



CASE STUDY SPECIAL CAMERAS

SIS LIVE at the World Swimming Championships

The 13th FINA World Swimming Championships took place in Rome in July and August 2009 at the Forco Italico complex. Italian state broadcaster RAI was the host broadcaster and during the 17 days of competition, 50 RAI journalists and 120 technicians supported 200 hours of television, more than 10 hours a day live.

For the water polo and synchronised swimming events, RAI employed a company called Frame to produce the television coverage. Frame in turn contracted SIS LIVE to supply and operate the special cameras used on the events. In addition, SIS LIVE provided the special cameras for the diving events in the same complex.

Paul McNeil, manager, Special Cameras, SIS LIVE, says his team designed, built and operated special cameras for all three events. Everything was also shot in high definition, a first for the swimming.

Water polo and synchronised swimming

SIS LIVE has built and operated many underwater tracking systems for major swimming events, but never before for water polo. The company adapted its 'Halibut' system – so called because it stays at the bottom of the pool – for the underwater filming.

'When we were first asked to do it, we didn't understand why the director wanted it, because the action is all above the water. Or so we thought,' McNeil says. 'It turned out that he wanted to show everything and a lot goes on under the water that no-one ever gets to see. Although it looks like the teams are playing to the rules above the water, underwater all kinds of things are going on: fouls, kicking and obstructing opponents. Our footage was used as a replay and by the director as a split screen. For the first time, it explained the game of water polo.'

The Halibut camera used for the water polo was dubbed 'Halibut HD' and consisted of a pan and tilt camera mounted on a 30 metre track at the bottom of the pool.

The camera was also designed to move at high speed underwater.

'Halibut HD had to be very fast because in water polo they throw the ball from one end of the pool to the other,' McNeil says. 'So we designed and built a brand new system that could travel at 6 metres a second.'

A crucial factor for McNeil was the fact that the same team designed and built the special cameras as operated them. 'We find it works better with one person being responsible for the whole thing, so the track system and camera controls work from one set of controls,' he says. 'Because we also operate the systems, we know what the production requires, which makes it easier when we're designing.'

The schedule in Rome was quite intense, with everything outdoors in extremely high temperatures. 'The first match was at 8.30am and lasted for two hours, then there was an hour's break, then another match for two hours, then another break and then three more hours in the evening. Despite the workload, I'm happy to say everything went very well.'

Diving

For the diving event, SIS LIVE supplied its 'Plunge cam' a pan and tilt camera mounted on a 16 metre high column.

'Plunge cam takes the diver from the 10 metre board to the water and then 4 metres below,' McNeil says. 'Above the water, it travels with the diver at the speed of

gravity – 1.4 metres per second – and when it hits the water it has to slow right down. The system is computer controlled so it remains with the diver the whole time. It also has a joystick control so it can pan and tilt round to follow the diver as he swims round to the side.'

SIS LIVE also has a special camera high above the board to show the entry path of the diver from the board to the water.

Other special cameras

SIS LIVE also supplied a number of other special cameras for Roma 09.

'Barnacle cam' is positioned in the middle of the end wall between lanes 4 and 5 to capture the finger touch of the winner.

McNeil explains that the camera,

on another pan and tilt head, was manually controlled, with the operator choosing which lane is likely to win and turning the camera that way.

A Halibut HD camera system was also laid at the bottom of lane 4 – under the fastest swimmer in qualifying – and followed the action underwater. It was also able to capture the turns at the end of the pool.

McNeil says the whole event was a great success and that the technology SIS LIVE developed can be used for other sports events coming up in the next couple of years. 'Of course, we will keep developing new cameras as we go along, because everyone always wants something new. And that's what we do.'

