

# SAM's Alchemist XF Brings One Direction Concert to the Cinema Screen



Snell  
Advanced  
Media

## Case study

## Alchemist XF motion compensation frame rate conversion helps turn concert from 1080 29.97p to 1080 24p delivering first class results.



### The Customer

Virtual Post is a newly formed post production facility in the UK headed up by the renowned expert in high-end conversion Jon Lee. A specialist in SD, HD, and 4K premium content, Virtual Post is committed to delivering the highest quality content across all genres, standards and formats to its clients. More information at

[www.virtualpostproduction.com](http://www.virtualpostproduction.com).

### The Challenge

The British band One Direction have become a phenomenon around the world for their energizing music and enchanting stage personality. During the last leg of its latest global tour at Milan San Siro soccer stadium, Fulwell 73 set out to produce the One Direction "Where we are" concert film. Distributed by Arts Alliance, the concert turned into the biggest global event cinema release ever. "Preserving the concert's superb experience was our single mission when converting the film from 1080 29.97p to 1080 24p.

It was of paramount importance that the conversion quality stood the challenge of the big screen," said Jim Parsons, One Direction producer. Low temporal rate media which requires frame rate conversion for presentation on a cinema screen presents the ultimate challenge to any motion compensated frame rate converter. This challenge is exacerbated further with performing arts as typically subject movement is very fast and dynamic.

Motion estimation is significantly harder with low frame rates because the difference between each input frame is very large, and unwanted motion artefacts can occur. In some applications, the media can be slowed down by up to 4%, but this will result in pitch change to the audio which most artists are not happy with.

A conversion from 29.97p to 24p would require a huge 20% slow down. This would not be acceptable for video or the audio. Motion compensated frame rate conversion is the only option.

### The SAM Solution

"Choosing Jon Lee at Virtual Post and SAM's Alchemist XF was the best decision that we made for this project. I was astonished to see the way Alchemist XF handled the material," Jim Parsons stated.

"Such a dynamic concert shot with over 40 cameras, with this amount of movement from both the cameras and the performance, was a demanding piece of content," he recalled. Another key factor was the workflow and processing time.

As a file-based solution with a clean intuitive user interface, the Alchemist XF workflow is very easy, simply configure the job and leave it to process. With the appropriate commodity IT hardware, Alchemist XF can convert a file in real time and offers built in support for compressed files so the whole process took no more than a few hours.



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Considering this creates a premium master file that will be distributed across the globe, it is very cost effective. The quality control process for such a high profile client is always a tremendous test for any tool out there. "Jon and I went through the whole film frame by frame and barely spotted any imperfections – the results were virtually perfect," Jim Parsons said.

The challenge of the temporal rate conversion was exaggerated by the fact that the concert was going to be shown on a huge screen. It is an unforgiving environment where any imperfection will be noticed. "For such a challenging low frame rate conversion, it was the cleanest output I have ever had the pleasure to attend, quite remarkable. I can't recommend Virtual Post and Alchemist XF highly enough," Jim Parsons added.

### The Results

The One Direction concert film was watched by over one million people around the world on 3,400 screens in 78 countries over the 11th and 12th October. The concert was released on DVD on 1st December.



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