

Monitoring and Surveillance System IP TESCo

Thinking about the welfare of the community TESCo last February security camera CCTV system, whose purpose is to monitor continuously the facilities were installed. Students of careers in Environmental Engineering, Mechatronics and Computer Technology Degree

The Tecnológico de Estudios Superiores de Coacalco (TESCo), conducted in November 2009 an international public tender for a security project on campus. The winning company presented the project that included the installation of antennas and routers per building this in order to cover the campus with a Wi-Fi Internet network, also the installation of security cameras for constant monitoring of the facilities, students and institutional assets.

The Administration and Finance TESCo conditioned to the winning company to include students to intervene in this project, so educational authorities were given the task of making a selection of students that fulfilled the required profile.

One of the first actions was that students from TESCo and company engineers were presented at a meeting of induction, where the project was raised in general terms, the equipment used, technical data and how students would intervene; with that he took the first step to the start of activities.

The first activity was the design in AutoCAD Flats TESCo, installation of directional and omnidirectional internet service in concourses campus antennas, distribution and configuration of Access Point located inside of buildings was made, in in order to cover the administrative demand internet. Internally, the main were reconfigured to monitoring and controlling the network Switch, this thanks to the training and guidance of engineers who were 3COM throughout this process.

Ready new network-wide unified internet TESCo, the next step was the installation of security cameras.

Sony Ipela was the brand of choice for cameras and server thereof, began with imaging tests in a wired and wireless and the distribution and installation of internal and external way around campus, putting special emphasis on laboratory driveways, parking lots and places of potential risks to students, staff and faculty.

One of the main challenges was to establish control of the wi-fi network and monitoring the security cameras, so we had training for Microsoft and Dell for the configuration and use of the server that governs the network, and Sony for cameras server.



This project puts TESCo at the forefront of technology as it is the first educational institution of higher level, of the 26 universities and technological control of the State of Mexico, which has a security system and monitoring technology pointworth mentioning that everything was done with the support of the authorities of TESCo and students who participated did not receive any financial reward, instead stay with 3COM training, DELL, TRENDNET and a great personal and professional experience at form part of a complex and functional project that benefits its technology and themselves as professionals and

future engineers of the century.

Specifically Mechatronics Engineering students were involved in the restructuring of the network, functional testing of routers cameras, installation of servers, configuration and implementation of positioning and tour of each house.

Students Environmental Engineering conducted a study of solar technology and LED's for the implementation and installation of poles 12m in length that have a solar panel, a light with LEDs and a camera, all feedback with the supplied power photovoltaic cell. These poles designed for external areas that need monitoring and where it is difficult to make electrical connections, and covered 100% of campus facilities.

The student of Bachelor of Computer administered the new features of the network and the network settings on the computers of administrative staff, faculty and students in two ways: wired and wireless. He also made distribution for IP cameras communication with the server.

The project was formally presented in January this year and after a trial period. Operation was started in the month of February, since then authorities TESCo can monitor the campus from anywhere just having an internet connection, the server manages all cameras are recorded and automatically these recordings are compressed to reduce space Sony memory server, if required to review a specific day or a specific time to do the query.

Currently TESCo-wi-fi network provides Internet service to 180 students with laptops and all the staff and faculty, with a bandwidth up to 8GB 300Mb wired form and wirelessly.



EQUIPMENT USED IN THE PROJECT

Among the teams that were used include brands like Sony for the monitoring system, 3COM, TRENDNET, Microsoft and Dell encompass the network system.

Of the highlights in the teams we have:

SONY

Using the Sony line of high-quality visual products ready for IP, communication is delivered in high resolution images and of course audio quality never before attained.

The IPELA range of visual communication products encompasses the three-pronged concept of "Reality," "Intelligence," and "usability":

REALITY...

Where can improve the efficiency of connecting people and places with high quality audio and video. IPELA lets you enjoy audio and video live as if they were "there" when they are actually elsewhere.

INTELLIGENCE...

IPELA incorporate technology as visual recognition, intelligent detection methods, robust processing techniques and advanced search capabilities.

USABILITY...

The cameras feature easy to use controls and intuitive graphical user interface to meet the needs that comprise the tecnologico.



The server has the ability to monitor 32 cameras in real time, with the option to record 24 hours, 365 days a year, so it can be configured etching time, image quality, object recognition, draw backs video files on the server without stopping all active recordings.

The cameras have the ability to monitor and record in different formats, the tour program and need request user control having with this camera with just watching the major user

areas.

Shown below the specifications of the cameras purchased for the project.

Cámara IPELA SNCRZ50

Modelo: SNCRZ50

La nueva cámara SNC-RZ50 es la respuesta ideal de seguridad para lugares públicos como aeropuertos o sistemas de transportación, ya que ofrecen diferentes funciones para cada necesidad.

Ofrece la flexibilidad necesaria para ver casi cualquier cosa al alcance de su campo visual y de sus movimientos, y transmitir la imagen sobre una red informática común y corriente basada en el formato TCP/IP. Con un navegador de red, las imágenes y los movimientos PTZ de la cámara pueden controlarse en cualquier momento desde una PC localizada en cualquier lugar.

Highlights:

- Función PTZ (pan/tilt/zoom) de alta velocidad y silenciosos
- Formatos de compresión JPEG, MPEG4 y H.264 seleccionables
- Capacidad de doble codificación
- Instalación flexible
- Protección por contraseña
- Acceso simultáneo
- Función noche/día
- Transferencia de imágenes vía FTP/SMTP
- Detector de actividad/disparador de alarma con hasta tres sensores externos
- Alta frecuencia de cuadros
- Puertos de entrada de sensor / salida para alarma
- Ranura para PC Card
- Ranura de Memory Stick para almacenar o extraer archivos
- Capacidad multidifusión
- Función estabilizadora de imagen



Cámara IPELA SNCRZ25

Modelo: SNCRZ25

La nueva cámara IP cuenta con la función de compresión a formato JPEG y MPEG4, además de la función LAN inalámbrico que posee, tiene la capacidad diurna/nocturna. Es así como esta cámara crea nuevas e interesantes oportunidades para las necesidades de aplicación de sus clientes.

Este nuevo producto, que ofrece zoom óptico 18X, capacidad de operación diurna/nocturna, capacidad de audio bidireccional sobre una base operativa rápida y precisa de pan/tilt/zoom.

Con grandes características para usarse en diferentes lugares, desde aeropuertos o estaciones de tren, hasta en fábricas o supermercados, incluso en las esquinas de pequeñas o grandes ciudades; todo esto gracias a que la SNC-RZ25 es una cámara accesible y de muy fácil instalado.

Highlights:

- Servidor Web incorporado: usted puede ver y controlar las imágenes con ayuda de exploradores Web estándares
- Utiliza lo último en alta resolución: CCD Exwave HAD tipo 1/4"
- Alta sensibilidad: 0.7 Lux en color y 0.1 Lux en blanco y negro
- Lente zoom AF 18x incorporado
- Control adaptable de velocidad, que evita los cortes de secuencia de audio y video creados por la red
- Salida para video analógico: más de 470 líneas de televisión
- Transmisión bidireccional de audio, con entrada de micrófono externo
- Detección de movimientos con ayuda de vectores de movimiento
- Equipada con una entrada para sensor, dos salidas para relé, entrada para disparador externo en modo diurno/nocturno y salida externa para modo nocturno (blanco y negro)
- Ranura Compact Flash para memoria adicional o tarjeta inalámbrica 802.11b por medio de la SNCA-CFW1 opcional
- Alta frecuencia de cuadros: 30 cps (QVGA), 15 cps (VGA)
- Conector Ethernet 100Base-TX/10BASE-T



Cámara IPELA SNCRX550

Modelo: SNCRX550

La Sony SNC-RX550 es una cámara de techo conectada a la red, capaz de rotar en un radio de 360°, con pant/tilt/zoom panorámico de alta velocidad.

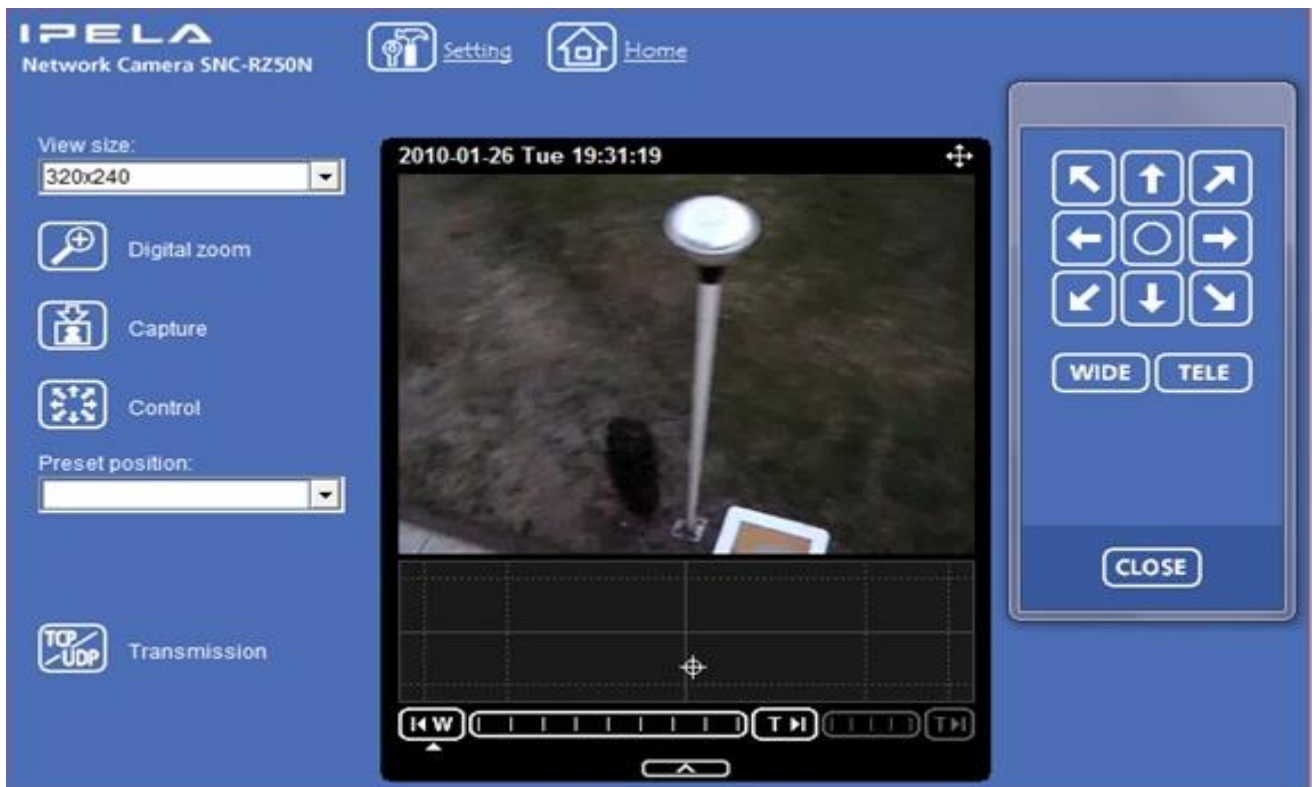
Cuenta con un excepcional zoom que permitira a los usuarios hacer tomas de objetos a corta y larga distancia con una gran calidad de imagen. Diseñada también para operaciones incluso nocturnas, ya que cuenta con la función Day/Night, dando asi imágenes claras en lugares con 0 lx de luz. Además podrás estar monitoreando al mismo tiempo desde un equipo adjunto, gracias al streaming, es asi como la SNC-RX550 se convierte en la opción perfecta para aplicaciones de monitoreo.

Highlights:

- Formatos de compresión JPEG, MPEG-4, H.264 seleccionables
- Alta frecuencia de cuadros
- Capacidad de doble codificación
- Función estabilizadora de imagen
- Función diurna/nocturna
- Avanzada detección de videocine
- Puertos de entrada para sensor y de salida para alarma
- Almacenamiento de imagen anterior y posterior a la activación de la alarma
- Transferencia de imágenes por FTP/SMTP
- Acceso simultáneo
- Capacidad de multidifusión
- Filtraje IP
- Ranura para Memory Stick y para PC Card



Other configurations are available to control the speed or position, power take pictures, object detection, enabling the sound or long-range zoom.



DELL

The Dell server has a great system and is responsible for providing the IP addresses of all the technological managing the administrative area network antennas, access points and technology students.

In actual dates are working to give low unnecessary to education and development of students and faculty pages, to thereby make better use of the network and in the same way the server will have the ability to deny service Internet intruders who came to present.

MICROSOFT

He had the support of the company to raise the network service, security features and thus maintain a stable and constant service.

3COM

This company has all the support of the distribution network and technology. Through its high-speed switches to 1 Gb to cope monitoring system of cameras and Internet distribution to each of the buildings and no loss of data or service falls. Thanks to the commitment of 3Com networking solutions provide high performance and cost

effectiveness that increase productivity.

Supporting ecology operational costs are reduced and compliance with control standards minimize the carbon footprint. As the energy consumption of networks increases rapidly, 3Com continues to reduce the power requirements of your network solutions, while increasing performance and functionality.

The increase in worldwide environmental expectations has resulted in new regulations for products worldwide. 3Com products meet or exceed the guidelines and environmental regulations, such as:

- Statement of the European Union's Restriction on the use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) equipment.
- Compliant China: "Administrative Measures for the Control of Pollution by Electronic Information Products" for products sent to China.
- WEEE (Waste Electrical and Electronic Equipment, Waste Electrical and Electronic Equipment).

TRENDNET

We provides high speed wireless support throughout the technology using access points inside buildings and having external antennas for full coverage with this institute.

Wireless technology is number N, which allows us to have greater coverage area and speed to transmit data, audio and video to a capacity of 300 Mb / s per access point.

LG NORTEL

With the new network in the IP Telephony Technology LG NORTEL where phones have implemented a simple setup, just putting on an IP address to the phone. Using the POWER OVER UTP cable technology in the phones functions without need for an additional power cable.

Currently, student members of the IEEE TESCo Rama are technical support of this project, with training and experience received are now responsible for the network to function and server security cameras are constantly recording and monitoring .

Thanks to projects like this, the Technology makes available to its students cutting-edge technology, the opportunity to develop skills based on their race and especially the experience of being part of a multidisciplinary team.

We hope that this work will future generations of this and other technology to analyze the needs of their institutions and groups such as student branches involved and propose viable and functional projects.



MundoAnuncio



IPELA
Monitoring



RAMA ESTUDIANTIL



IEEE

TECNOLÓGICO DE ESTUDIOS
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TESCo