Camera pictures to 650 Meters Directly with Power

Site Name	Green World Ecological Farm
Country/ City	Hsinchu, Taiwan
Industry	Theme Park
Solution	DTV FHD Digital Surveillance System
Solution Provider	A-Tec Subsystem Inc.
Reasons of Adoption	■System Expansion by Daisy Chaining ■Long-distance transmission ■Full HD video quality ■Power over coaxial cable (POC) ■ Others (no operation/service disruptions)

CUSTOMER NEEDS AND PROBLEMS

Covering an area of more than 70 hectares in the outskirt of Hsinchu, which is reputed as the Silicon Valley of Taiwan, the Green World Ecological Farm is an international eco-park featuring 6 theme parks including Swan Lake, Aquatic Plantation, and Bird Ecology. The Farm is not only qualified for the building safety management and fire safety management required by the Regulation for the Management of Tourist Amusement Enterprise, but also covered by public liability insurance.

Considering the vast scope of the park, for the safety of visitors and the timely response to emergencies, the Farm decided to establish a full-park surveillance system in order to minimize the possibility of accidents. The surveillance system was also intended to document the life and activities of resident animals for online advertising. To cover a vast area of more than 70 hectares, the system has to consist of at least 50-60 cameras, maybe up to 100. All camera videos have to be transmitted back to the park control center through coaxial cables. It is an engineering challenge to install dozens of cables, manage them and keep them up and running in the years to come.

BENEFITS

One of the major advantages that A-Tec presented to the park owner, which other market-available products cannot provide, is cable sharing. With cable sharing, a number of cameras (the number depends on the system design) can be connected in a loop, star, or tree topology all through one single coaxial cable. The overall surveillance framework to fulfill Green World' s need consists of six 16-channel real time 480fps DTV video servers and 64 DTV 1080P cameras. With some design trade-off, it is proposed that every four cameras

share one coaxial cable. This allows the farthest camera to be located nearly 500m away from the security center while no amplification is required. The sharing reduces the number of cables from 64 to 16. Thus, the cabling complexity is reduced significantly by 4 times.

The central monitoring system (CMS) is installed at the security center with pop-up waning prompts. The footage from all 64 channels is shown collectively on one big screen, allowing the security crew to monitor all channels with ease. The APP installed on the smart phones of the park executives give them the convenience to keep a track on everything going on the park.

Also, in order to save money for the owner and in response to the vast area to be covered by the surveillance system, the engineering crew programmed the adjustable lens of eagle-eye cameras at 150° of viewing angle, which allows one camera to cover the range that should have been covered by 2.5 standard cameras. The digital image quality allows the 1080P DTV camera to capture every detail in the video. Nothing is left unseen, far or near. Not only the safety of visitors is maintained, but also the details of the daily life of insects and animals are captured by the DTV in living colors literally.