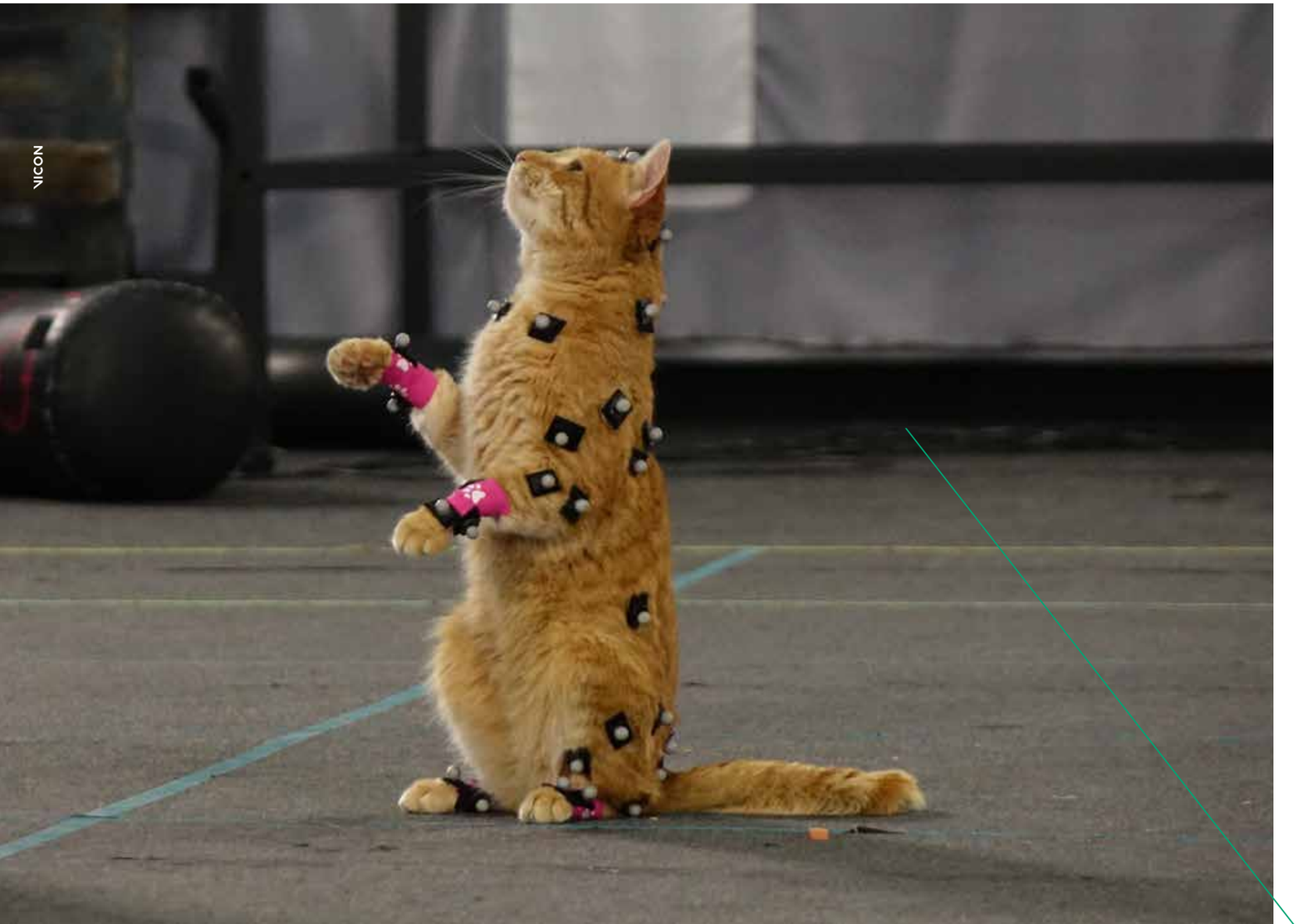
# TAILS OF KITTY CAPTURE

## WITH PATIENCE, EVEN THE MOST DIFFICULT ANIMALS CAN PRODUCE GOOD DATA



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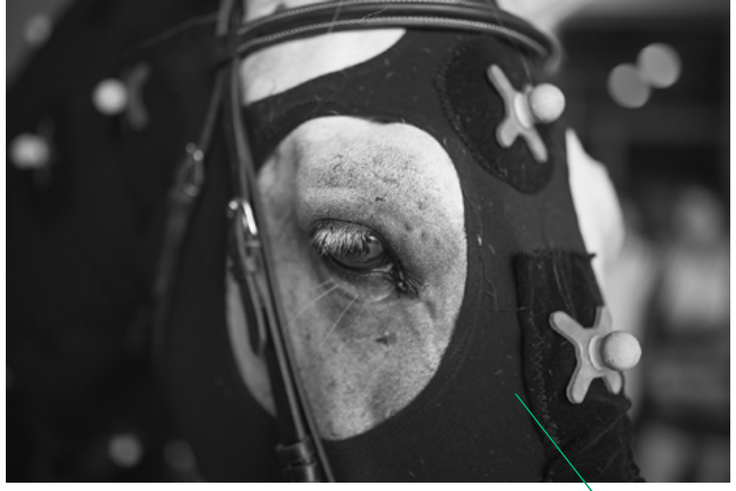

DIGIC has been providing motion capture services to its clients for around 12 years, using its data to produce VFX for film and TV as well as animation for video games. Mostly, that involves capturing stunt performers and vehicles. DIGIC also has a very specialist sideline, tracking animals.

*György Tóth, Managing Director of DIGIC Services*

To date, much of this work has focused on horses and dogs. More recently, though, the studio has been tracking animals that are notorious for their unwillingness to do what they’re told – cats.

Doing animal capture in-house wasn’t DIGIC’s first choice. “We purchased horse mocap data from several places for earlier projects,” György Tóth, Managing Director of DIGIC Services, says, “but we weren’t satisfied with the quality, so we decided to try to record the horses’ movements ourselves.

“During our first horse shoot, it was difficult to get the markers to stay on the horse, so for the next shoot we had a cloth sewn to make the markers stick better. There were also some problems with that: the cloth on the legs would get tangled, and if the horse got too sweaty the cloth would stretch, for example. After three or four shoots we got to the point where we could extract good data from the sessions, and the current marker set was developed based on that experience.”

DIGIC has banked almost 10,000 shooting hours in the dozen years since it established its volume, amassing 60TB of data and nearly 40,000 takes, so experience isn’t something the studio is short of.

Those takes have been done in a steadily evolving setup that currently includes 40 16MP Vicon T160 cameras. “The team that designed the system had experience with optical motion capture and inertial sensing,” says Tóth. “Based on this knowledge, we decided to go with the most advanced Vicon camera solution at the time, which was the T160 series. Over the last 12 years, after a few thousand hours of shooting, we think we made the right decision!”

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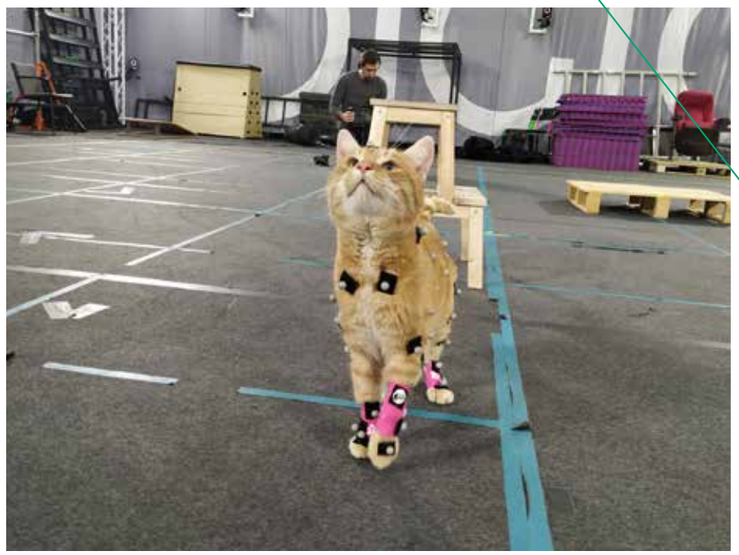

## MOCATS

The mocat project began at the request of a Korean client looking for a library of mocap data and scans of dogs, horses and cats to be integrated into their game engine as full navigation movements. While DIGIC was working with the cats, the studio decided that it would also use some of the data for "some more interesting ideas both for internal use and to put it on the market," says Tóth.

For all of DIGIC's work with horses, turning their expertise to cats wasn't as straightforward as swapping one animal for another.

On a practical level, Csaba Kovári, Mocap Division Lead, says that, "We couldn't dress the cats, so the marker placement had to be done differently. And you couldn't put markers on the tails, either; it would have made natural movement impossible."

Then there was the issue of getting the desired performance from the cats.

"Although the cats were trained and had been in films many times, it was a challenge to get them to move naturally despite the markers that were placed on them," says Kovári. "The solution was a relatively long acclimatization process. First, placing one or two markers on the cat's body for a few minutes, then gradually working up to the full marker set.

"Also, it's important to note that it took approximately one month to train the cats – with the help of a professional animal trainer – and prepare them for the mocap shooting session.

"Another thing to mention is that, unlike humans, cats, horses and dogs can work for much shorter periods of time. Therefore we had to take a break after one or two hours or replace the animal with another one."

After the performances were captured, processing the data presented its own problem.

"The other challenge was that for the cats, as for the dogs and horses, we had to develop a bespoke solver that could transfer the marker data to a skeleton that's as lifelike as possible, while also taking into account the anatomical features," says Kovári.

The cats' much more mobile spines were a particular factor when it came to designing for cats rather than horses, too. "It took a lot of fine-tuning, and the marker set changed a lot after the first tests," says Kovári.

## PEOPLE POWER

Having the right technology in place is only one piece of the puzzle, however. The other is having people in the loop who can problem-solve during a difficult shoot.

"Working with animals is a completely different field from working with human performers," says Tóth. "It's very important to find the right trainer team, to work closely with them, to assess what is feasible, what is not, or when the shoot might become unpredictable. Also, it's crucial to be prepared for the possibility of a complete redesign of the shooting schedule."

While working with animals might require a loose approach to planning, DIGIC doesn't intend to be put off. Looking ahead, the company plans to deepen its library of cat and dog animations. The studio is also, Tóth says, working on a new IP of its own, funded by the Epic MegaGrants program, involving a range of different animals.

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