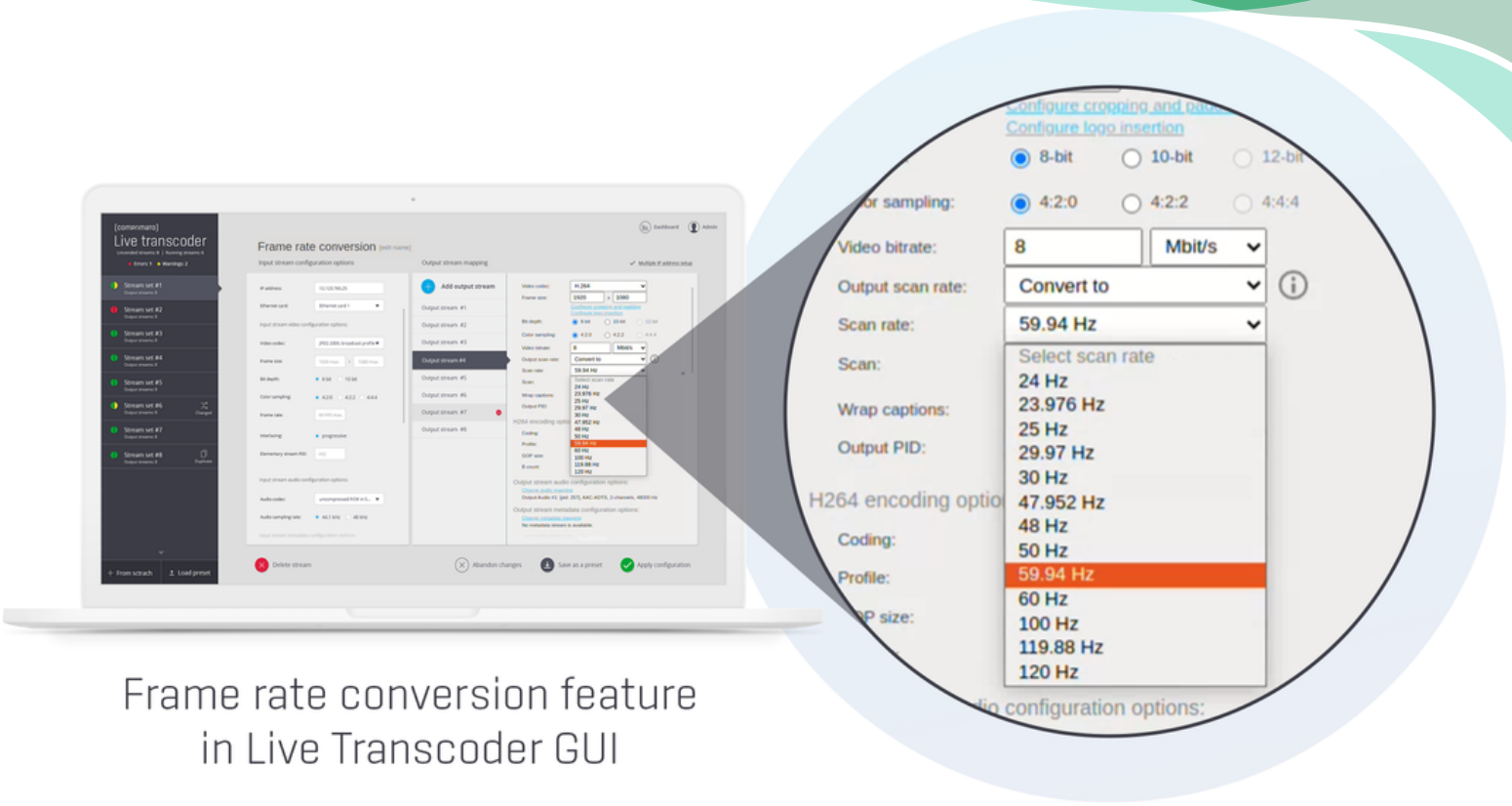


Frame rate conversion feature in Live Transcoder GUI

INSYNC TECHNOLOGY // SUCCESS STORY

InSync and Comprimato collaborate on integrated contribution solution

FrameFormer motion compensated conversion technology embedded in Live Transcoder software

In the modern world of global broadcasting, content can be created on one continent and delivered, simultaneously in multiple streams, to others. The enabling technology for multiple contribution feeds is high quality compression and IP connectivity.

Prompted by a requirement from one of the world's leading broadcasters, InSync has worked with Comprimato to develop a single point contribution system, which provides both very high quality frame rate and format conversion and lossless compression, so the signals arrive at the destination in pristine condition, in the required form.

The Challenge

At NABshow 2022, compression specialist Comprimato was approached by a leading global broadcaster with a challenge. To improve their internal workflows and provide the best service to its audiences wherever they were, they wanted a single system for frame rate conversion and compression before delivery. As production was rapidly moving into the IP domain, and the contribution circuits were all data streams, it was important that all the processing could be accomplished without decoding to SDI and re-encoding.

Comprimato is widely recognised as a leader in high quality compression. They have developed very powerful algorithms to encode video as JPEG2000, using CPU or GPU to provide the massive parallel processing required. JPEG2000 is, at present, the de facto standard for contribution circuits, offering options for visually lossless and mathematically lossless compression.

To complete the one-stop solution, Comprimato needed a frame and format converter which would match the excellent quality of the compression, and could be fully integrated into Live Transcoder, their software application, which can be implemented on premises or in the cloud.

The Solution

FrameFormer from InSync is the perfect match for Live Transcoder, drawing on the most effective motion-compensated principles, implemented in software and designed from the ground up to be CPU-only, and vendor and architecture independent. This makes it equally suitable for on premises installations or to run in the Cloud.

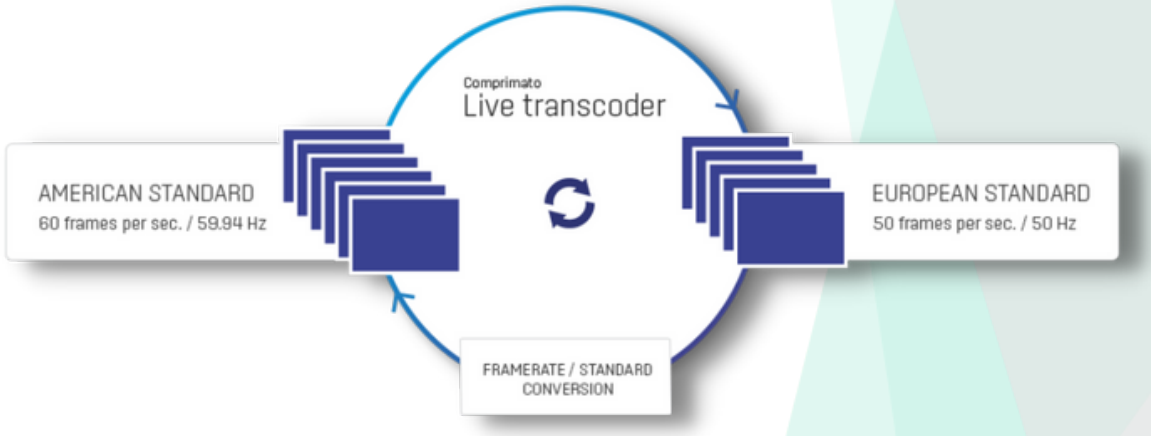
It is aimed at the most critical applications, providing frame rate conversion which is as transparent as possible. Motion compensation provides sharp, stable pictures even when the camera and the action are moving quickly, which is ideal for the sports application for Comprimato's initial customer.

InSync has invested heavily in developing a comprehensive SDK for FrameFormer and following negotiations at NAB2022, Comprimato developers took the SDK which proved clear and simple for them to integrate FrameFormer into Live Transcoder. Indeed, the team at InSync were delighted that yet again, according to an established precedent, the first feedback received was that the software was integrated and working.

From the initial contact in April 2022, Comprimato delivered four channels of the integrated solution to the launch customer by October. Initial use of the system was for British sports, captured at 50fps, for delivery to the broadcaster's US headquarters as a 59.94 stream, with minimal latency and maintaining maximum quality.

Sport is a very demanding application for frame rate conversion, as the most important parts of the image – like the ball – are the most challenging for the processing. FrameFormer impressed from the start, and InSync continues to work with the "golden eyes" experts from the broadcaster to refine the algorithm to get even better quality from the solution.

The initial implementation of this collaboration is in regular and successful work as the broadcaster carries large numbers of events each week. As a proven solution, it is likely to find other users who are keen for a single-point conversion and compression system that is simple to operate, low impact and delivers the best possible quality.



The Future

Feedback from the launch customer has spurred further refinements in the motion-compensated algorithms taking into account expert comments from the user.

JPEG2000 is the most widely used codec for high quality contribution circuits today, but there is growing interest in JPEG-XS, a lightweight codec designed specifically for very high quality, low latency applications. Comprimato is developing a powerful JPEG-XS encoder for the Live Transcoder environment.

Together, the joint solution will continue to raise the quality bar for the most demanding live broadcast requirements. Other applications could include content archiving as a batch process, to ensure the highest possible quality.

> When our initial customer approached us with their concept, at NAB, we quickly started asking around to see if there was a suitable software framerate and format converter we could integrate. Everyone we asked pointed to InSync. FrameFormer delivers the quality we wanted, the SDK tells us all we need to know, and the company is easy to work with. The solution met our customer's expectations, which was great.
>
> **Jiri Matela**
> CEO and co-founder of Comprimato.

InSync Technology Ltd designs, produces and develops products that ensure video content looks its best in any workflow, anywhere in the world. Since inception in 2003, InSync has specialised in the development of highly efficient signal processing hardware and software products, with a focus on motion compensated frame rate and format conversion (standards converters).