

Monte Kaolino, Hirschau, Germany



World Sandboarding Championship 2007

Video Technology at Europe's largest Man-Made Mountain

It's important for manager Wolfgang Schwarz's employees to concentrate and be vigilant at all times. Have all the passengers up at the start correctly put down the safety bar? If so, their descent down the toboggan run at Monte Kaolino in Hirschau will begin at the push of a button. The employee's gaze immediately shifts to the images coming from another video camera as just a few seconds later, another bobsled hurtles towards the finish at 40 kilometers an hour. The driver is supposed to brake before he reaches the bottom. If he doesn't do so, there's a short clicking sound and the system automatically reduces the speed of the sled. MOBOTIX IP cameras have large parts of the toboggan run firmly in their sights. The cameras record information every time a sled starts and crosses the finish line. "This shows that we're documenting events objectively, should a guest ever complain," says Schwarz.

The Mountain is calling: Ski in your Swimsuit

The giant white mountain in Hirschau near Amberg is really quite a rarity. It is one of the highest man-made peaks in Europe where 30 million tons of quartz sand has been piled 150 meters high. The mountain sparkles as snow-white as a distant Alpine peak, even in the sizzling summer heat, and it offers brilliant views as far as the Czech Republic. Created from demolition work, Monte Kaolino's rare attractions

attract hundreds of thousands of outdoors lovers every year. Skiers and snowboarders wearing bikinis and swimming shorts, sunglasses perched on their noses, effortlessly glide down the sparkling sand into the valley. Many use a small piece of plastic (a mini-bob) or go down in their bare feet. Monte Kaolino was once featured on the popular German television program 'Galileo,' showing on Pro7. The highly-publicized World Sandboarding Championships also took place at the Bavarian mountain.

As the operator of 'Monte Coaster,' the SC Monte Kaolino Ski Club must ensure that two of their attractions are secured with video technology according to guidelines provided by the testing facility TÜV Bayern. One is the 800-meter toboggan run with a maximum vertical drop of 55 percent. The other is the 200-meter 'Boat System' that has to cope with a 150-meter height difference. Skiers and sandboarders use the system like a lift as it carries them to the top of the mountain in a small nine-seater boat. Those not so daring can take its counterpart back down to the bottom of the mountain.

MOBOTIX IP cameras have a clear view of the staging area, middle section and the end of each route. Norbert von Breidbach-Bürresheim, Managing Director at VALEO IT Neteye GmbH, planned and implemented video technology at Monte Kaolino.

"There were a few crucial points that showed us that MOBOTIX IP systems are the only ones that can handle difficult challenges."

Cameras Defy Sand Storms with winds of 100 Kilometer an hour

One difficulty was clear from the outset. Fine sand that swirls up very quickly causes problems for standard cameras. The microscopic grains can penetrate cracks in the housing and damage sensitive electronics, which can quickly lead to system failures. Cameras with mechanical zoom or pan functions would quickly reach their limits because any sand in the system would block the control mechanism.

Von Breidbach-Bürresheim doesn't have any of these problems: He has exclusively relied on MOBOTIX IP cameras that feature excellent digital zoom and a completely sealed housing (depending on the model up to protection class IP66) for years. The experts in extreme outdoor conditions recently proved their expertise with installations on Mount Everest and in Antarctica.

Even Monte Kaolino occasionally experiences unpleasant weather conditions. Winds can whip up over the mammoth manmade mountain at speeds



Fine Sand: sensitive Electronics in video Cameras needs to be well-protected

of up to 100 kilometers an hour and swirl up the fine sand like during a storm in the Sahara. However, this wasn't a reason for von Breidbach-Bürresheim to rule out the cameras. "MOBOTIX devices can easily withstand these conditions."

MOBOTIX IP cameras showed what they could do during a comprehensive pre-test in 2008. At that time, operator Wolfgang Schwarz had planned to modernize his old systems. The crystal-clear, detailed images and the reliable housing were so impressive that he did not even attend a competitor's presentation.

Camera Poles: Screwed Into The Sand Mountain With Giant Anchors

Securing the camera poles on the soft, unstable surface was a special challenge for the video specialists. Nevertheless, VALEO IT Neteye GmbH also found a solution to this problem. The poles are screwed deep into the mountain in oversized tubes. The special fittings are similar to the plastic anchors that DIY handymen set in plasterboard for home improvement projects. "The poles are as steady as a rock. The only thing we ever notice

is a slight wobble of the camera image if there are very strong winds around the valley station," says von Breidbach-Bürresheim.

VALEO IT Neteye did not only demonstrate its system expertise in securing, but also during the planning process. It made sense to install as few cameras as possible. After all, according to guidelines provided by the TÜV, an individual viewer must always have a clear view of the toboggan run and the boat system. Too many images would push an individual viewer to the limits of his ability to absorb information.

Von Breidbach-Bürresheim achieved the required continuous overview with an astonishingly low number of devices. Just seven cameras are installed on the mountain: four on the toboggan run and three on the lift. Two MOBOTIX M12 cameras, four M22 devices and one new M24 device are currently in use.

A Few High-Resolution Cameras – A Lot Of Costs Saved

All cameras are fitted with fixed focal length and fisheye lenses. "This solution is ideal if it's just a matter of being able to take a quick glance to check

if everything is running smoothly. The viewer isn't overloaded with useless output from extra cameras," explains von Breidbach-Bürresheim. A quick glance is all that's necessary for supervisors to see whether teenagers are testing the capacity of a bobsled again. The cameras also feature microphones for audio transmissions. Staff can speak to the guests from the control center at the push of a button.

MOBOTIX cameras have an advantage of state-of-the-art IP devices in case there is ever a complaint or an accident. Thanks to the cameras' high resolution, it is possible to digitally zoom up to eight times at a later point in time and instantly detect the smallest details. Free MOBOTIX MxControlCenter software is installed on standard PCs. It allows you to adjust resolution, frame rate and the recording duration of the video stream, among others, at the click of a mouse.

Up and Running In Just Four Days

Von Breidbach-Bürresheim, who has been working exclusively with MOBOTIX cameras since 2005, elegantly solved the cabling issue. He installed a supply tube at a depth of 80 centimeters. It contains



and protects fiber-optic and two-wire cables. It is possible to upgrade existing cables (telephone cables, bell wires or antenna cables, for instance) for intelligent, cost-effective IP technology using MOBOTIX's Mx2wire solution. Just one Mx2wire unit is needed at the beginning and end of the cable. The incredible thing is: In addition to data, the energy required to operate the cameras can also be transported using these cables (using PoE).

VDSL modems in a small wooden house at the bottom of the mountain transfer the video streams. There is

also storage device there, not far from the viewing facility. The images are overwritten every two weeks if nothing important happens.

Operator Wolfgang Schwarz believes the complete solution is amazingly simple and effective. "The operating costs are low, just like we wanted them to be." He was even more surprised at how fast the system was up and running. In just four days, von Breidbach-Bürresheim had laid all the cables, mounted the poles and cameras and configured the system.

Basic system information

Outdoor cameras:

2 x M12, 4 x M22, 1 x M24

Server:

Overland Snap Server 410

Control Centers:

1 PC, 3 monitors, 1 PC, 4 monitors

Retailer information: