

Recommended best practices for performance capture

Image Metrics FACEWARE facial animation software works with performance data from analyzed digital video. While the software is very forgiving to exposure, framing, focus, and lighting, our recommended best practices for FACEWARE is best optimized with tightly framed, properly exposed, evenly lit, in-focus video of an actor delivering his/her performance on camera. Always keep in mind: "If FACEWARE can see it, FACEWARE will analyze it."

How do I best capture an actor's performance?

We most commonly see two main methods:

1: The first would be for an actor to stand or sit in front of a video camera on a tripod and act. That's it.

This method is mostly used in an **ADR / VO booth** simultaneous with the recording of a project's dialog, ensuring perfect lip sync and emotion for the characters in your project.

This method can also be used for "**faceover**", in which an actor mimes the lines of previously recorded dialog. This is not ideal as it is not the original performance, but is viable option when vocal talent is not optimal for facial performance.

2: The second method is our Image Metrics **headcam**. It is a miniature production quality camera and lights on a boom arm attached to a helmet. With the headcam, an actor is free to roam around space, as the camera stays perfectly framed and focused on the face, whether the actor is looking around, or even running and jumping.



This method is best suited to use on a Mocap stage where simultaneous body, and facial capture can add the extra sense of realism to your project. Lavalier microphones can be attached to the helmet or boom arms for dialog recording as well.

So which method is better?

While both methods are capable of producing high quality performance data, each one has it's own distinct advantages. With so many production variables, (location, recording standards, frame rates, etc.) our performance capture experts can evaluate your unique situation and present the best possible solution.

What is the actor preparation like?

With a stationary camera, the actor stands or sits in front of the camera, the camera operator sets frame and focus, hits record, and away they go. The headcam takes about a minute to put on and adjust for that actor's individual face, then we are ready to roll.

Must makeup or markers be applied?

No painstakingly-applied markers are required. No makeup, phosphorescent or otherwise, is required for FACEWARE.



Best practices for framing, lighting, and focus for capture.

How does a director have to adapt to this technology?

We believe technology should enhance but not complicate, so we keep production simple. The director directs the actor to play the scene in front of a camera and lights, they same way the two of them have worked their whole lives. The director then reviews video and makes his or her selects.

What are producer considerations for this technology?

While you are free to manage your performance capture on your own, Image Metrics offers full pre-production consultations assuring seamless integration with other aspects of your production, whether that be sound, timecode, or body Makeup.

Our Image Metrics' performance capture supervisor is available to oversee or run your shoot, worldwide, assuring high quality performance acquisition. NTSC, PAL, 24th, HD or SD, we can work in almost any production standard.

We can handle all aspects of the production, from equipment acquisition, to the shoot, to footage processing. We use industry standards video production equipment, not cumbersome, intimidating, proprietary rigs.

Setup is minutes, not hours or days. We get going and get done fast. Downtime between actors or scenes is minimal, mostly non-existent. If you have cameras and lights up to our spec, we can even use your equipment. All this adds up to high caliber, low cost production that fully integrates into your pipeline.

Once the production is finished and your director has made his/her selects, your editor delivers us that footage for analysis and prep for FACEWARE.

Best Practice for capturing video:

- FRAME TOP OF HEAD TO COLLAR BONE
- GOOD, CLEAN, EVEN LIGHTING
- IN FOCUS (DO NOT USE AUTO FOCUS)
- CLEAN SHAVEN, UNOBSECURED
- REMOVE EYEGLASSES IF POSSIBLE



Examples of capture that may lead to poor Image Metrics Performance Data (IMPD):



UNEVEN LIGHTING



FRAMING TOO WIDE



FRAMING TOO CLOSE



ACTOR OFF ANGLE



OBJECT OBSCURING FACE



OUT OF FOCUS

Typical Setups:



VO BOOTH/ TRIPOD SHOOT



FULL PERFORMANCE CAPTURE / HEADCAM

Image Metrics recommendation for facial capture in a VO booth setting

The goal is not only to capture quality facial data for the FACEWARE, but to do so in a manageable way that leads to an organized post-production workflow. This can be achieved by utilizing toolsets to keep the video in sync with a traditional post-production audio environment.

REQUIREMENTS

Camera:

Any camcorder that can shoot in standard definition in 30P or 30F mode with an s-video or component video output. These include the Panasonic DVX100a/b, HVX200, any prosumer Canon (i.e. XL1/2 or higher).



Contact Image Metrics for details about budget constraints or concerns getting a NTSC or PAL camera to set, etc.

DAW:

Pro Tools with an Avid Mojo. Avid Mojo is a box that allows high quality video to be recorded as its own track concurrently with the audio being recorded in Pro Tools. It can be stamped with identical file names and timecode.

Optional Video editing platform: Final Cut Studio v6 or higher. This is a relatively low cost and powerful video editing program that will provide a batch solution for rebuilding and exporting your audio timelines to video timelines with the matching takes.

Workflow:

Setup the camera and lighting in the VO booth in accordance with this document. Set the camera to SD 30P or 30F mode. Connect the camera to the Avid Mojo box via S-Video, Component, or SDI cable. Allow some time before your shoot for your engineer to get acquainted with using the Mojo. In practice, the only difference is when the video track is armed to record with the audio track, there is a .5 to 1 second delay when the engineer hits record to when the system starts rolling. When recording AI or in-game lines that do not need to be animated, you can disarm the video track and work without the minor delay as you always have.

Once the shoot is concluded, you can have your engineer or even an assistant sound engineer export your selected (or circle) takes from Pro Tools. This is called **"bounce to disk"**. In this manner, Quicktime files with your production dialog and matching timecode can be made into their own clips. Four things to make sure of:

- 1) Maintaining proper file names on export
- 2) Proper file organization
- 3) Maintaining timecode stamping
- 4) Export settings of for Quicktime:

COMPRESSION: Photo-jpeg at exactly "high" (75%) quality,
29.97 fps (if NTSC), 25 fps (if PAL), or 23.98 fps (if DV/Film) with 48/16 audio.

In sending your video to Image Metrics for processing, there are different ways to do this at different stages of your development. For situations when the timing of a scene is locked, we find the simplest integration of our data comes when per character, per scene video timelines are created to match the corresponding 3D Software scene (Maya, XSI or Max) scene. This is essentially a video clip, the same frame rate and length of your the 3D Software scene, and where a character's audio is, there is video. And where no audio is, there is black. This boils down to our "video in, animation curves out" pipeline. In this way, the 3D Software files we deliver fit right back into your scene, and more importantly, your build. This can be achieved by importing an EDL and OMF per scene from Pro Tools into Final Cut Pro. In this way you can easily recreate your audio timeline as a video timeline by a frame accurate re-linking of your video to your audio.

For situations where the timing of the scenes and the body animation are not complete or not locked, you can always send us individual lines of dialog as their own video files. These are the Quicktime movies created in the "bounce to disk" process. In return we will deliver each line of dialog back as an individual scene file whose curves can then be brought into your larger scenes and placed anywhere.

Conclusion:

We understand the video addition onto the audio pipeline adds a few question marks to the way things have always been done, but we have run this process on many projects before and are happy to help and consult the whole way through.