IP Video Surveillance Network Solution

Telesail Video Surveillance Network Solution

Overview

Over more than 20 years, video surveillance systems have undergone significant changes, shifting from the earliest analog surveillance to digital surveillance (very popular in the past few years) to the present burgeoning IP video surveillance. From a technical perspective, the development path for video surveillance systems is characterized by the systems in three phases of the technology: closed-circuit television (CCTV), digital video recorder (DVR), and IP video surveillance (IPVS).

As the security surveillance industry continues to migrate from traditional analogue technology Closed Circuit Television (CCTV) to IP or convergence-based technology more businesses are looking to add IP surveillance to their core network infrastructure. And IP access method has become more and more attention of the object.

The Challenges

Compare with the usual access technology, ADSL remains the dominant position in the past. But, video surveillance is different from the ordinary ADSL application. For video surveillance service, It require the large uplink bandwidth to transfer the video surveillance stream from front end to the monitor center. And 1M-3Mbps bandwidth is required for each channel to uplink the video stream to the center. The downlink channel is used to transmit the control signal and require less bandwidth. Besides, due to the camera often spread widely, video surveillance shows the multi-point to point characteristics.

In theory, the DSLAM equipment can support the 1Mbps uplink rate because the distance between users is less than 2 km or even 1 km in downtown. ADSL bandwidth is greatly limited by the transmission distance. It is difficult to meet the IP video surveillance development demand. EPON, as a new access technology, fully meet the requirement of both bandwidth and transmission. Generally, each EPON line can provide 1 Gbps symmetrical bandwidth for 32 (64/128) users, each will be allocated about 30 Mbps bandwidth. The EPON supports a maximum distance of 20 km with enough bandwidth provided. On the other hand, Using passive optical fiber splitter, multiple surveillance point share with one trunk fiber. Optical splitter is a simple device which needs no power and could work in an all-weather environment. It greatly save the construction and maintenance cost.

IP surveillance solution based EPON technology

EPON technology adopt tree or star point-to-multipoint topology, network construction is very flexible. IP surveillance solution based on EPON technology, break the limitation of traditional solution in remote surveillance and data centralized storage, multi-level network surveillance. it can be easily to expand in future, fully protect customer investment.

Combined with strong service capability, Telesail EPON platform can meet a verity of surveillance network access requirements including limited fiber resource, monitoring point spread in bus or intensive distribution etc.
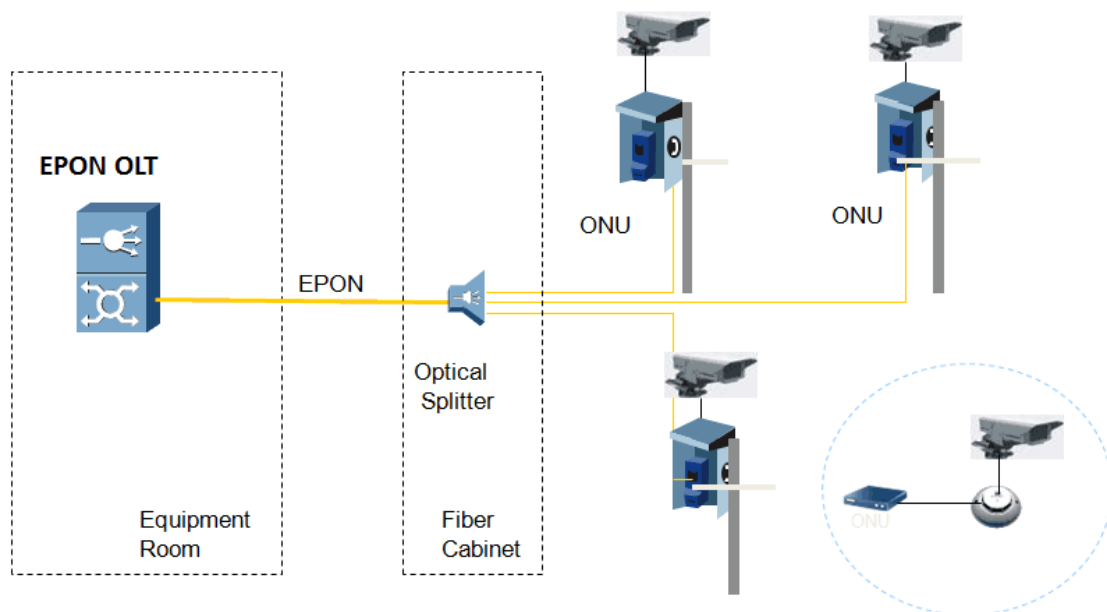

Figure 1   EPON Access Network

EPON is applicable to video surveillance along linear areas, such as gas pipelines, highways, and coastal defense areas.

EPON supports several topology structures, such as tree, star, and chain, making for long-distance (5- 20 km) video surveillance terminal access.

Tree type network topology as shown below:
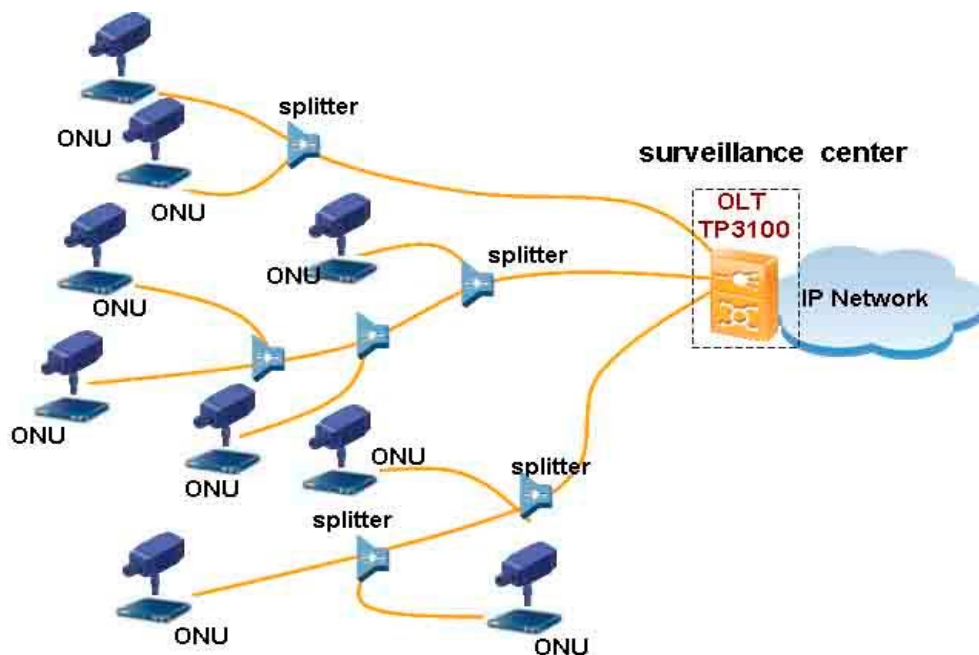

Figure 2   Tree type network topology
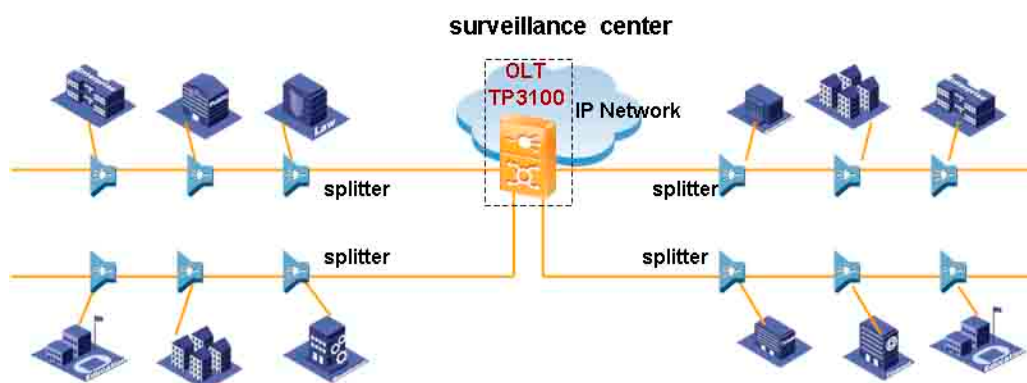
Link type network topology

Figure 3   Link type network topology

Place the camera video codec and EPON ONU before the camera. The video image stream uplink to the OLT in the surveillance center through passive optical network. The scheduling and monitoring are done by the surveillance software directly over IP networks.

Solution Benefits

Telesail has released multiple optical network unit (ONU) models that provide the Ethernet passive optical network (EPON) access service for video surveillance terminals. These ONU models provide 1/4/8/16/24 downstream interfaces.

These ONU models also support plug-and-play (PnP) service provisioning, which performs configuration remotely and automatically.

After devices are powered on and successfully registered, management channels and service channels are set up immediately, without the need for on-site manual configuration.

These ONU models can be managed efficiently with multiple management and maintenance methods, such as remote acceptance, patch installation, upgrade, and fault location. All are completed without the need for on-site software commissioning.

High-quality Video Surveillance Services

Telesail offers a high-quality service assurance system for video surveillance with many measures for the network side, such as the following:

- Large-cache, high-accuracy switch network
- Telesail GEPON OLT's port density and cache performance of these switches are among the top in the industry. The GEPON ensure no packet loss even in case of large traffic bursts for video surveillance services
- VLAN isolation technology and end-to-end QoS deployment
- When the video surveillance services share the same network resources with other services, Telesail uses VLAN technology to isolate them from each other and deploys an end-to-end QoS scheme to provide resource assurance for video surveillance services.
- End-to-end QoS monitoring
- Telesail solutions use hardware probes to monitor delay, jitter, and packet loss for video surveillance services. QoS data of all services in the entire path can be displayed on the network management system (NMS) interface, to help locate faults quickly.
- Intelligent routing for network multicast ensures real-time traffic distribution in a large network.

Featured Products

The OLT product has three types of chassis : TP6900,TP3500,TP3100, as shown below:

TP6900 Series

Large Capacity 10G EPON OLT

TP3600 Series

Layer 3 Aggregation EPON OLT

8/12/16 EPON Port

TP3600 Series

1U Type Cabinet EPON OLT

4 EPON Port

Figure 4   Telesail GEPON OLT Equipments

The GEPON product line supports various feature rich ONUs that provide cost effective and service enabling deployment options to the carriers.

TP1001-GE

EPON ONU with 1 GE

TP1004

EPON ONU with 4 FE

TP1504

EPON ONU with 4 GE

TP2008

EPON ONU with 8 FE

TP2016

EPON ONU with 16 FE

TP2016

EPON ONU with 24 FE

TP1004B

Outdoor EPON ONU with 4FE

About Telesail Technology Co.limited.

Founded in China in 2005 and with offices worldwide, Telesail is a leading provider of networking infrastructure and flexible, interoperable network solutions. The company provides reliable video, voice and data network solutions to clients in multiple markets including government, healthcare, defense, education, retail, hospitality and network service providers.

Telesail is committed to innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.
Visit us online at **telesail.com**

Telesail Technology Co.,Limited
TAIWEI Tower, No. 31 Jiancai West St.
Haidian District, Beijing, P.R.China 100096
Telephone：+86 (10) 82912638
Email: sale@telesail.com
http://www.telesail.com