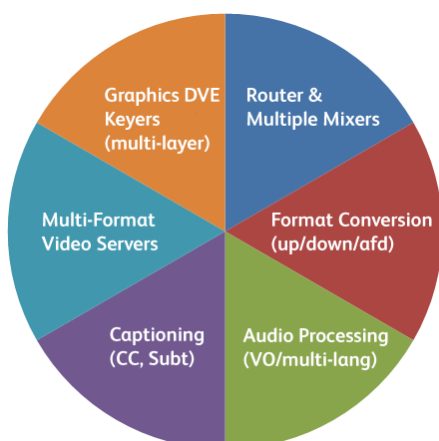
ICE's ultra compact form factor belies advanced system functionality:

### Multi-Format Video Servers

ICE is format agnostic and can process SD and HD source material. It manages all of the processes required to prepare the pictures, sound and ancillary data for frame accurate, secure, highest quality SD/HD playout.

### Router and Multiple Mixers

Each ICE unit may be configured with up to two HD (4 SD) video mixers with up to four HD (16 SD) full layers per frame. Typically two layers are used for a mixer to support preset and program sources when mixing in real-time between sources, one layer for full frame DVE background and one layer for graphics content including logos and text. Transitions including cross-fades with any combination of fade-in duration, fade-out duration and overall transition duration may be implemented.



In developing its Channel in a Box packages, Snell has thrown a sharp focus on the potential that IT-based architecture offers and harnessed the skills and knowledge of some of the most creative minds that the IT industry has to offer. By partnering with Snell, your organization immediately taps into this wealth of cross-industry intelligence.



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### Graphics, DVE, Keyers

Each mixer has up to four keying layers. Any video source may be switched to a keyers input, including video players, text, static bugs, timecode, and live feeds captured with fill and key.

### Audio Processing

Each mixer provides four audio voiceover inputs, any embedded audio source can also be switched to an audio voiceover input and mixed into the output of the mixer, whilst the mixer executes a dip of the PGM audio level

### Format Conversion (Up/down/afd)

ICE provides integral real-time up-scaling of SD source material on-the-fly. Regardless of the SD source format ICE can also combine SD and HD material on the same timeline leaving you to concentrate on running the station. ICE also provides integral down-scaling of HD content to SD with mixed SD and HD content within the same playlist.

### Captions (Subtitling and Closed Caption)

ICE manages ancillary data such as subtitling and closed captions and provides support for CEA-608-B in SD and CEA-608-B in the CEA-708-C space for HD. When up-scaling ICE also provides conversion of closed captions. This reduces the amount of ancillary equipment required to deal with legacy content and ensures HD captions are correctly inserted every time.

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In addition, Snell brings to the party one of the best resourced global service and support networks. So, when you integrate your first Channel in a Box, Snell will be with you every step of the way, right through the system's lifecycle helping to meet your playout requirements in ways that support your business growth and minimize strain on your financial resources.

The Channel in a Box approach offers your business unbeatable value for money, it is unique in terms of its cost per feature and per channel on air. It is supported and developed by the industry's leading team of broadcast experts. Choose Snell and you don't have to take the risk of a 'more affordable' option; already we offer the most affordable solution money can buy.

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