



Take control of your content in
the Cloud with InSync
FrameFormer



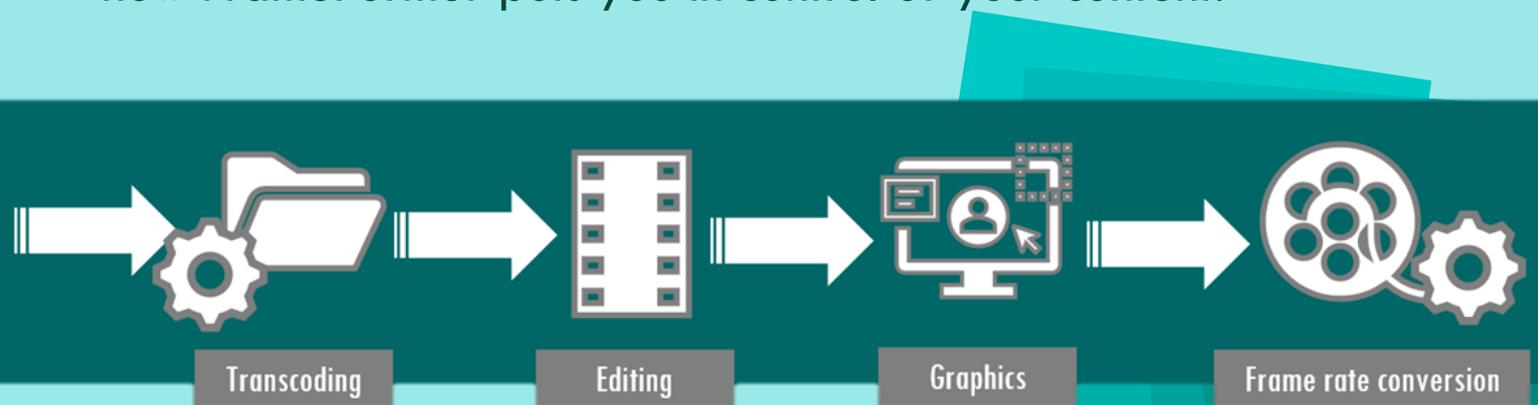
Background

Frame rate conversion

The content industry has moved on, in case you hadn't noticed. Consumption of international content isn't a rare phenomenon for special events. It's expected every day, on every service: live, on-demand, catch-up and binge-watched. But with the proliferation of material, competition for global viewers gets tougher every day, and a less than perfect viewing experience can push prospective audiences away.

Any time that there is a difference between the format and frame rate used in content production and the format and frame rate of the viewing device, standards conversion (frame rate conversion) is needed. This includes any international content distribution as well as delivery of movies in formats suitable for home TV, PC and mobile viewing.

If you've read any of our previous white papers, you'll already know that the best quality frame rate conversion is ensured through the use of motion compensated processing, which is available from FrameFormer by InSync. In this blog we'll show some use cases which illustrate just how easy it is to convert and how FrameFormer puts you in control of your content.



Why Migrate?

What's happening to your content?

You've spent time and money on a fantastic production. Perhaps it's a dramatic documentary series shot at 23.98psf to create a "film look" or a novel game show produced at 59.94i for US TV distribution. Maybe you have a classic show in your content archive that's ready for a revival. These are all great opportunities to take advantage of international distribution and the latest streaming services, but what happens to your content before your audience sees it?

Even with the highest possible production standards, letting your finished programme run the risk of a bad standards conversion before delivery to your viewers is not acceptable. Poorly done standards conversion causes visible artifacts including; irregular or jerky motion, pulsing or flickering of detailed areas in the scene, object shadowing or "ghosting" and other visible defects.

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There's a common misunderstanding about software video players impacting the quality of your content. While it is true that software players can decode content at any frame rate, there is often a mismatch between the video frame rate and the display device. For example, Figure 2 illustrates a service streamed at 23.98fps viewed on a 50Hz European TV.

To deliver frames to the screen at the required rate to match the display refresh, the player may repeat frames (or drop them in other circumstances) thereby degrading the fluidity of motion and antagonising your otherwise engrossed viewers.

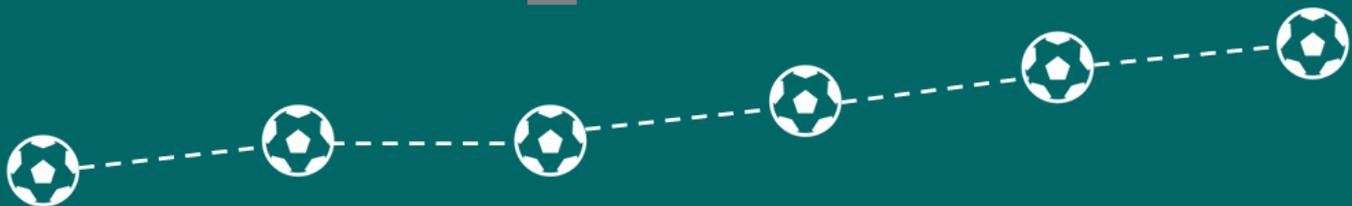
Alternatively, some players will deliver frames to the display at the native frame rate of the content, leaving it to the display to carry out the frame rate conversion. In this case linear interpolation is typical, leading to blur and defective motion rendition.

Incoming frames



Output frames

Duplicated Frame

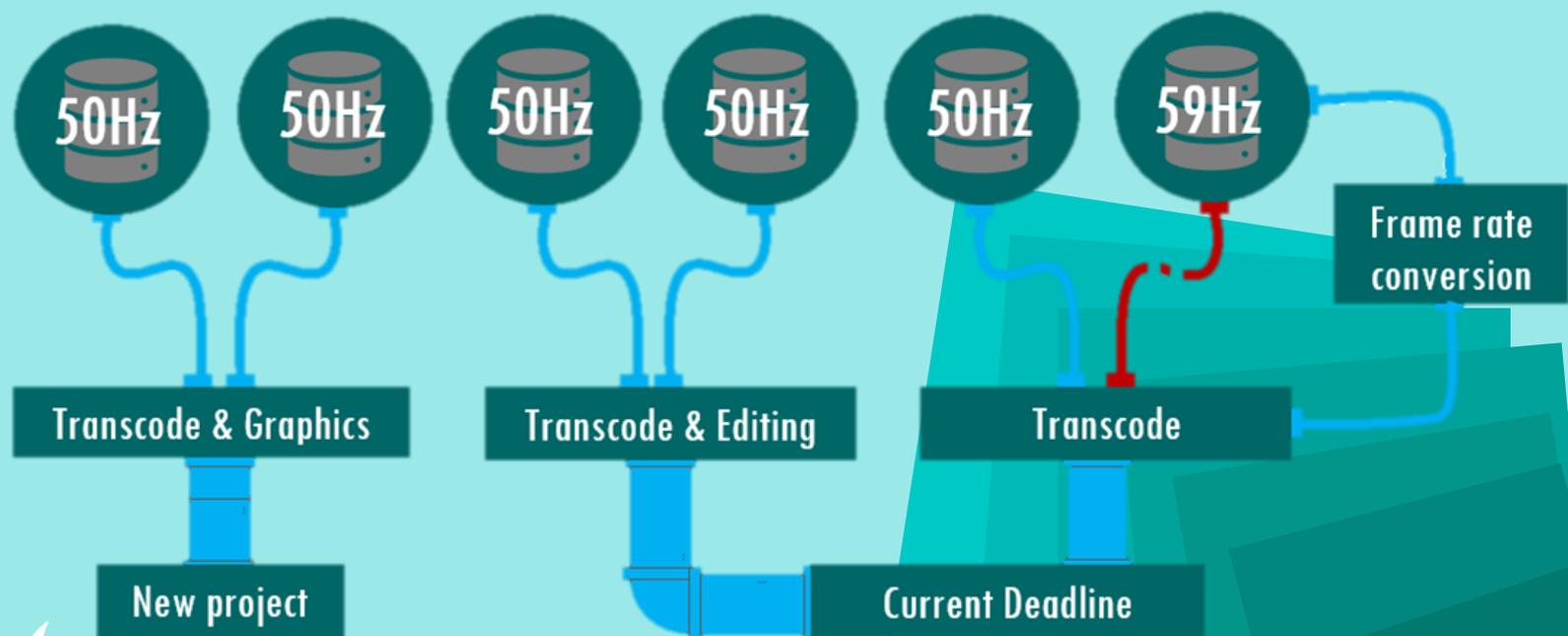


Challenges

What can you do with content in the wrong format?

You've established a firm production quality control process within your facility. Your content is impeccable and your project is in progress. Unexpectedly, new material arrives for integration into the production which is at a different frame rate. This could be archival footage which is essential to the narrative (e.g. a clip of a famous event) or material supplied from an external source which can't be re-shot (e.g. acquisition of a rare or newsworthy event in progress such as a nature shot or a dramatic rescue). Sometimes even an entire day's shoot can be captured at the wrong frame rate but the talent or the location are not available for that crucial re-shoot.

For these situations, it is essential to have immediate access to a motion compensated standards converter. You don't have the budget to keep a standards converter on site for such infrequent use and you don't have time to hunt down a facility that can convert the material for you.



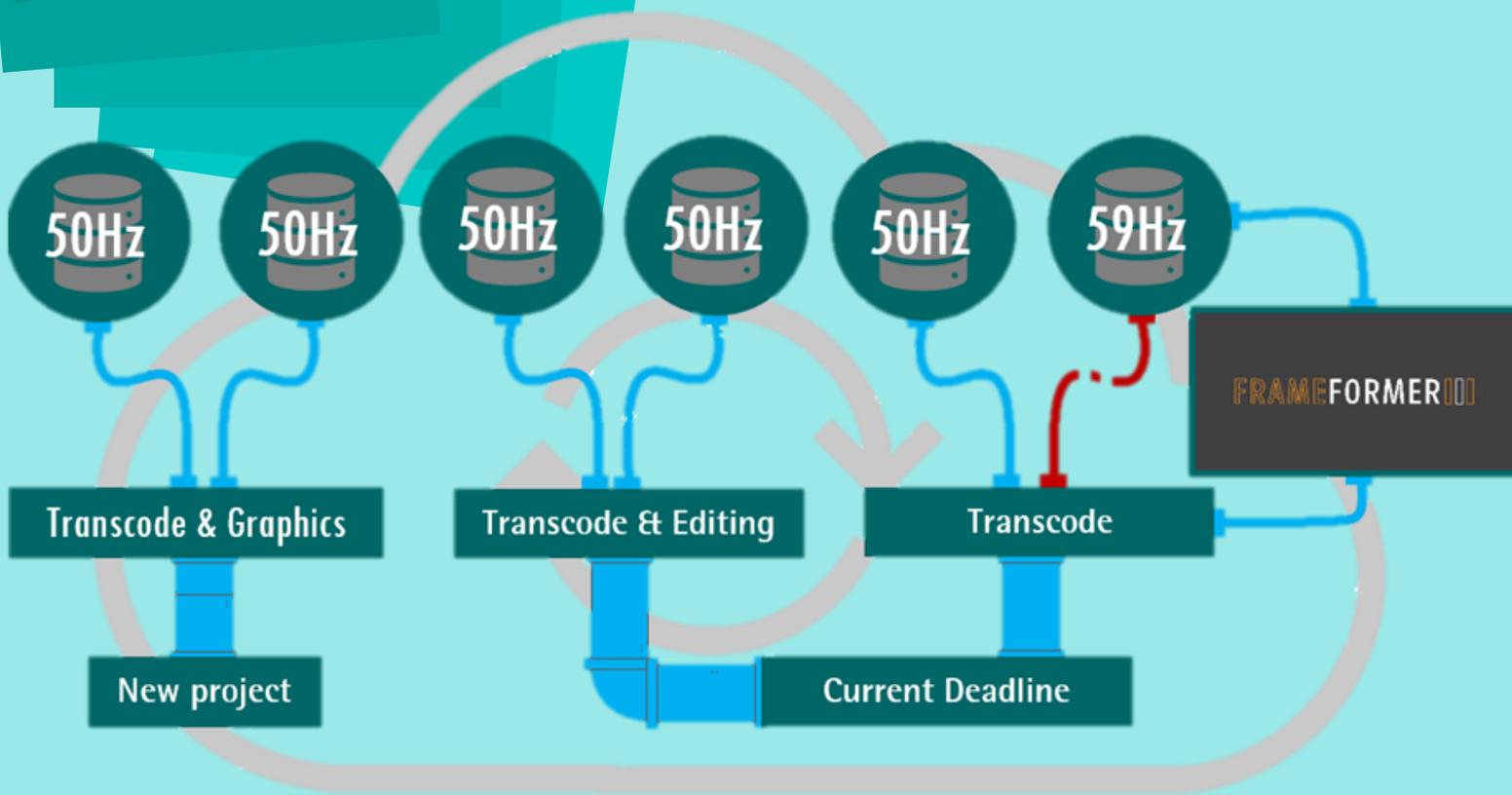
Another common roadblock comes from short-term licensing of content. As an example, a US-based network or streaming service acquires rights to a European TV show for a limited time span.

12 episodes are delivered for distribution over the next 6 weeks. The network needs to start making this content available as soon as possible to gain maximum return on investment with the licensing, in which case, it is critical to have access to a motion compensated standards converter at short notice.

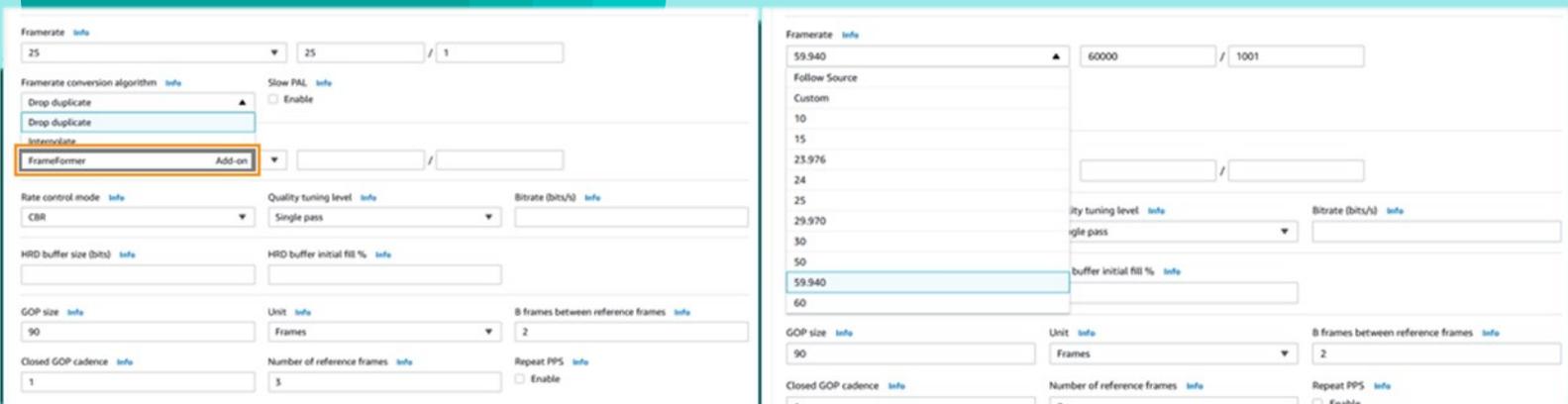
Motion compensated frame rate conversion is even there in emergencies. Your playout scheduler discovers that the version of your content ready to be loaded onto the playout server is at the wrong frame rate. Did someone label the file wrong or did it get accidentally put into the wrong file store? No time for diagnostics - you need to convert on the spot!

Solving your conversion headaches

Since content can be delivered across the globe in a matter of moments, why should you be limited by where you can physically locate your frame rate converter? We've seen from the above examples that conversion could be needed anytime, anywhere. Instead of having to take your content to a converter, FrameFormer in [AWS MediaConvert](#) brings the converter to you.



When a content headache starts to loom, FrameFormer motion compensated frame rate conversion can quickly solve the problem. FrameFormer in [AWS MediaConvert](#) is available anywhere, anytime, and can be used by simply running MediaConvert, and selecting FrameFormer from the framerate conversion algorithm drop-down menu.



The screenshot shows the AWS S3 console 'Objects (2)' view. It contains a table with the following data:

Name	Type	Last modified	Size	Storage class
london_60Hz_62.mov	mov	February 10, 2021, 11:19:54 (UTC+00:00)	2.0 GB	Standard
london_60Hz_62mpeg4.mp4	mp4	February 10, 2021, 11:44:19 (UTC+00:00)	1.0 GB	Standard

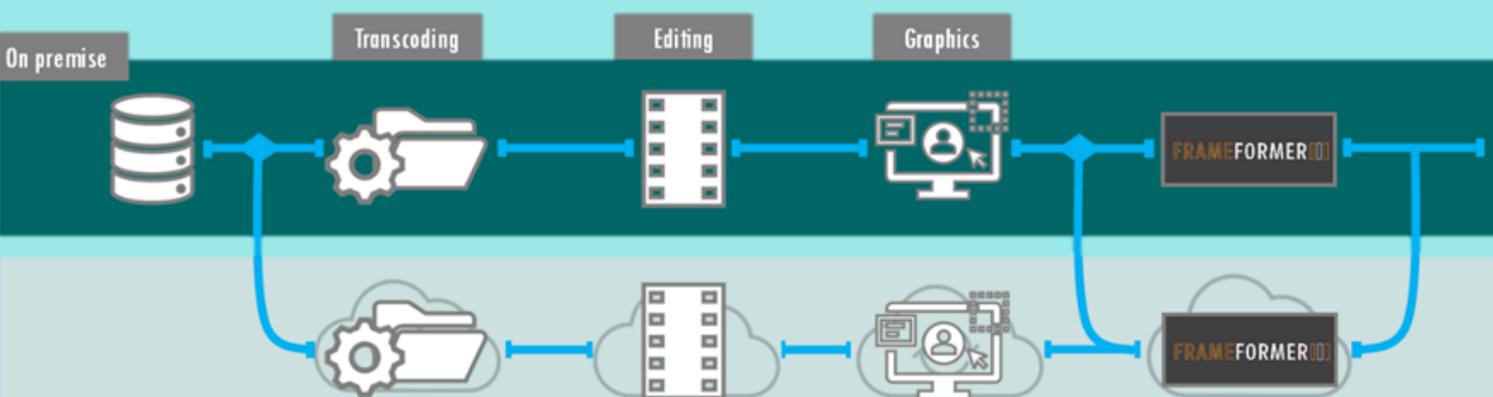


Returning to our broadcaster, who licensed a series mastered at 59Hz but needs to convert to 50Hz for monetisation in Europe. Without taking a chance on an inferior conversion, the broadcaster stays in control of their content using FrameFormer in AWS MediaConvert to perform high-quality frame rate conversion and ensuring consistent results.

Solution

An entire workflow in the cloud saves time and money

As media production workflows migrate to the cloud, it's important to have a seamless processing environment, which can be set up and replicated for all material. If you're processing content on a daily basis, you need solutions which can be defined once, then used again and again. Peak or unexpected demand must be accommodated by a flexible and scalable solution.



FrameFormer in [AWS MediaConvert](#) is an ideal solution to keep you in control of your content and your costs. You're only paying for conversion when you need it, so content in the right format and frame rate doesn't need FrameFormer. However, when those content roadblocks start to appear, the flexibility and scalability of FrameFormer in AWS MediaConvert enables you to rapidly access motion compensated conversion at scale. It's available in all regions, any time day or night. There's no need to break your cloud workflow just because you need frame rate conversion.

Conclusion

Using a professional solution such as FrameFormer enables high quality solutions to your content headaches. With FrameFormer, frame rate conversion comes to you, wherever you are, whatever your frame rate conversion problem. The solution is fully accessible within a cloud workflow and can be turned on and off whenever you need, ensuring you get the results you need while only paying for what you use.

To see how FrameFormer can help you take control of your content, visit:

<https://www.insync.tv/software-solutions/frameformer-saas-2/>

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Follow us:



Watch our video of how to set up and run FrameFormer in AWS MediaConvert: <https://vimeo.com/511489897>