

Environmental Parameter Monitoring with DTV for High-Tech Fish Farming

Site Name	High-Tech Fishing Farming
Country/ City	Taiwan/Keelung
Industry	Others – Fish Farming
Solution	DTV Digital FHD Surveillance System
Solution Provider	A-Tec Subsystem Inc.
Reasons of Adoption	<ul style="list-style-type: none">■ Retrofit without re-cabling■ Long-distance transmission■ Full-HD video quality



Due to confidentiality consideration, the photo here is only an illustration.

CUSTOMER NEEDS AND PROBLEMS

The client is the owner of a giant grouper farm. Giant grouper is a kind of high-value economic food mainly for export, especially to Japan and Mainland China. The operation of the farm requires sophisticated control of the water quality, including the concentration of dissolved oxygen, salinity, water temperature, and pH. Since the quality of water seriously influences the survival rate at each stage from "fry", "larva", "small fish", and finally to "adult fish", the client applies quite a few advanced technologies. For example, the fish pond access system is built following the standard of a high-tech clean room and the security cameras are installed all over the fish farm. They combine the technologies with their experiences in fish farming to ensure the harvest of healthy fish.

The client had been using 350-kilopixel CCTV cameras and DVRs for many years to monitor the farm and the environmental parameters, and had been thinking about upgrading to 2-megapixel digital full-HD surveillance system. To ensure the clearness of the farm, the client requested to use the existing cables for the upgrade. If re-cabling is inevitable, the work shall introduce no dust and pollution. Many system installers (SI's) providing analog HD solutions had come to try because the developer claims that analog HD system can work over existing cable, enabling seamless upgrade. These installers ended up going away defeated because the existing cable is too old to carry clear analog signals. Before A-Tec knew about this case, although many SI's had tried, no conclusion were achieved.

CUSTOMER BENEFITS

A-Tec conducted a field test while visiting the client. They selected a CCTV camera which is not directly related to production, and replaced it with a DTV digital full-HD camera. They also replaced the CCTV DVR with DTV DVR. After the change, the client was very impressed to find that the original blurry video immediately became sharp and clear. They could even see the pore on skin of the people who stood close to the camera. DTV camera uses ccHDTV ICs developed by ITE Tech. Inc. The ICs are based on digital TV

transmission technology. The robust technology is the key why DTV video is less affected by the aging or damp cable.

A-Tec also introduced to the client one unique feature of DTV surveillance products: cable sharing. Just as multiple TV channels can be transmitted over one single cable, the signals from different cameras can be combined and sent through one single cable, too. Traditionally, it takes one cable for each camera to send the signal back to the control center for recording and monitoring, which means it needs 16 cables for 16 cameras, and hundreds of cables for hundreds of cameras. The cables not only occupy too much space, but also make maintenance difficult. With DTV solution, the number of cables can be significantly reduced, which also simplifies the future maintenance work. The client was very satisfied and decided on the spot to adopt A-Tec's DTV digital HD solution to upgrade the surveillance system of their fish farm.

The following figures show the system A-Tec planned for the client.

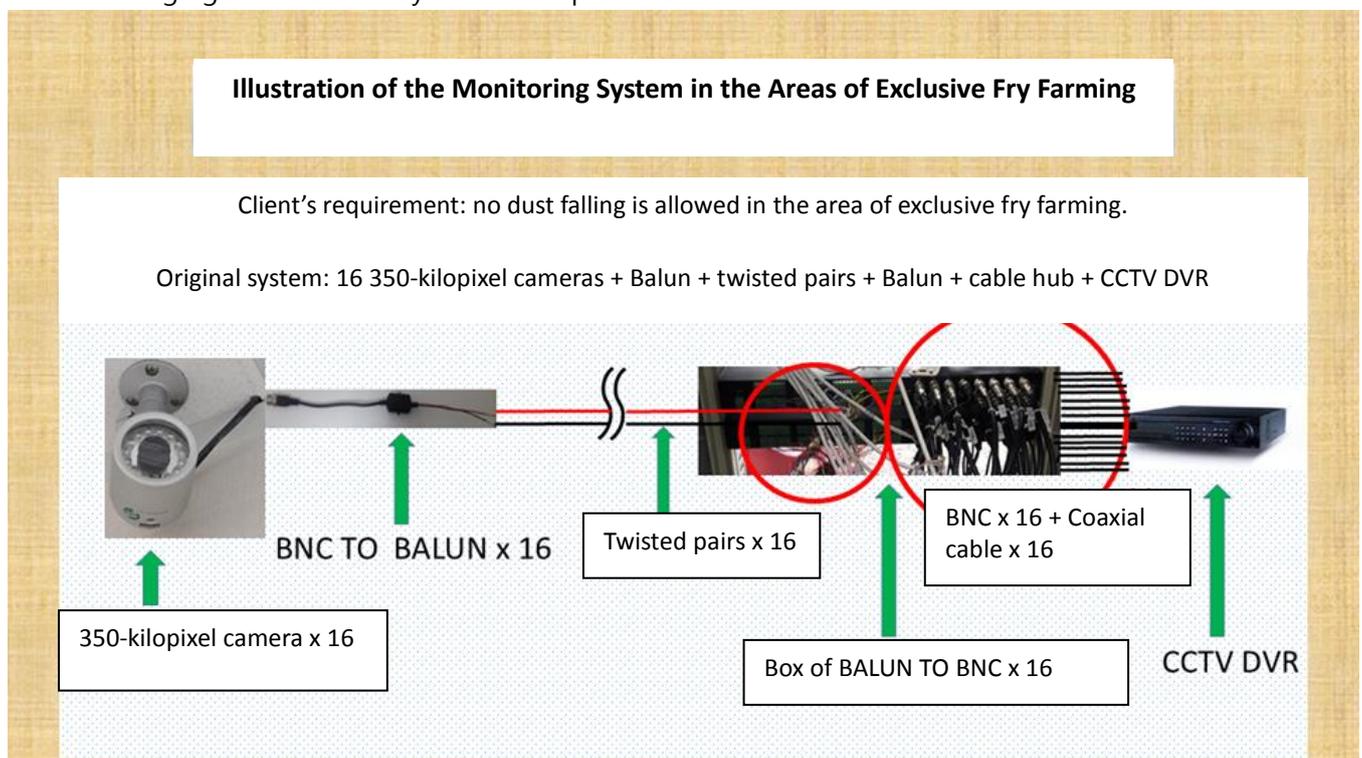


Figure 1. The original system.

New system: 16 2-megapixels DTV HD cameras + twisted pairs + DTV DVR

Installation method: Keep the original twisted pairs and the mounting brackets. Replace only the cameras and the DVR.

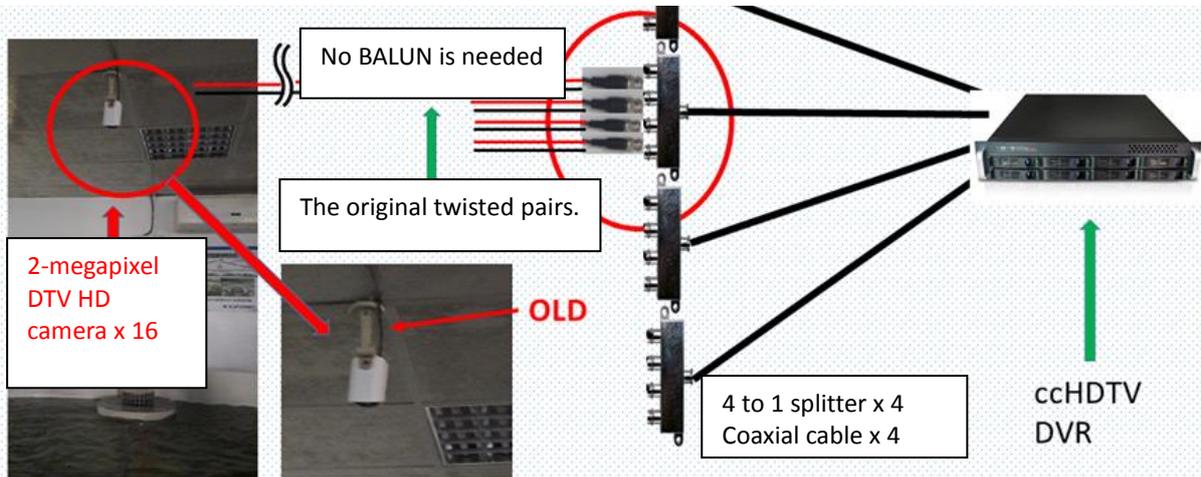


Figure 2. The new system planned by A-Tec.

Illustration of the Monitoring System for the Fish Farming Industry

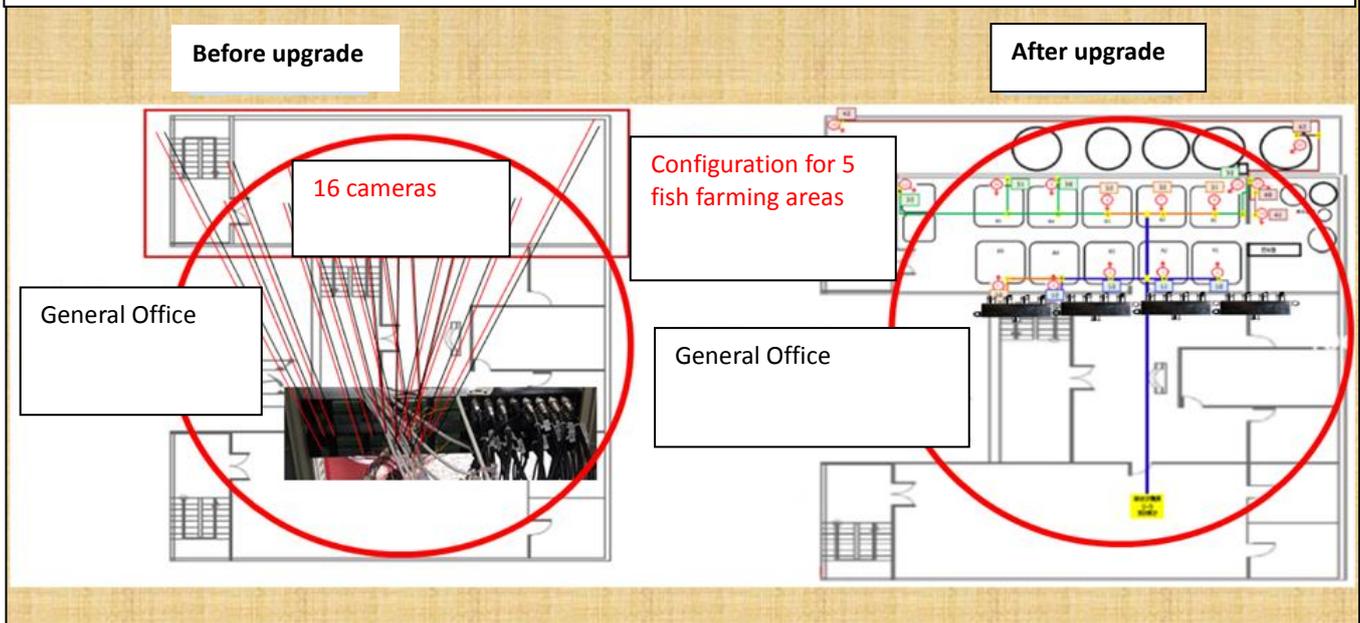


Figure 3. Comparison of the system before and after the upgrade.

The Results of the New Monitoring System for the Fish Farming Industry

- The environmental control parameters can be read clearly



Figure 4. After the installation of the new system is done, the environmental control parameters related to fish farming can be read clearly from the remote control center.